Also known as state estimator; state observer. { əb'zər·vər }

obsolescence [ENG] Decreasing value of functional and physical assets or value of a product or facility from technological changes rather than deterioration. { ˌäb·sə'les·əns }

occlusion [COMPUT SCI] In computer vision, the obstruction of a view. { ə'klü·zhən }

occupied bandwidth [COMMUN] Frequency bandwidth such that, below its lower and above its upper frequency limits, the mean powers radiated are each equal to 0.5% of the total mean power radiated by a given emission. { 'äk·yə ˌpīd 'banˌdwidth }

OCR See optical character recognition.

octal base [ELECTR] Tube base having a central aligning key and positioned for eight equally spaced pins. { 'äkt·əl ˌbās }

octal debugger [COMPUT SCI] A simple debugging program which permits only octal (instead of symbolic) address references. { 'äkt·əl dē'bəg·ər }

octave-band analyzer [ENG ACOUS] A portable sound analyzer which amplifies a microphone signal, feeds it into one of several band-pass filters selected by a switch, and indicates the magnitude of sound in the corresponding frequency band on a logarithmic scale; all the bands except the highest and lowest span an octave in frequency. Abbreviated OBA. { 'äk·tiv ¦band 'an·əˌlīz·ər }

octave-band filter [ENG ACOUS] A band-pass filter in which the upper cutoff frequency is twice the lower cutoff frequency. { 'äk·tiv ¦band 'fil·tər }

octave-band oscillator [ELECTR] An oscillator that can be tuned over a frequency range of 2 to 1, so that its highest frequency is twice its lowest frequency. { 'äk·tiv ¦band 'äs·əˌlād·ər }

octode [ELECTR] An eight-electrode electron tube containing an anode, a cathode, a control electrode, and five additional electrodes that are ordinarily grids. { 'äkˌtōd }

octonary signaling [COMMUN] A communications mode in which information is passed by the presence and absence of plus and minus variation of eight discrete levels of one parameter of the signaling medium. { 'äk·təˌner·ē'sig·nə·liŋ }

odd-even check [COMPUT SCI] A means of detecting certain kinds of errors in which an extra bit, carried along with each word, is set to zero or one so that the total number of zeros or ones in each word is always made even or always made odd. Also known as parity check. { 'äd 'ē·vən ˌchek }

odd parity [COMPUT SCI] Property of an expression in binary code which has an odd number of ones. { 'äd 'par·əd·ē }

odd parity check [COMPUT SCI] A parity check in which the number of 0's or 1's in each word is expected to be odd; if the number is even, the check bit is 1, and if the number is odd, the check bit is 0. { 'äd 'par·əd·ē ˌchek }

O-display [ELECTR] A radar display format in which an adjustable notch, absenting any trace, is moved in an A-display to assist the operator in determining and reporting the range of a target. Also known as O-indicator; O-scan; O-scope. { 'ō diˌsplā }

odoriferous homing [ELECTR] Homing on the ionized air produced by the exhaust gases of a snorkeling submarine. { ˌō·də'rif·ə·rəs 'hōm·iŋ }

OEM [ELECTR] Abbreviation for original equipment manufacturer. Generally describes original, factory-installed equipment.

off-center plan position indicator [ELECTR] A plan position indicator in which the center of the display that represents the location of the radar can be moved from the center of the screen to any position on the face of the PPI. { 'ȯf ˌsent·ər 'plan pəˌzish·ən 'in·dəˌkād·ər }

off-hook [COMMUN] The active state (closed loop) of a subscriber or PBX user loop. { 'ȯf ˌhůk }

off-hook service [COMMUN] Priority telephone service for key personnel that affords a connection from caller to receiver by the simple expedient of removing the phone from its cradle or hook. { 'ȯf ˌhůk ˌsər·vəs }

off-line [COMPUT SCI] Describing equipment not connected to a computer, or temporarily disconnected from one. { 'ȯf ¦līn }

off-line cipher [COMMUN] Method of encrypting which is not associated with a particular transmission system and in which the resulting encrypted message can be transmitted by any means. { 'ȯf ¦līn 'sī·fər }

off-line equipment [COMPUT SCI] Peripheral equipment or devices not in direct communication with the central processing unit of a computer. Also known as auxiliary equipment. { 'ȯf ¦līn i'kwip·mənt }

off-line mode [COMPUT SCI] Any operation, such as printing, which does not involve the main computer. { 'ȯf ¦līn 'mōd }

off-line operation [COMPUT SCI] Operation of peripheral equipment in conjunction with, but not under the control of, the central processing unit. { 'ȯf ¦līn ˌäp·ə'rā·shən }

off-line processing [COMPUT SCI] Any processing which takes place independently of the central processing unit. { 'ȯf ¦līn 'präˌses·iŋ }

off-line storage [COMPUT SCI] A storage device not under control of the central processing unit. { 'ȯf ¦līn 'stȯr·ij }

off-line unit [COMPUT SCI] Any operation device which is not attached to the main computer. { 'ȯf ¦līn 'yü·nət }

offload [COMPUT SCI] To transfer operations from one computer to another, usually from a large computer to a smaller one. { 'ȯfˌlōd }

offset [COMPUT SCI] See displacement. [CONT SYS] The steady-state difference between the desired control point and that actually obtained in a process control system. { 'ȯfˌset }

offset-center plan position indicator See off-center plan position indicator. { 'ȯfˌset ¦sen·tər 'plan pəˌzish·ən 'in·dəˌkād·ər }

offset plan position indicator See off-center plan position indicator. { 'ȯfˌset 'plan pəˌzish·ən 'in·dəˌkād·ər }

offset voltage [ELECTR] The differential input voltage that must be applied to an operational amplifier to return the zero-frequency output voltage to zero volts, due to device mismatching at the input stage. { 'ȯf,set ,vōl·tij }

ohm [ELEC] The unit of electrical resistance in the rationalized meter-kilogram-second system of units; equal to the resistance through which a current of 1 ampere will flow when there is a potential difference of 1 volt across it. Symbolized Ω. { ōm }

ohmic [ELEC] Pertaining to a substance or circuit component that obeys Ohm's law. { 'ō·mik }

ohmic contact [ELEC] A region where two materials are in contact, which has the property that the current flowing through it is proportional to the potential difference across it. { 'ō·mik 'kän ,takt }

ohmic dissipation [ELECTR] Loss of electric energy when a current flows through a resistance due to conversion into heat. Also known as ohmic loss. { 'ō·mik ,dis·ə'pā·shən }

ohmic loss *See* ohmic dissipation. { 'ō·mik 'lȯs }

ohmic resistance [ELEC] Property of a substance, circuit, or device for which the current flowing through it is proportional to the potential difference across it. { 'ō·mik ri'zis·təns }

ohmmeter [ENG] An instrument for measuring electric resistance; scale may be graduated in ohms or megohms. { 'ō,mēd·ər }

Ohm's law [ELEC] The law that the direct current flowing in an electric circuit is directly proportional to the voltage applied to the circuit; it is valid for metallic circuits and many circuits containing an electrolytic resistance. { 'ōmz ,lȯ }

Ohm's law [ELEC] The law that the direct current flowing in an electric circuit is directly proportional to the voltage applied to the circuit; it is valid for metallic circuits and many circuits containing an electrolytic resistance. { 'ōmz ,lȯ }

ohms per volt [ENG] Sensitivity rating for measuring instruments, obtained by dividing the resistance of the instrument in ohms at a particular range by the full-scale voltage value at that range. { 'ōmz pər 'vōlt }

oil-break [ELEC] Property of an electrical switch, circuit breaker, or similar apparatus whose contacts separate in oil. { 'ȯil ,brāk }

oil circuit breaker [ELECTR] A high-voltage circuit breaker in which the arc is drawn in oil to dissipate the heat and extinguish the arc; the intense heat of the arc decomposes the oil, generating a gas whose high pressure produces a flow of fresh fluid through the arc that furnishes the necessary insulation to prevent a restrike of the arc. { 'ȯil 'sər·kət ,brāk·ər }

oil-filled cable [ELEC] Cable having insulation impregnated with an oil which is fluid at all operating temperatures and provided with facilities such as longitudinal ducts or channels and with reservoirs, by this means positive oil pressure can be maintained within the cable at all times, incipient voids are promptly filled during periods of expansion, and all surplus oil is adequately taken care of during periods of contraction. { 'ȯil ¦fild ,kā·bəl }

oil-immersed [ELEC] Property of a transformer, reactor, regulator, or similar apparatus whose coils are immersed in an insulating liquid that is usually, but not necessarily, oil. { 'ȯil i,mərst }

oil switch [ELEC] A switch whose contacts are immersed in oil in order to suppress the arc and prevent the contacts from being damaged. { 'ȯil ,swich }

O-indicator *See* O-display. { 'ō ,in·də,kād·ər }

OL *See* only loadable.

olivette [ELEC] Standing floodlight used in the wings for lighting stage entrances and acting areas at fairly close range; bulb wattage ranges from 500 to 1500 watts. { ¦äl·ə¦vet }

OLRT system *See* on-line real-time system. { ,ō ,el,är'tē ,sis·təm }

omegatron [ELECTR] A miniature mass spectrograph, about the size of a receiving tube, that can be sealed to another tube and used to identify the residual gases left after evacuation. { ō'meg·ə ,trän }

OMG object model *See* Object Management Group object model. { ¦ō¦em¦jē 'äb·jikt ,mäd·əl }

omission factor [COMPUT SCI] In information retrieval, the ratio obtained in dividing the number of nonretrieved relevant documents by the total number of relevant documents in the file. { ō'mish·ən ,fak·tər }

omnidirectional [ELECTR] Radiating or receiving equally well in all directions. Also known as nondirectional. { ¦äm·nə·di'rek·shən·əl }

omnidirectional antenna [ELECTROMAG] An antenna that has an essentially circular radiation pattern in azimuth and a directional pattern in elevation. Also known as nondirectional antenna. { ¦äm·nə·di'rek·shən·əl an'ten·ə }

OMR *See* optical mark reading.

OMS *See* ovonic memory switch.

onboard [COMPUT SCI] Referring to a computer hardware component that is built directly into the computer. { 'ȯn'bȯrd }

on-call circuit [COMMUN] A permanently designated circuit that is activated only upon request of the user; this type of circuit is usually provided when a full-period circuit cannot be justified and the duration of use cannot be anticipated; during unactivated periods, the communications facilities required for the circuit are available for other requirements. { 'ȯn 'kȯl ,sər·kət }

ondograph [ELECTR] An instrument that draws the waveform of an alternating-current voltage step by step; a capacitor is charged momentarily to the amplitude of a point on the voltage wave, then discharged into a recording galvanometer, with the action being repeated a little further along on the waveform at intervals of about 0.01 second. { 'än·də,graf }

ondoscope [ELECTR] A glow-discharge tube used to detect high-frequency radiation, as in the vicinity of a radar transmitter; the radiation ionizes the gas in the tube and produces a visible glow. { 'än·də,skōp }

one-address code [COMPUT SCI] In computers, a code using one-address instructions. { 'wən ə ˌdres 'kōd }

one-address instruction [COMPUT SCI] A digital computer programming instruction that explicitly describes one operation and one storage location. Also known as single-address instruction. { 'wən ə,dres in'strək·shən }

one condition [COMPUT SCI] The state of a magnetic core or other computer memory element in which it represents the value 1. Also known as one state. { 'wən kən,dish·ən }

one-digit subtracter *See* half-subtracter. { 'wən ˌdij·ət səb'trak·tər }

one-dimensional array [COMPUT SCI] A group of related data elements arranged in a single row or column. { ¦wən də¦men·chən·əl ə'rā }

one-ended tape Turing machine [COMPUT SCI] A variation of a Turing machine in which the tape can be extended to the right, but not to the left. { 'wən ¦end·əd ¦tāp 'tùr·iŋ mə,shēn }

one-level address [COMPUT SCI] In digital computers, an address that directly indicates the location of an instruction or some data. { 'wən ˌlev·əl ə'dres }

one-level code [COMPUT SCI] Any code using absolute addresses and absolute operation codes. { 'wən ˌlev·əl 'kōd }

one-level subroutine [COMPUT SCI] A subroutine that does not use other subroutines during its execution. { 'wən ˌlev·əl 'səb·rü,tēn }

one-line adapter [COMPUT SCI] A unit connecting central processes and permitting high-speed transfer of data under program control. { 'wən ˌlīn ə'dap·tər }

one-part code [COMMUN] Code in which the plain text elements are arranged in alphabetical or numerical order, accompanied by their code groups also arranged in alphabetical, numerical, or other systematic order. { 'wən ˌpärt 'kōd }

one-pass operation [COMPUT SCI] An operating method, now standard, which produces an object program from a source program in one pass. { 'wən ˌpas ˌäp·ə'rā·shən }

one-plus-one address instruction [COMPUT SCI] A digital computer instruction whose format contains two address parts; one address designates the operand to be involved in the operation; the other indicates the location of the next instruction to be executed. { 'wən ˌpləs 'wən ə¦dres in,strək·shən }

one-quadrant multiplier [ELECTR] Of an analog computer, a multiplier in which operation is restricted to a single sign of both input variables. { 'wən ˌkwä·drənt 'məl·tə,plī·ər }

one's complement [COMPUT SCI] A numeral in binary notation, derived from another binary number by simply changing the sense of every digit. { 'wənz 'käm·plə·mənt }

ones-complement code [COMPUT SCI] A number coding system used in some computers, where, for any number x, $x = (1 - 2^{n-1}) \cdot a_0 + 2^{n-2}a_1 + \cdots + a_{n-1}$, where $a_i = 1$ or 0. { 'wənz 'käm·plə·mənt ˌkōd }

one-shot multivibrator *See* monostable multivibrator. { 'wən ˌshät ˌməl·tə'vī,brād·ər }

one-shot operation *See* single-step operation. { 'wən ˌshät ˌäp·ə'rā·shən }

one-sided abrupt junction [ELECTR] An abrupt junction that is realized by giving one side of the junction a high doping level compared with the other; that is, an n^+p or p^+n junction. { 'wən ˌsīd·əd ə'brəpt 'jəŋk·shən }

one state *See* one condition. { 'wən ˌstāt }

one-step operation *See* single-step operation. { 'wən ˌstep ˌäp·ə'rā·shən }

one-time pad [COMMUN] A keying sequence based on random numbers that is used to code a single message and is then destroyed. { ¦wən ¦tīm 'pad }

one-to-many correspondence [COMPUT SCI] A structure that establishes relationships between two types of items in a data base such that one item of the first type can relate to several items of the second type, but items of the second type can relate back to only one item of the first type. { ¦wən tə ¦men·ē ˌkär·ə'spän·dəns }

one-to-one assembler [COMPUT SCI] An assembly program which produces a single instruction in machine language for each statement in the source language. Also known as one-to-one translator. { ¦wən tə ¦wən ə'sem·blər }

one-to-one translator *See* one-to-one assembler. { ¦wən tə ¦wən 'tranz,lād·ər }

O network [ELEC] Network composed of four impedance branches connected in series to form a closed circuit, two adjacent junction points serving as input terminals, the remaining two junction points serving as output terminals. { 'ō ˌnet,wərk }

one-way trunk [ELEC] Trunk between two central offices, used for calls that originate at one of those offices, but not for calls that originate at the other. Also known as outgoing trunk. { 'wən ˌwā 'trəŋk }

on-hook [COMMUN] The idle state (open loop) of a subscriber or PBX user loop. { 'ȯn ˌhůk }

onion diagram [SYS ENG] A schematic diagram of a system that is composed of concentric circles with the innermost circle representing the core and all the outer layers dependent on the core. { 'ən·yən ˌdī·ə,gram }

on-line [COMPUT SCI] Pertaining to equipment capable of interacting with a computer. [ELECTR] The state in which a piece of equipment or a subsystem is connected and powered to deliver its proper output to the system. { 'ȯn ˌlīn }

on-line central file [COMPUT SCI] An organized collection of data, such as an on-line disk file, in a storage device under direct control of a central processing unit, that serves as a continually available source of data in applications where real-time or direct-access capabilites are required. { 'ȯn ˌlīn 'sen·trəl 'fīl }

on-line cipher [COMMUN] A method of encryption directly associated with a particular transmission system, whereby messages may be encrypted and simultaneously transmitted from

one station to one or more stations where reciprocal equipment is automatically operated. { 'ón ,līn 'sī·fər }

on-line computer system [COMPUT SCI] A computer system which is adapted to on-line operation. { 'ón ,līn kəm'pyüd·ər ,sis·təm }

on-line cryptographic operation *See* on-line operation. { 'ón ,līn ,krip·tə'graf·ik ,äp·ə'rā·shən }

on-line data reduction [COMPUT SCI] The processing of information as rapidly as it is received by the computing system. { 'ón ,līn ,dad·ə ri ,dək·shən }

on-line disk file [COMPUT SCI] A magnetic disk directly connected to the central processing unit, thereby increasing the memory capacity of the computer. { 'ón ,līn 'disk ,fīl }

on-line equipment [COMPUT SCI] The equipment or devices in a system whose operation is under control of the central processing unit, and in which information reflecting current activity is introduced into the data-processing system as soon as it occurs. { 'ón ,līn i'kwip·mənt }

on-line inquiry [COMPUT SCI] A level of computer processing that results from adding to an expanded batch system the capability to immediately access, from any terminal, any record that is stored in the disk files attached to the computer. { 'ón ,līn 'in·kwə·rē }

on-line mode [COMPUT SCI] Mode of operation in which all devices are responsive to the central processor. { 'ón ,līn ,mōd }

on-line operation [COMMUN] A method of operation whereby messages are encrypted and simultaneously transmitted from one station to one or more other stations where reciprocal equipment is automatically operated to permit reception and simultaneous decryptment of the message. Also known as on-line cryptographic operation. [COMPUT SCI] Computer operation in which input data are fed into the computer directly from observing instruments or other input equipment, and computer results are obtained during the progress of the event. { 'ón ,līn ,äp·ə'rā·shən }

on-line real-time system [COMPUT SCI] A computer system that communicates interactively with users, and immediately returns to them the results of data processing during an interaction. Abbreviated OLRT system. { 'ón ,līn 'rēl ,tīm 'sis·təm }

on-line secured communications system [COMMUN] Any combination of interconnected communications centers partially or wholly equipped for on-line cryptographic operation and capable of relaying or switching message traffic using on-line cryptographic procedures. { 'ón ,līn sə'kyurd kə,myü·nə'kā·shənz ,sis·təm }

on-line storage [COMPUT SCI] Storage controlled by the central processing unit of a computer. { 'ón ,līn 'stór·ij }

on-line tab setting [COMPUT SCI] A feature in some computer printers which allows the computer that controls the printer to issue commands to set and change the tab stops. { 'ón ,līn 'tab ,sed·iŋ }

on-line typewriter [COMPUT SCI] A typewriter which transmits information into and out of a computer, and which is controlled by the central processing unit and thus by whatever program the computer is carrying out. { 'ón ,līn 'tīp ,rīd·ər }

only loadable [COMPUT SCI] Attribute of a load module which can be brought into main memory only by a LOAD macroinstruction given from another module. Abbreviated OL. { 'ōn·lē 'lōd·ə·bəl }

on-off control [CONT SYS] A simple control system in which the device being controlled is either full on or full off, with no intermediate operating positions. Also known as on-off system. { 'ón 'óf kən,trōl }

on-off keying [COMMUN] Binary form of amplitude modulation in which one of the states of the modulated wave is the absence of energy in the keying interval. { 'ón 'óf ,kē·iŋ }

on-off switch [ELEC] A switch used to turn a receiver or other equipment on or off; often combined with a volume control in radio and television receivers. { 'ón 'óf ,swich }

on-off system *See* on-off control. { 'ón 'óf ,sis·təm }

on-off tests [ELEC] Tests conducted to determine the source of interference by switching various suspected sources on and off while observing the victim receiver. { 'ón 'óf ,tests }

Onsager theory of dielectrics [ELEC] A theory for calculating the dielectric constant of a material with polar molecules in which the local field at a molecule is calculated for an actual spherical cavity of molecular size in the dielectric using Laplace's equation, and the polarization catastrophe of the Lorentz field theory is thereby avoided. { 'ón,säg·ər ,thē·ə·rē əv ,dī·ə'lek·triks }

on the beam [ELECTR] Centered on a beam of, or on an equisignal zone of, radiant energy, as a radio range. { 'ón thə 'bēm }

OOP *See* object-oriented programming.

open [ELEC] **1.** Condition in which conductors are separated so that current cannot pass. **2.** Break or discontinuity in a circuit which can normally pass a current. { 'ō·pən }

Open-Access Same-Time Information System [ELEC] An electronic system that uses Internet Web nodes to communicate to everyone in a fair and equitable manner information on available transmission capability and the cost of purchasing transmission services on the electric power transmission system, and allows for purchasing and reselling of transmission rights. Abbreviated OASIS. { ,ō·pən¦āk,ses¦sām¦tīm ,in·fər'mā·shən ,sis·təm }

open architecture [COMPUT SCI] A computer architecture whose specifications are made widely available to allow third parties to develop add-on peripherals for it. { 'ō·pən 'ar·kə,tek·chər }

open-bus system [COMPUT SCI] A computer with an expansion bus that is designed to easily accept expansion boards. { ¦ō·pən 'bəs ,sis·təm }

open-center plan position indicator [ENG] A plan position indicator on which no signal is

displayed within a set distance from the center. { 'ō·pən ,sen·tər 'plan pə,zish·ən 'in·də,kād·ər }

open circuit [ELEC] An electric circuit that has been broken, so that there is no complete path for current flow. { 'ō·pən 'sər·kət }

open-circuit impedance [ELEC] Of a line or four-terminal network, the driving-point impedance when the far end is open. { 'ō·pən ¦sər·kət im'pēd·əns }

open-circuit jack [ELEC] Jack that normally leaves its circuit open; the circuit can be closed only by a circuit connected to the plug that is inserted in the jack. { 'ō·pən ¦sər·kət 'jak }

open-circuit signaling [COMMUN] Type of signaling in which no current flows while the circuit is in the idle condition. { 'ō·pən ¦sər·kət 'sig·nə·liŋ }

open-circuit voltage [ELEC] The voltage at the terminals of a source when no appreciable current is flowing. Also known as no-load voltage. { 'ō·pən ¦sər·kət 'vōl·tij }

open-delta connection [ELEC] An unsymmetrical transformer connection which is employed when one transformer of a bank of three single-phase delta-connected units must be cut out, because of failure. Also known as V connection. { 'ō·pən ¦del·tə kə,nek·shən }

open-ended [COMPUT SCI] Of techniques, designed to facilitate or permit expansion, extension, or increase in capability; the opposite of closed-in and artificially constrained. { ¦ō·pən ¦en·dəd }

open-ended system [COMPUT SCI] In character recognition, a system in which the input data to be read are derived from sources other than the computer with which the character reader is associated. { ¦ō·pən ¦en·dəd 'sis·təm }

open file [COMPUT SCI] A file that can be accessed for reading, writing, or both. { 'ō·pən 'fīl }

open-flame arc [ELECTR] An electric arc which causes the anode to evaporate and be ejected as a flame. { ¦ō·pən ¦flām 'ärk }

open-fuse cutout [ELEC] Enclosed fuse cutout in which the fuse support and fuse holder are exposed. { 'ō·pən ,fyüz 'kə,dau̇t }

open-link fuse [ELEC] A simple type of fuse that consists of a strip of fuse material bolted to open terminal blocks. { ¦ō·pən ¦liŋk 'fyüz }

open-loop control system [CONT SYS] A control system in which the system outputs are controlled by system inputs only, and no account is taken of actual system output. { ¦ō·pən ¦lüp kən'trōl ,sis·təm }

open-phase protection [ELEC] Effect of a device operating on the loss of current in one phase of a polyphase circuit to cause and maintain the interruption of power in the circuit. { ¦ō·pən ¦fāz prə'tek·shən }

open-phase relay [ELEC] Relay which functions by reason of the opening of one or more phases of a polyphase circuit, when sufficient current is flowing in the remaining phase or phases. { ¦ō·pən ¦fāz 'rē,lā }

open plug [ELEC] Plug designed to hold jack springs in their open position. { 'ō·pən ,pləg }

open routine [COMPUT SCI] **1.** A routine which can be inserted directly into a larger routine without a linkage or calling sequence. **2.** A computer program that changes the state of a file from closed to open. { 'ō·pən rü,tēn }

open shop [COMPUT SCI] A data-processing center organization in which individuals from outside the data-processing community are permitted to implement their own solutions to problems. { 'ō·pən ¦shäp }

open source software [COMPUT SCI] Software that is written in such a way that others are encouraged to freely redistribute it, and all changes to the code must be made freely available. { ¦ō·pən ,sȯrs 'sȯf,twer }

open standard [COMPUT SCI] Freely distributed. { ¦ō·pən 'stan·dərd }

open subroutine [COMPUT SCI] A set of computer instructions that collectively perform some particular function and are inserted directly into the program each and every time that particular function is required. { 'ō·pən 'səb·rü,tēn }

open system [COMPUT SCI] A computer system whose key software interfaces are specified, documented, and made publicly available. { 'ō·pən 'sis·təm }

open-system architecture [COMPUT SCI] The structure of a computer network that allows different types of computers and peripheral devices from different manufacturers to be connected together. { 'ō·pən ¦sis·təm 'är·kə ,tek·chər }

open wire [ELEC] A conductor supported above the ground, separate from other conductors. { 'ō·pən 'wīr }

open-wire carrier system [COMMUN] A system for carrier telephony using an open-wire line. { 'ō·pən ¦wir 'kar·ē·ər ,sis·təm }

open-wire feeder *See* open-wire transmission line. { 'ō·pən ¦wir 'fēd·ər }

open-wire loop [ELEC] Branch line on a main open-wire line. { 'ō·pən ¦wir 'lüp }

open-wire transmission line [ELEC] A transmission line consisting of two spaced parallel wires supported by insulators, at the proper distance to give a desired value of surge impedance. Also known as open-wire feeder. { 'ō·pən ¦wir tranz'mish·ən ,līn }

operand [COMPUT SCI] Any one of the quantities entering into or arising from an operation. { 'äp·ə,rand }

operate time [COMPUT SCI] The phase of computer operation when an instruction is being carried out. { 'äp·ə,rāt ,tīm }

operating angle [ELECTR] Electrical angle of the input signal (for example, portion of a cycle) during which plate current flows in a vacuum tube amplifier. { 'äp·ə,rād·iŋ ,aŋ·gəl }

operating delay [COMPUT SCI] Computer time lost because of mistakes or inefficiency of operating personnel or users of the system, excluding time lost because of defects in programs or data. { 'äp·ə,rād·iŋ di,lā }

operating instructions [COMPUT SCI] A detailed description of the actions that must be carried out by a computer operator in running a program or group of interrelated programs, usually

included in the documentation of a program supplied by a programmer or systems analyst, along with the source program and flow charts. { 'äp·ə,rād·iŋ in,strak·shənz }

operating point [ELECTR] Point on a family of characteristic curves of a vacuum tube or transistor where the coordinates of the point represent the instantaneous values of the electrode voltages and currents for the operating conditions under study or consideration. { 'äp·ə,rād·iŋ ,póint }

operating position [COMMUN] Terminal of a communications channel which is attended by an operator; usually the term refers to a single operator, such as a radio operator's position or a telephone operator's position; however, certain terminals may require more than one operating position. { 'äp·ə,rād·iŋ pə,zish·ən }

operating power [ELECTROMAG] Power that is actually supplied to a radio transmitter antenna. { 'äp·ə,rād·iŋ ,paů·ər }

operating range [ELECTR] The frequency range over which a reversible transducer is operable. { 'äp·ə,rād·iŋ ,rānj }

operating ratio [COMPUT SCI] The time during which computer hardware operates and gives reliable results divided by the total time scheduled for computer operation. { 'äp·ə,rād·iŋ ,rā·shō }

operating system [COMPUT SCI] A set of programs and routines which guides a computer or network in the performance of its tasks, assists the programs (and programmers) with certain supporting functions, and increases the usefulness of the computer or network hardware. { 'äp·ə ,rād·iŋ ,sis·təm }

operating system supervisor [COMPUT SCI] The control program of a set of programs which guide a computer in the performance of its tasks and which assist the program with certain supporting functions. { 'äp·ə,rād·iŋ ,sis·təm 'sü·pər,vīz·ər }

operational [ENG] Of equipment such as aircraft or vehicles, being in such a state of repair as to be immediately usable. { ,äp·ə'rā·shən·əl }

operational amplifier [ELECTR] An amplifier having high direct-current stability and high immunity to oscillation, generally achieved by using a large amount of negative feedback; used to perform analog-computer functions such as summing and integrating. { ,äp·ə'rā·shən·əl 'am·plə,fī·ər }

operational label [COMPUT SCI] A combination of letters and digits at the beginning of the tape which uniquely identify the tape required by the system. { ,äp·ə'rā·shən·əl 'lā·bəl }

operational standby program [COMPUT SCI] The program operating in the standby computer when in the duplex mode of operation. { ,äp·ə'rā·shən·əl 'stand,bī ,prō,gram }

operation code [COMPUT SCI] A field or portion of a digital computer instruction that indicates which action is to be performed by the computer. Also known as command code. { ,äp·ə'rā·shən ,kōd }

operation cycle [COMPUT SCI] The portion of a memory cycle required to perform an operation; division and multiplication usually require more than one memory cycle to be completed. { ,äp·ə'rā·shən ,sī·kəl }

operation decoder [COMPUT SCI] A device that examines the operation contained in an instruction of a computer program and sends signals to the circuits required to carry out the operation. { ,äp·ə'rā·shən dē'kōd·ər }

operation number [COMPUT SCI] **1.** Number designating the position of an operation, or its equivalent subroutine, in the sequence of operations composing a routine. **2.** Number identifying each step in a program stated in symbolic code. { ,äp·ə'rā·shən ,nəm·bər }

operation part [COMPUT SCI] That portion of a digital computer instruction which is reserved for the operation code. { ,äp·ə'rā·shən ,pärt }

operation register [COMPUT SCI] A register used to store and decode the operation code for the next instruction to be carried out by a computer. { ,äp·ə'rā·shən ,rej·ə·stər }

operations research [MATH] The mathematical study of systems with input and output from the viewpoint of optimization subject to given constraints. { ,äp·ə'rā·shənz ri,sərch }

operations sequence [CONT SYS] The logical series of procedures that constitute the task for a robot. { ,äp·ə'rā·shənz ,sē·kwəns }

operation time [COMPUT SCI] The time elapsed during the interpretation and execution of an arithmetic or logic operation by a computer. { ,äp·ə'rā·shən ,tīm }

operator [COMPUT SCI] Anything that designates an action to be performed, especially the operation code of a computer instruction. { 'äp·ə ,rād·ər }

operator hierarchy [COMPUT SCI] A sequence of mathematical operators which designates the order in which these operators are to be applied to any mathematical expression in a given programming language. { 'äp·ə,rād·ər 'hī·ər,är·kē }

operator interrupt [COMPUT SCI] A step whereby control is passed to the monitor, and a message, usually requiring a typed answer, is printed on the console typewriter. { 'äp·ə,rād·ər 'in·tə,rəpt }

operator's console [COMPUT SCI] Equipment which provides for manual intervention and monitoring computer operation. { 'äp·ə,rād·ərz 'kän,sōl }

operator subgoaling [COMPUT SCI] A computer problem-solving method in which the inability of the computer to take the desired next step at any point in the problem-solving process leads to a subgoal of making that step feasible. { 'äp·ə ,rād·ər ,səb'gōl·iŋ }

optical amplifier [ENG] An optoelectronic amplifier in which the electric input signal is converted to light, amplified as light, then converted back to an electric signal for the output. { 'äp·tə·kəl 'am·plə,fī·ər }

optical bar-code reader [COMPUT SCI] A device which uses any of various photoelectric methods to read information which has been coded by placing marks in prescribed boxes on documents with ink, pencil, or other means. { 'äp·tə·kəl 'bär ,kōd ,rēd·ər }

optical character recognition [COMPUT SCI] That branch of character recognition concerned with the automatic identification of handwritten or printed characters by any of various photoelectric methods. Abbreviated OCR. Also known as electrooptical character recognition. { 'äp·tə·kəl 'kar·ik·tər ˌrek·ig,nish·ən }

optical communication [COMMUN] The use of electromagnetic waves in the region of the spectrum near visible light for the transmission of signals representing speech, pictures, data pulses, or other information, usually in the form of a laser beam modulated by the information signal. { 'äp·tə·kəl kəˌmyü·nə'kā·shən }

optical computer [COMPUT SCI] A computer that uses various combinations of holography, lasers, and mass-storage memories for such applications as ultra-high-speed signal processing, image deblurring, and character recognition. { 'äp·tə·kəl kəm'pyüd·ər }

optical coupler *See* optoisolator. { 'äp·tə·kəl 'kəp·lər }

optical coupling [ELECTR] Coupling between two circuits by means of a light beam or light pipe having transducers at opposite ends, to isolate the circuits electrically. { 'äp·tə·kəl 'kəp·liŋ }

optical data storage [COMPUT SCI] The technology of placing information in a medium so that, when a light beam scans the medium, the reflected light can be used to recover the information. { ˈäp·tə·kəl 'dad·ə ˌstór·ij }

optical disk [COMPUT SCI] A type of video disk storage device consisting of a pressed disk with a spiral groove at the bottom of which are submicrometer-sized depressions that are sensed by a laser beam. { 'äp·tə·kəl 'disk }

optical disk storage [COMPUT SCI] A computer storage technology in which information is stored in submicrometer-sized holes on a rotating disk, and is recorded and read by laser beams focused on the disk. Also known as laser disk storage; video disk storage. { 'äp·tə·kəl ˌdisk 'stór·ij }

optical electronic reproducer *See* optical sound head. { 'äp·tə·kəl iˌlek'trän·ik ˌrē·prə'dü·sər }

optical encoder [ELECTR] An encoder that converts positional information into corresponding digital data by interrupting light beams directed on photoelectric devices. { 'äp·tə·kəl in'kōd·ər }

optical fiber [OPTICS] A long, thin thread of fused silica, or other transparent substance, used to transmit light. Also known as light guide. { 'äp·tə·kəl 'fī·bər }

optical-fiber amplifier [COMMUN] A device for amplifying signals transmitted over optical fibers, consisting of a low-loss single-mode fiber made of basic silica glass, along whose length gain is generated by coupling pump light at either or both fiber ends, or at periodic locations in between. { ˌäp·tə·kəl ˌfī·bər 'am·pləˌfī·ər }

optical-fiber cable *See* optical waveguide. { 'äp·tə·kəl ˌfī·bər 'kā·bəl }

optical-fiber sensor [ENG] An instrument in which the physical quantity to be measured is made to modulate the intensity, spectrum, phase, or polarization of light from a light-emitting diode or laser diode traveling through an optical fiber; the modulated light is detected by a photodiode. Also known as fiber-optic sensor. { 'äp·tə·kəl ˌfī·bər 'sen·sər }

optical filter *See* filter. { 'äp·tə·kəl 'fil·tər }

optical information processor *See* optical information system. { 'äp·tə·kəl ˌin·fər'mā·shən ˌprä ˌses·ər }

optical information system [COMPUT SCI] A device that uses light to process information; consists of one or several light sources, a one- or two-dimensional plane of data such as a film transparency, lens, or other optical component, and a detector. Also known as optical information processor. { 'äp·tə·kəl ˌin·fər'mā·shən ˌsis·təm }

optical isolator *See* optoisolator. { 'äp·tə·kəl 'ī·səˌlād·ər }

optical lithography [ELECTR] Lithography in which an integrated circuit pattern is first created on a glass plate or mask and is then transferred to the resist by one of a number of optical techniques by using visible or ultraviolet light. { 'äp·tə·kəl li'thäg·rə·fē }

optically coupled isolator *See* optoisolator. { 'äp·tə·klē ˌkup·əld 'ī·səˌlād·ər }

optical mark reading [COMPUT SCI] Optically sensing information encoded as a series of marks, such as lines or filled-in boxes on a test answer sheet, or some special pattern, such as the Universal Product Code. Abbreviated OMR. { 'äp·tə·kəl ˌmärk ˌrēd·iŋ }

optical mask [ELECTR] A thin sheet of metal or other substance containing an open pattern, used to suitably expose to light a photoresistive substance overlaid on a semiconductor or other surface to form an integrated circuit. { 'äp·tə·kəl 'mask }

optical memory [COMPUT SCI] A computer memory that uses optical techniques which generally involve an addressable laser beam, a storage medium which responds to the beam for writing and sometimes for erasing, and a detector which reacts to the altered character of the medium when it uses the beam to read out stored data. { 'äp·tə·kəl 'mem·rē }

optical microphone [ENG ACOUS] A microphone in which the motion of a membrane is detected using a light beam reflected from it, either with the aid of an interferometer or by detecting the deflection of the beam. { ˌäp·tə·kəl 'mī·krəˌfōn }

optical modulator [COMMUN] A device used for impressing information on a light beam. { 'äp·tə·kəl 'mäj·əˌlād·ər }

optical mouse [COMPUT SCI] A mouse that emits a light signal and uses its reflection from a reflective grid to determine position and movement. { 'äp·tə·kəl 'maùs }

optical processing [COMPUT SCI] The use of light, including visible and infrared, to handle data-processing information. { 'äp·tə·kəl 'präˌses·iŋ }

optical proximity sensor [ENG] A device that uses the principle of triangulation of reflected infrared or visible light to measure small distances in a robotic system. { 'äp·tə·kəl präk 'sim·əd·ē ˌsen·sər }

optical reader [COMPUT SCI] A computer data-entry machine that converts printed characters, bar or line codes, and pencil-shaded areas into a computer-input code format. { 'äp·tə·kəl 'rēd·ər }

optical relay [ELECTR] An optoisolator in which the output device is a light-sensitive switch that provides the same on and off operations as the contacts of a relay. { 'äp·tə·kəl 'rē,lā }

optical scanner *See* flying-spot scanner. { 'äp·tə·kəl 'skan·ər }

optical sound head [ELECTR] The assembly in motion picture projection which reproduces photographically recorded sound; light from an incandescent lamp is focused on a slit, light from the slit is in turn focused on the optical sound track of a film, and the light passing through the film is detected by a photoelectric cell. Also known as optical electronic reproducer. { 'äp·tə·kəl 'saund ,hed }

optical sound recorder *See* photographic sound recorder. { 'äp·tə·kəl 'saund ri,kȯrd·ər }

optical sound reproducer *See* photographic sound reproducer. { 'äp·tə·kəl 'saund ,rē·prə 'dü·sər }

optical storage [COMPUT SCI] Storage of large amounts of data in permanent form on photographic film or its equivalent, for nondestructive readout by means of a light source and photodetector. { 'äp·tə·kəl 'stȯr·ij }

optical tape storage [COMMUN] A data storage technology in which information is stored on a tape that is wound on a spool and has a large number of parallel channels, and information is retrieved by sensing the reflected light when a light beam scans the medium. { ¦äp·tə·kəl 'tāp ,stȯr·ij }

optical type font [COMPUT SCI] A special type font whose characters are designed to be easily read by both people and optical character recognition machines. { 'äp·tə·kəl ¦tīp ,fänt }

optical waveguide [ELECTROMAG] A waveguide in which a light-transmitting material such as a glass or plastic fiber is used for transmitting information from point to point at wavelengths somewhere in the ultraviolet, visible-light, or infrared portions of the spectrum. Also known as fiber waveguide; optical-fiber cable. { 'äp·tə·kəl 'wāv,gīd }

optimal control theory [CONT SYS] An extension of the calculus of variations for dynamic systems with one independent variable, usually time, in which control (input) variables are determined to maximize (or minimize) some measure of the performance (output) of a system while satisfying specified constraints. { 'äp·tə·məl kən'trōl ,thē·ə·rē }

optimal feedback control [CONT SYS] A subfield of optimal control theory in which the control variables are determined as functions of the current state of the system. { 'äp·tə·məl 'fēd ,bak kən,trōl }

optimal programming [CONT SYS] A subfield of optimal control theory in which the control variables are determined as functions of time for a specified initial state of the system. { 'äp·tə·məl 'prō,gram·iŋ }

optimal regulator problem *See* linear regulator problem. { 'äp·tə·məl 'reg·yə,lād·ər ,präb·ləm }

optimal smoother [CONT SYS] An optimal filer algorithm which generates the best estimate of a dynamical variable at a certain time based on all available data, both past and future. { 'äp·tə·məl 'smüth·ər }

optimization [SYS ENG] **1.** Broadly, the efforts and processes of making a decision, a design, or a system as perfect, effective, or functional as possible. **2.** Narrowly, the specific methodology, techniques, and procedures used to decide on the one specific solution in a defined set of possible alternatives that will best satisfy a selected criterion. Also known as system optimization. { ,äp·tə·mə'zā·shən }

optimize [COMPUT SCI] To rearrange the instructions or data in storage so that a minimum number of time-consuming jumps or transfers are required in the running of a program. { 'äp·tə,mīz }

optimized code [COMPUT SCI] A machine-language program that has been revised to remove inefficiencies and unused or unnecessary instructions so that the program is executed more quickly and occupies less storage space. { 'äp·tə,mīzd 'kōd }

optimizer [COMPUT SCI] A utility program that processes machine-language programs and generates optimized code. { 'äp·tə,mīz·ər }

optimum array current [ELECTROMAG] The current distribution in a broadside antenna array which is such that for a specified side-lobe level the beam width is as narrow as possible, and for a specified first null the side-lobe level is as small as possible. { 'äp·tə·məm ə'rā ,kə·rənt }

optimum bunching [ELECTR] Bunching condition required for maximum output in a velocity modulation tube. { 'äp·tə·məm 'bənch·iŋ }

optimum code [COMPUT SCI] A computer code which is particularly efficient with regard to a particular aspect; for example, minimum time of execution, minimum or efficient use of storage space, and minimum coding time. { 'äp·tə·məm 'kōd }

optimum coupling *See* critical coupling. { 'äp·tə·məm 'kəp·liŋ }

optimum filter [ELECTR] An electric filter in which the mean square value of the error between a desired output and the actual output is at a minimum. { 'äp·tə·məm 'fil·tər }

optimum programming [COMPUT SCI] Production of computer programs that maximize efficiency with respect to some criteria such as least cost, least use of storage, least time, or least use of time-sharing peripheral equipment. { 'äp·tə·məm 'prō,gram·iŋ }

optimum traffic frequency *See* optimum working frequency. { 'äp·tə·məm 'traf·ik ,frē·kwən·sē }

optimum working frequency [COMMUN] The most effective frequency at a specified time for ionospheric propagation of radio waves between two specified points. Also known as frequency

optimum traffic; optimum traffic frequency. { 'äp·tə·məm 'wərk·iŋ ˌfrē·kwən·sē }

optional halt instruction [COMPUT SCI] A halt instruction that can cause a computer program to stop either before or after the instruction is obeyed if certain criteria are met. Also known as optional stop instruction. { 'äp·shən·əl 'hȯlt in ˌstrək·shən }

optional product [COMPUT SCI] Any of various forms of documentation that may be made available with a software product, such as source code, manuals, and instructions. { 'äp·shən·əl 'präd·əkt }

optional stop instruction *See* optional halt instruction. { 'äp·shən·əl 'stäp inˌstrək·shən }

option switch [COMPUT SCI] **1.** A DIP switch or jumper that activates an optional feature. **2.** A software parameter that overrides a default value and thereby activates an optional feature. Also known as option toggle. { 'äp·shən ˌswich }

option toggle *See* option switch. { 'äp·shən ˌtäg·əl }

optoacoustic modulator *See* acoustooptic modulator. { ˌäp·tō·əˌkü̇s·tik 'mäj·əˌlād·ər }

optocoupler *See* optoisolator. { ˌäp·tō'kəp·lər }

optoelectronic amplifier [ENG] An amplifier in which the input and output signals and the method of amplification may be either electronic or optical. { ˌäp·tō·iˌlek'trän·ik 'am·pləˌfī·ər }

optoelectronic integration [ELECTR] A technology that combines optical components with electronic components such as transistors on a single wafer to obtain highly functional circuits. { ˌäp·tō,i·lekˌträn·ik ˌin·tə'grā·shən }

optoelectronic isolator *See* optoisolator. { ˌäp·tō·iˌlek'trän·ik 'ī·səˌlād·ər }

optoelectronics [ELECTR] **1.** The branch of electronics that deals with solid-state and other electronic devices for generating, modulating, transmitting, and sensing electromagnetic radiation in the ultraviolet, visible-light, and infrared portions of the spectrum. **2.** *See* photonics. { ˌäp·tō·iˌlek'trän·iks }

optoelectronic scanner [ELECTR] A scanner in which lenses, mirrors, or other optical devices are used between a light source or image and a photodiode or other photoelectric device. { ˌäp·tō·iˌlek'trän·ik 'skan·ər }

optoisolator [ELECTR] A coupling device in which a light-emitting diode, energized by the input signal, is optically coupled to a photodetector such as a light-sensitive output diode, transistor, or silicon controlled rectifier. Also known as optical coupler; optical isolator; optically coupled isolator; optocoupler; optoelectronic isolator; photocoupler; photoisolator. { ˌäp·tō'ī·səˌlād·ər }

optophone [ENG ACOUS] A device with a photoelectric cell to convert ordinary printed letters into a series of sounds; used by the blind. { 'äp·təˌfōn }

or [COMPUT SCI] An instruction which performs the logical operation "or" on a bit-by-bit basis for its two or more operand words, usually storing the result in one of the operand locations. Also known as OR function. { ȯr }

ORB *See* object request broker. { ȯrb *or* ˌōˌärˌbē }

ORB core [COMPUT SCI] The part of an object request broker that is responsible for the communication of requests. { 'ȯrb ˌkȯr *or* ˌōˌärˌbē ˌkȯr }

orbitron [ELECTR] A maser that uses synthetic atoms composed of free electrons orbiting long, thin, positively charged, metal wires. { 'ȯr·bəˌträn }

OR circuit *See* OR gate. { 'ȯr ˌsər·kət }

ordered array [COMPUT SCI] A set of data elements that has been arranged in rows and columns in a specified order so that each element can be individually accessed. { 'ȯrd·ərd ə'rā }

ordered list [COMPUT SCI] A set of data items that has been arranged in a specified sequence to aid in processing its contents. { 'ȯrd·ərd 'list }

orderly shutdown [COMPUT SCI] The procedures for shutting off a computer system in an organized manner, normally after all work in progress has been completed, permitting restarting of the systems without loss of transactions or data. { 'ȯrd·ər·lē 'shətˌdau̇n }

order tone [COMMUN] Tone sent over a trunk to indicate that the trunk is ready to receive an order or, to the receiving operator, that an order is about to arrive. { 'ȯrd·ərˌtōn }

ordinal type [COMPUT SCI] A data type whose possible values are sequential in the manner of the integers 1, 2, 3, and so forth; for example, the months January, February, and so forth. { 'ȯrd·nəl 'tīp }

OR function *See* or. { 'ȯr ˌfəŋk·shən }

organic electrolyte cell [ELEC] A type of wet cell that is based on the use of particularly reactive metals such as lithium, calcium, or magnesium in conjunction with organic electrolytes; the best-known type is the lithium-cupric fluoride cell. { ȯr'gan·ik i'lek·trəˌlīt ˌsel }

OR gate [ELECTR] A multiple-input gate circuit whose output is energized when any one or more of the inputs is in a prescribed state; performs the function of the logical inclusive-or; used in digital computers. Also known as OR circuit. { 'ȯr ˌgāt }

orient [COMPUT SCI] To change relative and symbolic addresses to absolute form. { 'ȯr·ē·ənt }

orientation [ELECTROMAG] The physical positioning of a directional antenna or other device having directional characteristics. { ˌȯr·ē·ən'tā·shən }

orientation effect [ELEC] Those bulk properties of a material which result from orientation polarization. { ˌȯr·ē·ən'tā·shən iˌfekt }

orientation polarization [ELEC] Polarization arising from the orientation of molecules which have permanent dipole moments arising from an asymmetric charge distribution. Also known as dipole polarization. { ˌȯr·ē·ənˈtā·shən ˌpō·lə·rə ˌzā·shən }

orifice [ELECTROMAG] Opening or window in a side or end wall of a waveguide or cavity resonator through which energy is transmitted. { 'ȯr·ə·fəs }

origin [COMPUT SCI] Absolute storage address in relative coding to which addresses in a region are referenced. { 'ər·ə·jən }

original document *See* source document. { ə'rij·ən·əl 'däk·yə·mənt }

original equipment manufacturer *See* OEM. { ə,rij·ə·nəl ˌkwip·mənt man·yə'fak·chər·ər }

orthicon [ELECTR] A camera tube in which a beam of low-velocity electrons scans a photoemissive mosaic that is capable of storing a pattern of electric charges; has higher sensitivity than the iconoscope. { 'ȯr·thəˌkän }

orthogonal [COMPUT SCI] **1.** An area of a computer display in which units of distance are the same horizontally and vertically so that there is no distortion. **2.** A viewing area in which positions are determined by using a cartesian coordinate system with horizontal and vertical axes. { ȯr'thäg·ən·əl }

orthogonal antennas [ELECTROMAG] In radar, a pair of transmitting and receiving antennas, or a single transmitting-receiving antenna, designed for the detection of a difference in polarization between the transmitted energy and the energy returned from the target. { ȯr'thäg·ən·əl an'ten·əz }

orthogonal parity check [COMPUT SCI] A parity checking system involving both a lateral and a longitudinal parity check. { ȯr'thäg·ən·əl 'par·əd·ē ˌchek }

orthotronic error control [COMPUT SCI] An error check carried out to ensure correct transmission, which uses lateral and longitudinal parity checks. { ˌȯr·thə¦trän·ik 'er·ər kənˌtrōl }

O-scan *See* O-display. { 'ō ˌskan }

osciducer [ELECTR] Transducer in which information pertaining to the stimulus is provided in the form of deviation from the center frequency of an oscillator. { ¦äs·ə¦dü·sər }

oscillation *See* cycling. { ˌäs·ə'lā·shən }

oscillator [ELECTR] **1.** An electronic circuit that converts energy from a direct-current source to a periodically varying electric output. **2.** The stage of a superheterodyne receiver that generates a radio-frequency signal of the correct frequency to mix with the incoming signal and produce the intermediate-frequency value of the receiver. **3.** The stage of a transmitter that generates the carrier frequency of the station or some fraction of the carrier frequency. { 'äs·əˌlād·ər }

oscillator harmonic interference [ELECTR] Interference occurring in a superheterodyne receiver due to the interaction of incoming signals with harmonics (usually the second harmonic) of the local oscillator. { 'äs·əˌlād·ər här'män·ik ˌin·tər'fir·əns }

oscillator-mixer-first detector *See* converter. { 'äs·əˌlād·ər 'mik·sər ˌfərst di'tek·tər }

oscillatory circuit [ELEC] Circuit containing inductance or capacitance, or both, and resistance, connected so that a voltage impulse will produce an output current which periodically reverses or oscillates. { 'äs·ə·ləˌtȯr·ē 'sər·kət }

oscillatory discharge [ELEC] Alternating current of gradually decreasing amplitude which, under certain conditions, flows through a circuit containing inductance, capacitance, and resistance when a voltage is applied. { 'äs·ə·ləˌtȯr·ē 'dis ˌchärj }

oscillatory surge [ELEC] Surge which includes both positive and negative polarity values. { 'äs·ə·ləˌtȯr·ē 'sərj }

oscillistor [ELECTR] A bar of semiconductor material, such as germanium, that will oscillate much like a quartz crystal when it is placed in a magnetic field and is carrying direct current that flows parallel to the magnetic field. { ¦äs·ə'lis·tər }

oscillograph tube [ELECTR] Cathode-ray tube used to produce a visible pattern, which is the graphical representation of electric signals, by variations of the position of the focused spot or spots according to these signals. { ə'sil·əˌgraf ˌtüb }

oscilloscope *See* cathode-ray oscilloscope. { ə'sil·əˌskōp }

O-scope *See* O-display. { 'ō ˌskōp }

OTH radar *See* over-the-horizon radar. { ō¦tē¦āch 'rāˌdär }

OTS *See* ovonic threshold switch.

O-type backward-wave oscillator [ELECTR] A backward-wave tube in which an electron gun produces an electron beam focused longitudinally throughout the length of the tube, a slow-wave circuit interacts with the beam, and at the end of the tube a collector terminates the beam. Also known as O-type carcinotron; type-O carcinotron. { 'ō ˌtīp 'bak·wərd ¦wāv 'äs·əˌlad·ər }

O-type carcinotron *See* O-type backward-wave oscillator. { 'ō ¦tīp kär'sin·əˌträn }

outage [ELEC] A failure in an electric power system. { 'aud·ij }

outgoing trunk *See* one-way trunk. { 'aůtˌgō·iŋ 'trəŋk }

outlet [ELEC] A power line termination from which electric power can be obtained by inserting the plug of a line cord. Also known as convenience receptacle; electric outlet; receptacle. { 'aůtˌlet }

outlet box [ELEC] A box at which lines in an electric wiring system terminate, so that electric appliances or fixtures may be connected. { 'aůtˌlet ˌbäks }

outline processor [COMPUT SCI] A software system that organizes notes in ordinary English into an outline that serves as the basis for a document. { 'aůtˌlīn ˌprāˌses·ər }

out-of-line coding [COMPUT SCI] Instructions in a routine that are stored in a different part of computer storage from the rest of the instructions. { 'aůt əv ¦līn 'kōd·iŋ }

out-of-service jack [ELEC] Jack associated with a test jack which removes the circuit from service when a shorted plug is inserted. { 'aůt əv ¦sər·vəs 'jak }

out-plant system [COMPUT SCI] A data-processing system that has one or more remote terminals

from which information is transmitted to a central computer. { 'aůt ˌplant ˌsis·təm }

output [COMPUT SCI] **1.** The data produced by a data-processing operation, or the information that is the objective or goal in data processing. **2.** The data actively transmitted from within the computer to an external device, or onto a permanent recording medium (paper, microfilm). **3.** The activity of transmitting the generated information. **4.** The readable storage medium upon which generated data are written, as in hard-copy output. [ELECTR] **1.** The current, voltage, power, driving force, or information which a circuit or device delivers. **2.** Terminals or other places where a circuit or device can deliver current, voltage, power, driving force, or information. { 'aůtˌpůt }

output area [COMPUT SCI] A part of storage that has been reserved for output data. Also known as output block. { 'aůtˌpůt ˌer·ē·ə }

output block [COMPUT SCI] **1.** A portion of the internal storage of a computer that is reserved for receiving, processing, and transmitting data to be transferred out. **2.** *See* output area. { 'aůtˌpůt ˌbläk }

output-bound computer [COMPUT SCI] A computer that is slowed down by its output functions. { 'aůtˌpůt ˌbaůnd kəmˌpyůd·ər }

output bus driver [ELECTR] A device that power-amplifies output signals from a computer to allow them to drive heavy circuit loads. { 'aůt ˌpůt 'bəs ˌdrīv·ər }

output capacitance [ELECTR] Of an *n*-terminal electron tube, the short-circuit transfer capacitance between the output terminal and all other terminals, except the input terminal, connected together. { 'aůtˌpůt kəˌpas·əd·əns }

output class [COMPUT SCI] An indicator of the priority of output from a computer that determines the order in which it is printed from a spool file. { 'aůtˌpůt ˌklas }

output device *See* output unit. { 'aůtˌpůt diˌvīs }

output gap [ELECTR] An interaction gap by means of which usable power can be abstracted from an electron stream in a microwave tube. { 'aůtˌpůt ˌgap }

output impedance [ELECTR] The impedance presented by a source to a load. { 'aůtˌpůt im ˌpēd·əns }

output indicator [ENG] A meter or other device that is connected to a radio receiver to indicate variations in output signal strength for alignment and other purposes, without indicating the exact value of output. { 'aůtˌpůt ˌin·dəˌkād·ər }

output link [COMMUN] The last link in a communications chain. { 'aůtˌpůt ˌliŋk }

output meter [ENG] An alternating-current voltmeter connected to the output of a receiver or amplifier to measure output signal strength in volume units or decibels. { 'aůtˌpůt ˌmēd·ər }

output-meter adapter [ENG] Device that can be slipped over the plate prong of the output tube of a radio receiver to provide a conventional terminal to which an output meter can be connected during alignment. { 'aůtˌpůt ˌmēd·ər əˌdap·tər }

output monitor interrupt [COMPUT SCI] A data-processing step in which control is passed to the monitor to determine the precedence order for two requests having the same priority level. { 'aůtˌpůt ˌman·əd·ər 'int·əˌrəpt }

output power [ELEC] Power delivered by a system or transducer to its load. { 'aůtˌpůt ˌpaů·ər }

output program *See* output routine. { 'aůtˌpůt ˌprōˌgram }

output rating *See* carrier power output rating. { 'aůtˌpůt ˌrād·iŋ }

output record [COMPUT SCI] **1.** A unit of data that has been transcribed from a computer to an external medium or device. **2.** The unit of data that is currently held in the output area of a computer before being transcribed to an external medium or device. { 'aůtˌpůt ˌrek·ərd }

output resistance [ELECTR] The resistance across the output terminals of a circuit or device. { 'aůtˌpůt riˌzis·təns }

output routine [COMPUT SCI] A series of computer instructions which organizes and directs all operations associated with the transcription of data from a computer to various media and external devices by various types of output equipment. Also known as output program. { 'aůtˌpůt rüˌtēn }

output stage [ELECTR] The final stage in any electronic equipment. { 'aůtˌpůt ˌstāj }

output transformer [ELECTR] The iron-core audio-frequency transformer used to match the output stage of a radio receiver or an amplifier to its loudspeaker or other load. { 'aůtˌpůt tranzˌfȯr·mər }

output tube [ELECTR] Power-amplifier tube designed for use in an output stage. { 'aůtˌpůt ˌtůb }

output unit [COMPUT SCI] In computers, a unit which delivers information from the computer to an external device or from internal storage to external storage. { 'aůtˌpůt ˌyü·nət }

output word [COMPUT SCI] Any running word into which an input word is to be translated. { 'aůtˌpůt ˌwərd }

outside extension [COMMUN] Telephone extension on premises separated from the main station. { 'aůtˌsīd ik'sten·chən }

overall response [ELECTR] The ratio between system input and output. { ¦ō·vərˈȯl ri'spas }

overbunching [ELECTR] In velocity-modulated streams of electrons, the bunching condition produced by the continuation of the bunching process beyond the optimum condition. { ¦ō·vərˈbənch·iŋ }

overcompound [ELEC] To use sufficiently many series turns in a compound-wound generator so that the terminal voltage at rated load is greater than at no load, usually to compensate for increased line drop. { ¦ō·vərˈkämˌpaůnd }

overcoupled circuits [ELECTR] Two resonant circuits which are tuned to the same frequency but coupled so closely that two response peaks are obtained; used to attain broad-band response with substantially uniform impedance. { 'ō·vər ˌkəp·əld 'sər·kəts }

overcurrent [ELECTR] An abnormally high current, usually resulting from a short circuit. { ¦ō·vər¦kə·rənt }

overcurrent protection See overload protection. { ¦ō·vər¦kə·rənt prə'tek·shən }

overdriven amplifier [ELECTR] Amplifier stage which is designed to distort the input-signal waveform by permitting the grid signal to drive the stage beyond cutoff or plate-current saturation. { ¦ō·vər¦driv·ən 'am·plə¸fī·ər }

overflow [COMPUT SCI] **1.** The condition that arises when the result of an arithmetic operation exeeds the storage capacity of the indicated result-holding storage. **2.** That part of the result which exceeds the storage capacity. { 'ō·vər¸flō }

overflow bucket [COMPUT SCI] A unit of storage in a direct-access storage device used to hold an overflow record. { 'ō·vər¸flō ¸bək·ət }

overflow check indicator See overflow indicator. { 'ō·vər¸flō 'chek ¸in·də¸kād·ər }

overflow error [COMPUT SCI] The condition in which the numerical result of an operation exceeds the capacity of the register. { 'ō·vər¸flō 'er·ər }

overflow indicator [COMPUT SCI] A bistable device which changes state when an overflow occurs in the register associated with it, and which is designed so that its condition can be determined, and its original condition restored. Also known as overflow check indicator. { 'ō·vər¸flō ¸in·də ¸kād·ər }

overflow record [COMPUT SCI] A unit of data whose length is too great for it to be stored in an assigned section of a direct-access storage, and which must be stored in another area from which it may be retrieved by means of a reference stored in the original assigned area in place of the record. { 'ō·vər¸flō ¸rek·ərd }

overflow storage [COMMUN] Additional storage provided in a store-and-forward-switching center to prevent the loss of messages (or parts of messages) offered to the switching center when it is fulfilled. [COMPUT SCI] Extra storage capacity in a computer or calculator that allows a small amount of overflow. { 'ō·vər¸flō ¸stȯr·ij }

overhead [COMPUT SCI] The time a computer system spends doing computations that do not contribute directly to the progress of any user tasks in the system, such as allocation of resources, responding to exceptional conditions, providing protection and reliability, and accounting. { 'ō·vər¸hed }

overlap [COMMUN] **1.** In teletypewriter practice, the selecting of another code group while the printing of a previously selected code group is taking place. **2.** Amount by which the effective height of the scanning facsimile spot exceeds the nominal width of the scanning line. [COMPUT SCI] To perform some or all of an operation concurrently with one or more other operations. { 'ō·vər¸lap }

overlapped memories [COMPUT SCI] An arrangement of computer memory banks in which, to cut down access time, successive words are taken from different memory banks, rewriting in one bank being overlapped by logic operations in another bank, with memory access in still another bank. { 'ō·vər¸lapt 'mem·rēz }

overlapping [COMPUT SCI] An operation whereby, if the processor determines that the current instruction and the next instruction lie in different storage modules, the two words may be retrieved in parallel. { ¦ō·vər¦lap·iŋ }

overlapping input/output [COMPUT SCI] A procedure in which a computer system works on several programs, suspending work on a program and moving to another when it encounters an instruction for input/output operation, which is then executed when input/output operations from other programs have been carried out. { 'ō·vər¦lap·iŋ 'in¸půt 'aůt¸půt }

overlap radar [ENG] Radar located in one sector whose area of useful radar coverage includes a portion of another sector. { 'ō·vər¸lap 'rā¸där }

overlay [COMPUT SCI] A technique for bringing routines into high-speed storage from some other form of storage during processing, so that several routines will occupy the same storage locations at different times; overlay is used when the total storage requirements for instructions exceed the available main storage. { 'ō·vər¸lā }

overlay transistor [ELECTR] Transistor containing a large number of emitters connected in parallel to provide maximum power amplification at extremely high frequencies. { 'ō·vər¸lā tran'zis·tər }

overload [ELECTR] A load greater than that which a device is designed to handle; may cause overheating of power-handling components and distortion in signal circuits. { 'ō·vər¸lōd }

overload capacity [ELEC] Current, voltage, or power level beyond which permanent damage occurs to the device considered. { 'ō·vər¸lōd kə ¸pas·əd·ē }

overload current [ELECTR] A current greater than that which a circuit is designed to carry; may melt wires or damage elements of the circuit. { 'ō·vər ¸lōd ¸kə·rənt }

overloading [COMPUT SCI] The use, in some advanced programming languages, of two or more variables or subroutines with the same name; the compiler determines by inference which entity is referred to each time the name occurs. { ¦ō·vər ¦lōd·iŋ }

overload level [ELEC] Level above which operation ceases to be satisfactory as a result of signal distortion, overheating, damage, and so forth. { 'ō·vər¸lōd ¸lev·əl }

overload protection [ELEC] Effect of a device operative on excessive current, but not necessarily on short circuit, to cause and maintain the interruption of current flow to the device governed. Also known as overcurrent protection. { 'ō·vər¸lōd prə¸tek·shən }

overload relay [ELEC] A relay that opens a circuit when the load in the circuit exceeds a preset value, in order to provide overload protection; usually responds to excessive current, but may respond to excessive values of power, temperature, or other quantities. Also known as overload release. { 'ō·vər¸lōd ¸rē¸lā }

overload release *See* overload relay. { 'ō·vər,lōd ri,lēs }

overmodulation [COMMUN] Amplitude modulation greater than 100%, causing distortion because the carrier voltage is reduced to zero during portions of each cycle. { ¦ō·vər,mäj·ə'lā·shən }

overpotential *See* overvoltage. { ¦ō·vər·pə'ten·chəl }

override [CONT SYS] To cancel the influence of an automatic control by means of a manual control. { 'ō·və,rīd }

overriding process control [CONT SYS] Process control in which any one of several controllers associated with one control valve can be made to override another in accordance with a priority requirement of the process. { 'ō·və,rīd·iŋ 'prä·səs kən,trōl }

overrun [COMPUT SCI] The arrival of an amount of data greater than the space allocated to it. { 'ō·və,rən }

overshoot [ELECTROMAG] The reception of microwave signals where they were not intended, due to an unusual atmospheric condition that sets up variations in the index of refraction. { 'ō·vər,shüt }

over-the-horizon propagation *See* scatter propagation. { 'ō·vər thə hə'rīz·ən ,präp·ə'gā·shən }

over-the-horizon radar [ELECTROMAG] Radar operating in such a way that targets otherwise shielded from view by earth's curvature are detected, the use of carrier frequencies at which the ionosphere is particularly reflective, so that radar signals are reflected back to the surface at great ranges, or use of signal characteristics exploiting surface-coupled propagation are example techniques. Abbreviated OTH radar. { 'ō·vər thə hə'rīz·ən 'rā,där }

overthrow distortion [COMMUN] Distortion caused when the maximum amplitude of the signal wavefront exceeds the steady state of amplitude of the signal wave. { 'ō·vər,thrō di ,stȯr·shən }

overtone crystal [ELECTR] Quartz crystal cut in such a manner that it will operate at a higher order than its fundamental frequency, or operate at two frequencies simultaneously as in a synthesizer. { 'ō·vər,tōn ,krist·əl }

overvoltage [ELEC] A voltage greater than that at which a device or circuit is designed to operate. Also known as overpotential. [ELECTR] The amount by which the applied voltage exceeds the Geiger threshold in a radiation counter tube. { ¦ō·vər¦vōl·tij }

overvoltage crowbar [ELEC] A circuit that monitors the output of a power supply and prevents the output voltage from exceeding a preset voltage, under any failure condition, by having a low resistance (crowbar) placed across the output terminals when an overvoltage occurs. { ¦ō·vər ¦vōl·tij 'krō,bär }

overwrite [COMPUT SCI] To enter information into a storage location and destroy the information previously held there. { ¦ō·vər¦rīt }

ovonic device *See* glass switch. { ō'vän·ik di,vīs }

ovonic memory switch [ELECTR] A glass switch which, after being brought from the highly resistive state to the conducting state, remains in the conducting state until a current pulse returns it to its highly resistive state. Abbreviated OMS. Also known as memory switch. { ō'vän·ik 'mem·rē ,swich }

ovonic threshold switch [ELECTR] A glass switch which, after being brought from the highly resistive state to the conducting state, returns to the highly resistive state when the current falls below a holding current value. Abbreviated OTS. { ō'vän·ik 'thresh,hōld ,swich }

Ovshinsky effect [ELECTR] The characteristic of a special thin-film solid-state switch that responds identically to both positive and negative polarities so that current can be made to flow in both directions equally. { ōv'shin·skē i,fekt }

Owen bridge [ELECTR] A four-arm alternating-current bridge used to measure self-inductance in terms of capacitance and resistance; bridge balance is independent of frequency. { 'ō·wən ,brij }

own coding [COMPUT SCI] A series of instructions added to a standard software routine to change or extend the routine so that it can carry out special tasks. { 'ōn 'kōd·iŋ }

owned program *See* proprietary program. { 'ōnd 'prō,gram }

oxide-coated cathode [ELECTR] A cathode that has been coated with oxides of alkaline-earth metals to improve electron emission at moderate temperatures. Also known as Wehnelt cathode. { 'äk,sīd ,kōd·əd 'kath,ōd }

oxide isolation [ELECTR] Isolation of the elements of an integrated circuit by forming a layer of silicon oxide around each element. { 'äk,sīd ,ī·sə'lā·shən }

oxide passivation [ELECTR] Passivation of a semiconductor surface by producing a layer of an insulating oxide on the surface. { 'äk,sīd ,pas·ə·vā·shən }

P

pA *See* picoampere.

PABX *See* private automatic branch exchange.

PAC *See* perceptual audio coding.

pack [COMPUT SCI] To reduce the amount of storage required to hold information by changing the method of encoding the data. { pak }

package [COMPUT SCI] A program that is written for a general and widely used application in such a way that its usefulness is not impaired by the problems of data or organization of a particular user. { pak·ij }

packaged circuit *See* rescap. { 'pak·ijd ˌsər·kət }

packaged magnetron [ELECTR] Integral structure comprising a magnetron, its magnetic circuit, and its output matching device. { 'pak·ijd 'mag·nəˌträn }

packaging [ELEC] The process of physically locating, connecting, and protecting devices or components. { 'pak·ə·jiŋ }

packaging density [ELECTR] The number of components per unit volume in a working system or subsystem. { 'pak·ə·jiŋ ˌden·səd·ē }

packed decimal [COMPUT SCI] A means of representing two digits per character, to reduce space and increase transmission speed. { ˌpakt 'des·məl }

packed file [COMPUT SCI] A file that has been encoded so that it takes up less space in storage. Also known as compressed file. { ˌpakt 'fīl }

packet [COMMUN] A short section of data of fixed length that is transmitted as a unit; consists of a header followed by a number of contiguous bytes from an elementary data stream. { 'pak·ət }

packetized elementary stream [COMMUN] A generic term for a coded bit stream in a digital transport system. In a digital television system, one coded video, coded audio, or other coded elementary stream is carried in a sequence of PES packets with one stream identification code. { 'pak·əˌtīzd ˌel·ə'men·trē 'strēm }

packet switching *See* packet transmission. { 'pak·ət ˌswich·iŋ }

packet transmission [COMMUN] Transmission of standardized packets of data over transmission lines rapidly by networks of high-speed switching computers that have the message packets stored in fast-access core memory. Also known as packet switching. { 'pak·ət tranzˌmish·ən }

packing density [COMPUT SCI] The amount of information per unit of storage medium, as characters per inch on tape, bits per inch or drum, or bits per square inch in photographic storage. [ELECTR] The number of devices or gates per unit area of an integrated circuit. { 'pak·iŋ ˌden·səd·ē }

packing routine [COMPUT SCI] A subprogram which compresses data so as to eliminate blanks and reduce the storage needed for a file. { 'pak·iŋ rüˌtēn }

pad [ELECTR] **1.** An arrangement of fixed resistors used to reduce the strength of a radio-frequency or audio-frequency signal by a desired fixed amount without introducing appreciable distortion. Also known as fixed attenuator. **2.** *See* terminal area. { pad }

padder [ELECTR] A trimmer capacitor inserted in series with the oscillator tuning circuit of a superheterodyne receiver to control calibration at the low-frequency end of a tuning range. { 'pad·ər }

padding [COMPUT SCI] The adding of meaningless data (usually blanks) to a unit of data to bring it up to some fixed size. { 'pad·iŋ }

page [COMPUT SCI] **1.** A standard quantity of main-memory capacity, usually 512 to 4096 bytes or words, used for memory allocation and for partitioning programs into control sections. **2.** A standard quantity of source program coding, usually 8 to 64 lines, used for displaying the coding on a cathode-ray tube. { pāj }

pageable memory [COMPUT SCI] The part of a computer's main storage that is subject to paging in a virtual storage system. { 'pāj·ə·bəl 'mem·rē }

page boundary [COMPUT SCI] The address of the first (lowest) word or byte within a page of memory. { 'pāj ˌbaůn·drē }

page data set [COMPUT SCI] A file for storing images of pages in a virtual storage system, so that they can be returned to main storage for further processing when needed. { 'pāj 'dad·əˌset }

page description language [COMPUT SCI] A high-level language that specifies the format of a page generated by a printer; it is translated into specific codes by any printer that supports the language. Abbreviated PDL. { 'pāj diˌskrip·shənˌlaŋ·gwij }

page fault [COMPUT SCI] An interruption that occurs while a page which is referred to by the program is being read into memory. { 'pāj ˌfólt }

page printer [COMPUT SCI] A computer output device which composes a full page of characters before printing the page. { 'pāj ˌprint·ər }

pager [COMMUN] A receiver in a radio paging system. { 'pāj·ər }

page reader [COMPUT SCI] In character recognition, a character reader capable of processing cut-form documents of varying sizes; sometimes capable of reading information in reel forms. { 'pāj ˌrēd·ər }

page skip [COMPUT SCI] A control character that causes a printer to skip over the remainder of the current page and move to the beginning of the following page. { 'pāj ˌskip }

page table [COMPUT SCI] A key element in the virtual memory technique; a table of addresses where entries are adjusted for easy relocation of pages. { 'pāj ˌtā·bəl }

page turning [COMPUT SCI] **1.** The process of moving entire pages of information between main memory and auxiliary storage, usually to allow several concurrently executing programs to share a main memory of inadequate capacity. **2.** In conversational time-sharing systems, the moving of programs in and out of memory on a round-robin, cyclic schedule so that each program may use its allotted share of computer time. { 'pāj ˌtərn·iŋ }

paging [COMPUT SCI] The scheme used to locate pages, to move them between main storage and auxiliary storage, or to exchange them with pages of the same or other computer programs; used in computers with virtual memories. { 'pāj·iŋ }

paging rate [COMPUT SCI] The number of pages per second moved by virtual storage between main storage and the page data set. { 'pāj·iŋ ˌrāt }

paging system [COMMUN] A system which gives an indication to a particular individual that he or she is wanted at the telephone, such as by sounding a number, calling by name over a loudspeaker, or producing an audible signal in a radio receiver carried in the individual's pocket. { 'pāj·iŋ ˌsis·təm }

paint [COMPUT SCI] To fill an area of a display screen or printed output with a color, shade of gray, or image. [ELECTR] In radar, a colloquial term for an echo signal or its display; sometimes called the "skin paint," as of an aircraft. { pānt }

paint program [COMPUT SCI] A graphics program that maintains images in raster format, allowing the user to simulate painting with the aid of a mouse or a graphics tablet. { 'pānt ˌprō·grəm }

pair [ELEC] Two like conductors employed to form an electric circuit. { per }

paired cable [ELEC] Cable in which the single conductors are twisted together in groups of two, none of which is arranged with others to form quads. { 'perd 'kā·bəl }

paired synchronous detection [ELECTR] The arrangement of two homodyne channels in a radar receiver such that both the phase and the amplitude of a received signal is preserved in the two video signals produced. { ¦perd 'siŋ·krə·nəs di¦tek·shən }

pairing [ELECTR] In television, imperfect interlace of lines composing the two fields of one frame of the picture; instead of having the proper equal spacing, the lines appear in groups of two. { 'per·iŋ }

palette [COMPUT SCI] In computer graphics, the set of colors that can be shown on a display monitor. { 'pal·ət }

Palmer scan [ELECTR] Combination of circular or raster and conical radar scans; the beam is swung around the horizon, and at the same time a conical scan is performed. { 'päm·ər ˌskan }

palmtop *See* hand-held computer. { 'päm,täp }

PAL system *See* phase-alternation line system. { 'pal ˌsis·təm }

PAM *See* pulse-amplitude modulation.

panadapter *See* panoramic adapter. { 'pan·ə ˌdap·tər }

pancake coil [ELEC] A coil having the shape of a pancake, usually with the turns arranged in the form of a flat spiral. { 'panˌkāk ¦kȯil }

panel [COMPUT SCI] The face of the console, which is normally equipped with lights, switches, and buttons to control the machine, correct errors, determine the status of the various CPU (central processing unit) parts, and determine and revise the contents of various locations. Also known as control panel; patch panel. { 'pan·əl }

panel board *See* control board. { 'pan·əl ˌbȯrd }

panel display [ELECTR] An electronic display in which a large orthogonal array of display devices, such as electroluminescent devices or light-emitting diodes, form a flat screen. Also known as flat-panel display. { 'pan·əl di¦splā }

panoramic adapter [ELECTR] A device designed to operate with a search receiver to provide a visual presentation on an oscilloscope screen of a band of frequencies extending above and below the center frequency to which the search receiver is tuned. Also known as panadapter. { ¦pan·ə ¦ram·ik ə'dap·tər }

panoramic display [ELECTR] A display that simultaneously shows the relative amplitudes of all signals received at different frequencies. { ¦pan·ə¦ram·ik di'splā }

panoramic radar [ENG] Nonscanning radar which transmits signals over a wide beam in the direction of interest. { ¦pan·ə¦ram·ik 'rā,där }

panoramic receiver [ELECTR] Radio receiver that permits continuous observation on a cathode-ray-tube screen of the presence and relative strength of all signals within a wide frequency range. { ¦pan·ə¦ram·ik ri'sē·vər }

pan-range [ELECTR] Intensity-modulated, A-type radar indication with a slow vertical sweep applied to video; stationary targets give solid vertical deflection, and moving targets give broken vertical deflection. { 'pan ˌrānj }

pantograph [ENG] A device that sits on the top of an electric locomotive or cars in an electric train and picks up electricity from overhead wires to run the train. { 'pan·tə,graf }

pantography [ENG] System for transmitting and automatically recording radar data from an indicator to a remote point. { pan'täg·rə·fē }

paper capacitor [ELEC] A capacitor whose dielectric material consists of oiled paper sandwiched between two layers of metallic foil. { 'pā·pər kə'pas·əd·ər }

paper-tape Turing machine [COMPUT SCI] A variation of a Turing machine in which a blank square can have a nonblank symbol written on it, but this symbol cannot be changed thereafter. { 'pā·pər ˌtāp 'tür·iŋ mə,shēn }

paper throw [COMPUT SCI] The movement of paper through a computer printer for a purpose other than printing, in which the distance traveled, and usually the speed, is greater than that of a single line spacing. { 'pā·pər ˌthrō }

paraballoon [ELECTROMAG] Air-inflated radar antenna. { ˌpar·ə·bə'lün }

parabolic antenna [ELECTROMAG] Antenna with a radiating element and a parabolic reflector that concentrates the radiated power into a beam. { ˌpar·əˌbäl·ik an'ten·ə }

parabolic microphone [ENG ACOUS] A microphone used at the focal point of a parabolic sound reflector to give improved sensitivity and directivity, as required for picking up a band marching down a football field. { ˌpar·əˌbäl·ik 'mī·krəˌfōn }

parabolic reflector [ELECTROMAG] **1.** An antenna having a concave surface which is generated either by translating a parabola perpendicular to the plane in which it lies (in a cylindrical parabolic reflector), or rotating it about its axis of symmetry (in a paraboloidal reflector). Also known as dish. **2.** *See* paraboloidal reflector. { ˌpar·əˌbäl·ik ri'flek·tər }

paraboloidal antenna *See* paraboloidal reflector. { pəˌrab·əˌlȯid·əl an'ten·ə }

paraboloidal reflector [ELECTROMAG] An antenna having a concave surface which is a paraboloid of revolution; it concentrates radiation from a source at its focal point into a beam. Also known as paraboloidal antenna. Also known as parabolic reflector. { pəˌrab·əˌlȯid·əl ri'flek·tər }

paragraph [COMPUT SCI] A complete, logical sequence of instructions in the COBOL programming language, required to carry out a definable program or task. { 'par·əˌgraf }

parallel [COMPUT SCI] Simultaneous transmission of, storage of, or logical operations on the parts of a word, character, or other subdivision of a word in a computer, using separate facilities for the various parts. [ELEC] Connected to the same pair of terminals. Also known as multiple; shunt. { 'par·əˌlel }

parallel access [COMPUT SCI] Transferral of information to or from a storage device in which all elements in a unit of information are transferred simultaneously. Also known as simultaneous access. { 'par·əˌlel 'akˌses }

parallel addition [COMPUT SCI] A method of addition by a computer in which all the corresponding pairs of digits of the addends are processed at the same time during one cycle, and one or more subsequent cycles are used for propagation and adjustment of any carries that may have been generated. { 'par·əˌlel ə'dish·ən }

parallel algorithm [COMPUT SCI] An algorithm in which several computations are carried on simultaneously. { 'par·əˌlel 'al·gəˌrith·əm }

parallel buffer [ELECTR] Electronic device (magnetic core or flip-flop) used to temporarily store digital data in parallel, as opposed to series storage. { 'par·əˌlel 'bəf·ər }

parallel by character [COMPUT SCI] The handling of all the characters of a machine word simultaneously in separate lines, channels, or storage cells. { 'par·əˌlel bī 'kar·ik·tər }

parallel circuit [ELEC] An electric circuit in which the elements, branches (having elements in series), or components are connected between two points, with one of the two ends of each component connected to each point. { 'par·ə ˌlel 'sər·kət }

parallel communications [COMMUN] The simultaneous transmission of data over two or more communications channels. { 'par·əˌlel kə ˌmyü·nə'kā·shənz }

parallel compensation *See* feedback compensation. { 'par·əˌlel ˌkäm·pən'sā·shən }

parallel computation [COMPUT SCI] The simultaneous computation of several parts of a problem. { 'par·əˌlel ˌkäm·pyü'tā·shən }

parallel computer [COMPUT SCI] **1.** A computer that can carry out more than one logic or arithmetic operation at one time. **2.** *See* parallel digital computer. { 'par·əˌlel kəm'pyüd·ər }

parallel conversion [COMPUT SCI] The process of transferring operations from one computer system to another, during which both systems are run together for a period of time to ensure that they are producing identical results. { 'par·əˌlel kən'vər·zhən }

parallel digital computer [COMPUT SCI] Computer in which the digits are handled in parallel; mixed serial and parallel machines are frequently called serial or parallel, according to the way arithmetic processes are performed; an example of a parallel digital computer is one which handles decimal digits in parallel, although it might handle the bits constituting a digit either serially or in parallel. { 'par·əˌlel 'dij·əd·əl kəm'pyüd·ər }

parallel dot character printer *See* line dot matrix. { 'par·əˌlel ˌdät 'kar·ik·tər ˌprint·ər }

parallel element-processing ensemble [COMPUT SCI] A powerful electronic computer used by the U.S. Army to simulate tracking and discrimination of reentry vehicles as part of the ballistic missile defense research program. Abbreviated PEPE. { 'par·əˌlel 'el·ə·mənt ˌprä,ses·iŋ än ˌsäm·bəl }

parallel feed [ELECTR] Application of a direct-current voltage to the plate or grid of a tube in parallel with an alternating-current circuit, so that the direct-current and the alternating-current components flow in separate paths. Also known as shunt feed. { 'par·əˌlel 'fēd }

parallel flow [ELEC] Also known as loop flow. **1.** The flow of electric current from one point to another in an electric network over multiple paths, in accordance with Kirchhoff's laws. **2.** In particular, the flow of electric current through electric power

systems over paths other than the contractual path. { 'par·ə,lel 'flō }

parallel gripper [CONT SYS] A robot end effector made up of two jawlike components that grasp objects. { 'par·ə,lel 'grip·ər }

parallel impedance [ELEC] One of two or more impedances that are connected to the same pair of terminals. { 'par·ə,lel im'pēd·əns }

parallel input/output [COMPUT SCI] Data that are transmitted into and out of a computer over several conductors simultaneously. { 'par·ə,lel 'in,půt 'aůt,půt }

parallel interface [ELECTR] A link between two devices in which all the information transferred between them is transmitted simultaneously over separate conductors. Also known as parallel port. { 'par·ə,lel 'in·tər,fās }

parallel operation [COMPUT SCI] Performance of several actions, usually of a similar nature, by a computer system simultaneously through provision of individual similar or identical devices. { 'par·ə,lel ,äp·ə'rā·shən }

parallel padding [ELEC] Method of parallel operation for two or more power supplies in which their current limiting or automatic crossover output characteristic is employed so that each supply regulates a portion of the total current, each parallel supply adding to the total and padding the output only when the load current demand exceeds the capability, or limit setting, of the first supply. { 'par·ə,lel 'pad·iŋ }

parallel-plate capacitor [ELEC] A capacitor consisting of two parallel metal plates, with a dielectric filling the space between them. { 'par·ə,lel ¦plāt kə'pas·əd·ər }

parallel-plate waveguide [ELECTROMAG] Pair of parallel conducting planes used for propagating uniform circularly cylindrical waves having their axes normal to the plane. { 'par·ə,lel ¦plāt 'wāv ,gīd }

parallel port *See* parallel interface. { 'par·ə,lel ,pōrt }

parallel processor *See* multiprocessor. { 'par·ə ,lel 'prä,ses·ər }

parallel programming [COMPUT SCI] A method for performing simultaneously the normally sequential steps of a computer program, using two or more processors. { 'par·ə,lel 'prō,gram·iŋ }

parallel radio tap [COMMUN] A telephone tapping procedure in which a battery-powered miniature radio transmitter is bridged across the target pair. { 'par·ə,lel 'rād·ē·ō ,tap }

parallel rectifier [ELECTR] One of two or more rectifiers that are connected to the same pair of terminals, generally in series with small resistors or inductors, when greater current is desired than can be obtained with a single rectifier. { 'par·ə ,lel 'rek·tə,fī·ər }

parallel reliability [SYS ENG] Property of a system composed of functionally parallel elements in such a way that if one of the elements fails, the parallel units will continue to carry out the system function. { 'par·ə,lel ri'lī·ə,bil·əd·ē }

parallel representation [COMPUT SCI] The simultaneous appearance of the different bits of a digital variable on parallel bus lines. { 'par·ə ,lel ,rep·ri,zen'tā·shən }

parallel resonance [ELEC] Also known as antiresonance. **1.** The frequency at which the inductive and capacitive reactances of a parallel resonant circuit are equal. **2.** The frequency at which the parallel impedance of a parallel resonant circuit is a maximum. **3.** The frequency at which the parallel impedance of a parallel resonant circuit has a power factor of unity. { 'par·ə,lel 'rez·ən·əns }

parallel resonant circuit [ELEC] A circuit in which an alternating-current voltage is applied across a capacitor and a coil in parallel. Also known as antiresonant circuit. { 'par·ə,lel 'rez·ən·ənt ,sər·kət }

parallel resonant interstage [ELECTR] A coupling between two amplifier stages achieved by means of a parallel-tuned LC circuit. { 'par·ə,lel 'rez·ən·ənt 'in·tər,stāj }

parallel-rod oscillator [ELECTR] Ultra-high-frequency oscillator circuit in which parallel rods or wires of required length and dimensions form the tank circuits. { 'par·ə,lel ¦räd 'äs·ə,lād·ər }

parallel running [COMPUT SCI] **1.** The running of a newly developed system in a data-processing area in conjunction with the continued operation of the current system. **2.** The final step in the debugging of a system; this step follows a system test. { 'par·ə,lel 'rən·iŋ }

parallel search storage [COMPUT SCI] A device for very rapid search of a volume of stored data to permit finding a specific item. { 'par·ə,lel ¦sərch ,stór·ij }

parallel series [ELEC] Circuit in which two or more parts are connected together in parallel to form parallel circuits, and in which these circuits are then connected together in series so that both methods of connection appear. { 'par·ə,lel 'sir·ēz }

parallel storage [COMPUT SCI] A storage device in which words (or characters or digits) can be read in or out simultaneously. { 'par·ə,lel 'stór·ij }

parallel-T network [ELEC] A network used in capacitance measurements at radio frequencies, having two sets of three impedances, each in the form of the letter T, with the arms of the two T's joined to common terminals, and the source and detector each connected between two of these terminals. Also known as twin-T network. { 'par·ə,lel ¦tē 'net,wərk }

parallel transfer [COMPUT SCI] Simultaneous transfer of all bits in a storage location constituting a character or word. { 'par·ə,lel 'tranz·fər }

parallel transmission [COMPUT SCI] The transmission of characters of a word over different lines, usually simultaneously; opposed to serial transmission. { 'par·ə,lel tranz'mish·ən }

parallel-tuned circuit [ELEC] A circuit with two parallel branches, one having an inductance and a resistance in series, the other a capacitance and a resistance in series. { 'par·ə,lel ,tünd 'sər·kət }

parallel wires [ELEC] Two conductors which are parallel to each other; often used in transmission lines. { 'par·ə,lel 'wīrz }

parameter [ELEC] **1.** The resistance, capacitance, inductance, or impedance of a circuit element. **2.** The value of a transistor or tube characteristic. [MATH] An arbitrary constant or variable so appearing in a mathematical expression that changing it gives various cases of the phenomenon represented. { pə'ram·əd·ər }

parameter-driven system [COMPUT SCI] A software system whose functions and operations are controlled mainly by parameters. { pə'ram·əd·ər ¦driv·ən 'sis·təm }

parameter identification [SYS ENG] The problem of estimating the values of the parameters that govern a dynamical system from data on the observed behavior of the system. { pə'ram·əd·ər·ī¦dent·ə·fə'kā·shən }

parameter tags [COMPUT SCI] Constants that are used by several computer programs. { pə'ram·əd·ər ,tagz }

parameter word [COMPUT SCI] A word in a computer storage containing one or more parameters that specify the action of a routine or subroutine. { pə'ram·əd·ər ,wərd }

parametric amplifier [ELECTR] A highly sensitive ultra-high-frequency or microwave amplifier having as its basic element an electron tube or solid-state device whose reactance can be varied periodically by an alternating-current voltage at a pumping frequency. Also known as mavar, paramp; reactance amplifier. { ¦par·ə¦me·trik 'am·plə,fī·ər }

parametric converter [ELECTR] Inverting or noninverting parametric device used to convert an input signal at one frequency into an output signal at a different frequency. { ¦par·ə¦me·trik kən'vərd·ər }

parametric device [ELECTR] Electronic device whose operation depends essentially upon the time variation of a characteristic parameter usually understood to be a reactance. { ¦par·ə ¦me·trik di'vīs }

parametric down-converter [ELECTR] Parametric converter in which the output signal is at a lower frequency than the input signal. { ¦par·ə¦me·trik 'daun kən,vərd·ər }

parametric equalizer [ENG ACOUS] A device that allows control over the center frequencies, bandwidths, and amplitudes (parameters) of band-pass filters that determine the frequency response of audio equipment. { ¦par·ə¦me·trik ,ē·kwə'līz·ər }

parametric excitation [ENG] The method of exciting and maintaining oscillations in either an electrical or mechanical dynamic system, in which excitation results from a periodic variation in an energy storage element in a system such as a capacitor, inductor, or spring constant. { ¦par·ə ¦me·trik ,ek·si'tā·shən }

parametric oscillator [ELECTR] An oscillator in which the reactance parameter of an energy-storage device is varied to obtain oscillation. [OPTICS] A device consisting of an optically nonlinear crystal surrounded by a pair of mirrors to which is applied a relatively high-frequency laser beam and a relatively low-frequency signal,resulting in a low-frequency output whose frequency can be varied, usually by varying the indices of refraction. { ¦par·ə ¦me·trik 'äs·ə,lād·ər }

parametric phase-locked oscillator *See* parametron. { ¦par·ə¦me·trik 'fāz ,läkt 'äs·ə,lād·ər }

parametric programming [COMPUT SCI] A programming approach in which data are stored in external tables or files, rather than within the program itself, and accessed by the program when needed, so that the values of these data can be changed with relative ease. { ¦par·ə¦me·trik 'prō,gram·iŋ }

parametric up-converter [ELECTR] Parametric converter in which the output signal is at a higher frequency than the input signal. { ¦par·ə ¦me·trik 'əp kən,vərd·ər }

parametrized voice response system [ENG ACOUS] A voice response system which first extracts informative parameters from human speech, such as natural resonant frequencies (formants) of the speaker's vocal tract and the fundamental frequency (pitch) of the voice, and which later reconstructs speech from such stored parameters. { pə'ram·ə,trīzd 'vòis ri ,spāns ,sis·təm }

parametron [ELECTR] A resonant circuit in which either the inductance or capacitance is made to vary periodically at one-half the driving frequency; used as a digital computer element, in which the oscillation represents a binary digit. Also known as parametric phase-locked oscillator; phase-locked oscillator; phase-locked subharmonic oscillator. { pə'ram·ə,trän }

paramp *See* parametric amplifier. { 'par,amp }

paraphase amplifier [ELECTR] An amplifier that provides two equal output signals 180° out of phase. { 'par·ə,fāz 'am·plə,fī·ər }

parasite [ELEC] Current in a circuit, due to some unintentional cause, such as inequalities of temperature or of composition; particularly troublesome in electrical measurements. { 'par·ə ,sīt }

parasitic [ELECTR] An undesired and energy-wasting signal current, capacitance, or other parameter of an electronic circuit. { ¦par·ə ¦sid·ik }

parasitic antenna *See* parasitic element. { ¦par·ə ¦sid·ik an'ten·ə }

parasitic current [ELEC] An eddy current in a piece of electrical machinery; gives rise to energy losses. { ¦par·ə¦sid·ik 'kə·rənt }

parasitic element [ELECTROMAG] An antenna element that serves as part of a directional antenna array but has no direct connection to the receiver or transmitter and reflects or reradiates the energy that reaches it, in a phase relationship such as to give the desired radiation pattern. Also known as parasitic antenna; parasitic reflector; passive element. { ¦par·ə¦sid·ik 'el·ə·mənt }

parasitic oscillation [ELECTR] An undesired self-sustaining oscillation or a self-generated transient impulse in an oscillator or amplifier circuit, generally at a frequency above or below the correct operating frequency. { ¦par·ə¦sid·ik ,äs·ə'lā·shən }

parasitic reflector *See* parasitic element. { ¦par·ə ¦sid·ik ri'flek·tər }

parasitic suppressor |ELECTR| A suppressor, usually in the form of a coil and resistor in parallel, inserted in a circuit to suppress parasitic high-frequency oscillations. { ¦par·ə¦sid·ik sə'pres·ər }

paraxial trajectory |ELEC| A trajectory of a charged particle in an axially symmetric electric or magnetic field in which both the distance of the particle from the axis of symmetry and the angle between this axis and the tangent to the trajectory are small for all points on the trajectory. { par'ak·sē·əl trə'jek·trē }

parent |COMPUT SCI| An element that precedes a given element in a data structure. { 'per·ənt }

parenthesis-free notation *See* Polish notation. { pə'ren·thə·səs ¦frē nō'tā·shən }

parity |COMPUT SCI| The use of a self-checking code in a computer employing binary digits in which the total number of 1's or 0's in each permissible code expression is always even or always odd. { 'par·əd·ē }

parity bit |COMMUN| An additional nondata bit that is attached to a set of data bits to check their validity; it is set so that the sum of one-bits in the augmented set is always odd or always even. { 'par·əd·ē ˌbit }

parity check *See* odd-even check. { 'par·əd·ē ˌchek }

parity error |COMPUT SCI| A machine error in which an odd number of bits are accidentally changed, so that the error can be detected by a parity check. { 'par·əd·ē ˌer·ər }

parity transformation |COMMUN| A change in value of a transmitted character denoting the number of one-bits. { 'par·əd·ē ˌtranz·fər'mā·shən }

parser |COMPUT SCI| The portion of a computer program that carries out parsing operations. { 'pär·sər }

parsing |COMPUT SCI| A process whereby phrases in a string of characters in a computer language are associated with the component names of the grammar that generated the string. { 'pärs·iŋ }

partial carry |COMPUT SCI| A word composed of the carries generated at each position when adding many digits in parallel. { 'pär·shəl 'kar·ē }

partial common battery |COMMUN| Type of telephone system in which the talking battery is supplied by each individual telephone, and the signaling and supervisory battery is supplied by the switchboard. { 'pär·shəl 'käm·ən 'bad·ə·rē }

partial function |COMPUT SCI| A partial function from a set A to a set B is a correspondence between some subset of A and B which associates with each element of the subset of A a unique element of B. { 'pär·shəl 'fəŋk·shən }

partially populated board |COMPUT SCI| A printed circuit board on which some but not all of the possible electronic components are mounted, leaving room for additional components. { 'pär·shə·lē ¦päp·yəˌlād·əd 'bȯrd }

partial-read pulse |ELECTR| Current pulse that is applied to a magnetic memory to select a specific magnetic cell for reading. { 'pär·shəl ¦rēd 'pəls }

partial-response maximum-likelihood technique |COMMUN| A method of constructing a digital data stream from an analog signal by using information acquired by sampling the analog waveform at selected instants of time rather than using the entire waveform, and then applying the Viterbi algorithm to find the most likely sequence of bits. Abbreviated PRML technique. { ¦pär·shəl riˌspāns 'mak·sə·məm ¦līk·lēˌhüd tekˌnēk }

partial-select output |ELECTR| The voltage response produced by applying partial-read or partial-write pulses to an unselected magnetic cell. { 'pär·shəl si¦lekt 'aůtˌpůt }

partition |COMPUT SCI| **1.** A reserved portion of a computer memory, sometimes used for the execution of a single computer program. **2.** One of a number of fixed portions into which a computer memory is divided in certain multiprogramming systems. { pär'tish·ən }

partitioned data set |COMPUT SCI| A single data set, divided internally into a directory and one or more sequentially organized subsections called members, residing on a direct access for each device, and commonly used for storage or program libraries. { pär'tish·ənd 'dad·əˌset }

partitioned display |COMPUT SCI| An electronic display that can be divided into two or more viewing areas under user or program control. Also known as split screen. { pär'tish·ənd di'splā }

partitioned file |COMPUT SCI| A file on disk storage that is divided into subdivisions, each of which constitutes a complete file. { pär'tish·ənd 'fīl }

partition noise |ELECTR| Noise that arises in an electron tube when the electron beam is divided between two or more electrodes, as between screen grid and anode in a pentode. { pär'tish·ənˌnȯiz }

part operation |COMPUT SCI| The part in an instruction that specifies the kind of arithmetical or logical operation to be performed, but not the address of the operands. { 'pärt ˌäp·əˌrā·shən }

part programming |CONT SYS| The planning and specification of the sequence of steps or events in the operation of a numerically controlled machine tool. { 'pärt ˌprōˌgram·iŋ }

party line |COMMUN| A subscriber line arranged to serve more than one station, with discriminatory ringing for each station. { 'pärd·ē 'līn }

party-line bus |COMPUT SCI| Parallel input/output bus lines to which are wired all external devices, connected to a processor register by suitable logic. { 'pärd·ē ¦līn 'bəs }

party-line carrier system |COMMUN| A single-frequency carrier telephone system in which the carrier energy is transmitted directly to all other carrier terminals of the same channel. { 'pärd·ē ¦līn 'kar·ē·ər ˌsis·təm }

parylene capacitor |ELEC| A highly stable fixed capacitor using parylene film as the dielectric; it can be operated at temperatures up to 170°C, as well as at cryogenic temperatures. { 'par·əˌlēn kə'pas·əd·ər }

Pascal |COMPUT SCI| A procedure-oriented programming language whose highly structured

design facilitates the rapid location and correction of coding errors. { pa'skal }

Paschen's law [ELECTR] The law that the sparking potential between two parallel plate electrodes in a gas is a function of the product of the gas density and the distance between the electrodes. Also known as Paschen's rule. { 'päsh-ənz ˌlȯ }

Paschen's rule See Paschen's law. { 'päsh-ənz ˌrül }

pass [COMPUT SCI] A complete cycle of reading, processing, and writing in a computer. { pas }

passband [ELECTR] A frequency band in which the attenuation of a filter is essentially zero. { 'pasˌband }

pass element [ELECTR] Controlled variable resistance device, either a vacuum tube or power transistor, in series with the source of direct-current power; the pass element is driven by the amplified error signal to increase its resistance when the output needs to be lowered or to decrease its resistance when the output must be raised. { 'pas ˌel-ə-mənt }

passivation [ELECTR] Growth of an oxide layer on the surface of a semiconductor to provide electrical stability by isolating the transistor surface from electrical and chemical conditions in the environment; this reduces reverse-current leakage, increases breakdown voltage, and raises power dissipation rating. { ˌpas-ə'vā-shən }

passive AND gate See AND gate. { 'pas-iv 'and ˌgāt }

passive antenna [ELECTROMAG] An antenna which influences the directivity of an antenna system but is not directly connected to a transmitter or receiver. { 'pas-iv an'ten-ə }

passive component See passive element. { 'pas-iv kəm'pō-nənt }

passive corner reflector [ELECTROMAG] A corner reflector that is energized by a distant transmitting antenna; used chiefly to improve the reflection of radar signals from objects that would not otherwise be good radar targets. { 'pas-iv 'kȯr-nər riˌflek-tər }

passive device [COMPUT SCI] A unit of a computer which cannot itself initiate a request for communication with another device, but which honors such a request from another device. { 'pas-iv di'vīs }

passive double reflector [ELECTROMAG] A combination of two passive reflectors positioned to bend a microwave beam over the top of a mountain or ridge, generally without appreciably changing the general direction of the beam. { 'pas-iv 'dəb-əl ri'flek-tər }

passive electronic countermeasures [ELECTR] Electronic countermeasures that do not radiate energy, including reconnaissance or surveillance equipment that detects and analyzes electromagnetic radiation from radar and communications transmitters, and devices such as chaff which return confusing or obscuring echoes to enemy radar; passive electronic attack. { 'pas-iv iˌlek'trän-ik 'kaůnt-ərˌmezh-ərz }

passive element [ELEC] An element of an electric circuit that is not a source of energy, such as a resistor, inductor, or capacitor. Also known as passive component. [ELECTROMAG] See parasitic element. { 'pas-iv 'el-ə-mənt }

passive filter [ELEC] An electric filter composed of passive elements, such as resistors, inductors, or capacitors, without any active elements, such as vacuum tubes or transistors. { 'pas-iv 'fil-tər }

passive jamming [ELECTR] Use of confusion reflectors to return spurious and confusing signals to enemy radars. Also known as mechanical jamming. { 'pas-iv 'jam-iŋ }

passive-matrix liquid-crystal display See supertwisted nematic liquid-crystal display. { ¦pas-iv ¦mā-triks ¦lik-wəd ¦krist-əl di'splā }

passive network [ELEC] A network that has no source of energy. { 'pas-iv 'netˌwərk }

passive radar [ENG] A technique for detecting objects at a distance by picking up the microwave electromagnetic energy that is both radiated and reflected by all bodies. { 'pas-iv 'rāˌdär }

passive radiator [ENG ACOUS] A loudspeaker driver with no voice-coil or magnet assemblies that is mounted in a box with a woofer and exhibits a resonance that can be used to improve the low-frequency response of the system. { ¦pas-iv 'rād-ēˌād-ər }

passive-radiator system [ELECTR] A loudspeaker system in which the woofer is mounted in a box that also has a second speaker with no voice-coil or magnet assemblies. { ¦pas-iv 'rād-ēˌād-ər ˌsis-təm }

passive reflector [ELECTROMAG] A flat reflector used to change the direction of a microwave or radar beam; often used on microwave relay towers to permit placement of the transmitter, repeater, and receiver equipment on the ground, rather than at the tops of towers. Also known as plane reflector. { 'pas-iv ri'flek-tər }

passive system [ELECTR] Electronic system which emits no energy, and does not give away its position or existence. { 'pas-iv ˌsis-təm }

passive termination [COMPUT SCI] The simplest means of ending a chain of peripheral devices connected to a small computer system interface (SCSI) port, suitable for chains with no more than four devices. { ˌpas-iv ˌtər-mə'nā-shən }

passive transducer [ELECTR] A transducer containing no internal source of power. { 'pas-iv tranz'dü-sər }

passthrough [COMPUT SCI] A procedure that allows a user to communicate with a computer through the use of the operating system of a second computer. { 'pasˌthrü }

password [COMPUT SCI] A unique word or string of characters that must be supplied to meet security requirements before a program, computer operator, or user can gain access to data. { 'pasˌwərd }

password guessing [COMPUT SCI] A method of gaining unauthorized access to a computing system by using computers and dictionaries or large word lists to try likely passwords. { 'pasˌwərd ˌges-iŋ }

paste [ELEC] In batteries, the medium in the form of a paste or jelly, containing an electrolyte; it is

positioned adjacent to the negative electrode of a dry cell; in an electrolytic cell, the paste serves as one of the conducting plates. { pāst }

pasted-plate storage battery *See* Faure storage battery. { 'pās·təd ¦plāt 'stōr·ij ˌbad·ə·rē }

patch [COMPUT SCI] **1.** To modify a program or routine by inserting a machine language correction in an object deck, or by inserting it directly into the computer through the console. **2.** The section of coding inserted in this way. [ELEC] A temporary connection between jacks or other terminations on a patch board. { pach }

patch board [ELEC] A board or panel having a number of jacks at which circuits are terminated; patch cords are plugged into the jacks to connect various circuits temporarily as required in broadcast, communication, and computer work. { 'pach ˌbȯrd }

patch cord [ELEC] A cord equipped with plugs at each end, used to connect two jacks on a patch board. { 'pach ˌkȯrd }

patch panel *See* control panel; panel. { 'pach ˌpan·əl }

path [COMPUT SCI] **1.** The logical sequence of instructions followed by a computer in carrying out a routine. **2.** A series of physical or logical connections between records or segments in a database management system, generally involving the use of pointers. { path }

path attenuation [COMMUN] Power loss between transmitter and receiver, due to any cause. { 'path əˌten·yə'wā·shən }

path computation [CONT SYS] The calculations involved in specifying the trajectory followed by a robot. { 'path ˌkäm·pyəˌtā·shən }

path length *See* physical path length; software path length. { 'path ˌleŋkth }

path plotting [ELECTROMAG] In laying out a microwave system, the plotting of the path followed by the microwave beam on a profile chart which indicates the earth's curvature. { 'path ˌpläd·iŋ }

pattern analysis [COMPUT SCI] The phase of pattern recognition that consists of using whatever is known about the problem at hand to guide the gathering of data about the patterns and pattern classes, and then applying techniques of data analysis to help uncover the structure present in the data. { 'pad·ərn əˌnal·ə·səs }

pattern generator [ELECTR] A signal generator used to produce a test waveform for service work on a display device. { 'pad·ərn ˌjen·əˌrād·ər }

pattern recognition [COMPUT SCI] The automatic identification of figures, characters, shapes, forms, and patterns without active human participation in the decision process. { 'pad·ərn ˌrek·ig'nish·ən }

pattern-sensitive fault [COMPUT SCI] A fault that appears only in response to one pattern or sequence of data, or certain patterns or sequences. { 'pad·ərn ¦sen·səd·iv 'fȯlt }

PAX *See* private automatic exchange. { paks }

payload [COMMUN] Referring to the bytes which follow the header byte in a packet; the transport stream packet header and adaptation fields are not payload. { 'pāˌlōd }

pay television *See* subscription television. { 'pā 'tel·əˌvizh·ən }

P band [COMMUN] A band of radio frequencies extending from 225 to 390 megahertz, corresponding to wavelengths of 133.3 to 76.9 centimeters. { 'pē ˌband }

PBX *See* private branch exchange.

p-channel metal-oxide semiconductor *See* PMOS. { ¦pē ˌchan·əl ˌmed·əl ¦äk,sīd 'sem·i·kənˌdək·tər }

PCI *See* peripheral component interconnect.

P class [COMPUT SCI] The class of decision problems that can be solved in polynomial time. { ¦pē klas }

PCM *See* pulse-code modulation.

PCN *See* personal communications network.

PCP *See* primary control program.

PCR *See* program clock reference.

PCS *See* personal communications service.

PCSB *See* pulse-coded scanning beam.

PD *See* potential difference.

PDA *See* postacceleration.

PDF *See* portable document format.

P display *See* plan position indicator. { 'pē di ˌsplā }

PDL *See* page description language.

PDM *See* pulse-duration modulation.

4PDT *See* four-pole double-throw.

PDU *See* power distribution unit.

peak attenuation [COMMUN] The diminution of response to a modulated wave experienced on modulation crests. { 'pēk əˌten·yə'wā·shən }

peak cathode current [ELECTR] **1.** Maximum instantaneous value of a periodically recurring cathode current. **2.** Highest instantaneous value of a randomly recurring pulse of cathode current. **3.** Highest instantaneous value of a nonrecurrent pulse of cathode current occurring under fault conditions. { 'pēk 'kath,ōd ˌkə·rənt }

peak clipper *See* limiter. { 'pēk ˌklip·ər }

peak clipping [ELEC] Reduction of the maximum demand for electric power from an electrical utility, often achieved by direct control of customer loads by signals directed to customer appliances. [ELECTR] *See* limiting. { 'pēk ˌklip·iŋ }

peak detector [ELECTR] A detector whose output voltage approximates the true peak value of an applied signal; the detector tracks the signal in its sample mode and preserves the highest input signal in its hold mode. { 'pēk di,tek·tər }

peak distortion [COMMUN] Largest total distortion of telegraph signals noted during a period of observation. { 'pēk di'stȯr·shən }

peak envelope power [ELECTR] Of a radio transmitter, the average power supplied to the antenna transmission line by a transmitter during one radio-frequency cycle at the highest crest of the modulation envelope, taken under conditions of normal operation. { 'pēk 'en·vəˌlōp ˌpaù·ər }

peaker [ELECTR] A small fixed or adjustable inductance used to resonate with stray and distributed capacitances in a broad-band amplifier to increase the gain at the higher frequencies. { 'pēk·ər }

peak forward voltage [ELECTR] The maximum instantaneous voltage applied to an electronic device in the direction of lesser resistance to current flow. { 'pēk 'fȯr·wərd 'vōl·tij }

peaking circuit [ELECTR] A circuit used to improve the high-frequency response of a broadband amplifier; in shunt peaking, a small coil is placed in series with the anode load; in series peaking, the coil is placed in series with the grid of the following stage. { 'pēk·iŋ ˌsər·kət }

peaking network [ELECTR] Type of interstage coupling network in which an inductance is effectively in series (series-peaking network), or in shunt (shunt-peaking network), with the parasitic capacitance to increase the amplification at the upper end of the frequency range. { 'pēk·iŋ ˌnet ˌwərk }

peaking transformer [ELEC] A transformer in which the number of ampere-turns in the primary is high enough to produce many times the normal flux density values in the core; the flux changes rapidly from one direction of saturation to the other twice per cycle, inducing a highly peaked voltage pulse in a secondary winding. { 'pēk·iŋ tranzˌfȯr·mər }

peak inverse anode voltage [ELECTR] Maximum instantaneous anode voltage in the direction opposite to that in which the tube or other device is designed to pass current. { 'pēk 'inˌvərs 'an ˌōd ˌvōl·tij }

peak inverse voltage [ELECTR] Maximum instantaneous anode-to-cathode voltage in the reverse direction which is actually applied to the diode in an operating circuit. { 'pēk 'inˌvərs ˌvōl·tij }

peak limiter *See* limiter. { 'pēk ˌlim·əd·ər }

peak load [ELEC] The maximum instantaneous load or the maximum average load over a designated interval of time. Also known as peak power. { 'pēk ˌlōd }

peak power *See* peak load. { 'pēk 'paù·ər }

peak second algorithm [COMMUN] A set of mathematical procedures for attempting to predict the number of transmissions that will be carried out in a communications system during the busiest 1-second interval during some study period. { 'pēk 'sek·ənd 'al·gəˌrith·əm }

peak signal level [ELECTR] Expression of the maximum instantaneous signal power or voltage as measured at any point in a facsimile transmission system; this includes auxiliary signals. { 'pēk 'sig·nəl ˌlev·əl }

peak-to-valley ratio [COMMUN] The ratio of the largest amplitude of a modulated wave to its smallest value. { ¦pēk tə 'val·ē ˌrā·shō }

peak value [ELEC] The maximum instantaneous value of a varying current, voltage, or power during the time interval under consideration. Also known as crest value. { 'pēk 'val·yü }

pedestal *See* blanking level. { 'ped·əst·əl }

pedestal level *See* blanking level. { 'ped·əst·əl ˌlev·əl }

peek [COMPUT SCI] An instruction that causes the contents of a specific storage location in a computer to be displayed. { pēk }

peephole masks [COMPUT SCI] In character recognition, a set of characters (each character residing in the character reader in the form of strategically placed points) which theoretically render all input characters as being unique regardless of their style. { 'pēpˌhōl ˌmasks }

peer [COMMUN] A functional unit in a communications system that is in the same protocol layer as another such unit. { pir }

peer-to-peer network [COMMUN] A local-area network in which there is no central controller and all the nodes have equal access to the resources of the network. { ¦pir tə ¦pir 'net ˌwərk }

pel *See* pixel. { pel }

pencil beam [ELECTROMAG] A beam of radiant energy concentrated in an approximately conical or cylindrical portion of space of relatively small diameter; this type of beam is used for many revolving navigational lights and radar beams. { 'pen·səl ˌbēm }

pencil beam antenna [ELECTROMAG] Unidirectional antenna designed so that cross sections of the major lobe formed by planes perpendicular to the direction of maximum radiation are approximately circular. { 'pen·səl ˌbēm anˌten·ə }

pencil follower [COMPUT SCI] A device for converting graphic images to digital form; the information to be analyzed appears on a reading table where a reading pencil is made to follow the trace, and a mechanism beneath the table surface transmits position signals from the pencil to an electronic console for conversion to digital form. { 'pen·səl ˌfäl·ə·wər }

pencil tube [ELECTR] A small tube designed especially for operation in the ultra-high-frequency band; used as an oscillator or radio-frequency amplifier. { 'pen·səl ˌtüb }

pending input/output [COMPUT SCI] An input/output operation that has been initiated but not yet carried out, so that the central processing unit either is temporarily idle or services other programs and tasks until the operation is completed. { 'pend·iŋ 'inˌpůt 'aůtˌpůt }

penetration depth [ELEC] In induction heating, the thickness of a layer, extending inward from a conductor's surface, whose resistance to direct current equals the resistance of the whole conductor to alternating current of a given frequency. { ˌpen·ə'trā·shən ˌdepth }

penetration frequency *See* critical frequency. { ˌpen·ə'trā·shən ˌfrē·kwən·sē }

penetration phosphors [ELECTR] Phosphors of two different colors that are placed in separate layers on the screen of a cathode-ray tube to form a system for creating color displays in which a high-energy beam penetrates the first layer and excites the second, while a low-energy beam is stopped by the first layer and excites it. { ˌpen·ə'trā·shən ˌfäs·fərz }

penetration testing [COMPUT SCI] An activity that is intended to determine if there is a way to cause a computer program to fail to perform in the expected manner; it involves hypothesizing flaws that would prevent the program from

enforcing security, and conducting experiments to confirm or refute the hypothesized flaws. { ˌpen·əˈtrā·shən ˌtest·iŋ }

Penning gage *See* Philips ionization gage. { ˈpen·iŋ ˌgāj }

pentagrid *See* heptode. { ˈpen·təˌgrid }

pentode [ELECTR] A five-electrode electron tube containing an anode, a cathode, a control electrode, and two additional electrodes that are ordinarily grids. { ˈpenˌtōd }

pentode transistor [ELECTR] Point-contact transistor with four-point-contact electrodes; the body serves as a base with three emitters and one collector. { ˈpenˌtōd tranˈzis·tər }

PEPE *See* parallel element-processing ensemble. { ˈpeˌpē }

percentage differential relay [ELECTR] Differential relay which functions when the difference between two quantities of the same nature exceeds a fixed percentage of the smaller quantity. Also known as biased relay; ratio-balance relay; ratio-differential relay. { pərˈsen·tij ˌdif·əˈren·chəl ˈrēˌlā }

percentage modulation *See* percent modulation. { pərˈsen·tij ˌmaj·əˈlā·shən }

percentage ripple [ELECTR] Ratio of the effective value of the ripple voltage to the average value of the total voltage, expressed as a percentage. { pərˈsen·tij ˈrip·əl }

percent distortion [COMMUN] The ratio of the amplitude of a harmonic component to the fundamental component multiplied by 100. { pərˈsent diˈstȯr·shən }

percent make [ELECTR] **1.** In pulse testing, the length of time a circuit stands closed compared to the length of the test signal. **2.** Percentage of time during a pulse period that telephone dial pulse springs are making contact. { pərˈsent ˈmāk }

percent modulation [COMMUN] The modulation factor expressed as a percentage. Also known as percentage modulation. { pərˈsent ˌmäj·əˈlā·shən }

perceptron [COMPUT SCI] A pattern recognition machine, based on an analogy to the human nervous system, capable of learning by means of a feedback system which reinforces correct answers and discourages wrong ones. { pərˈsepˌträn }

perceptual audio coding [COMMUN] The process of representing an audio signal with fewer bits while still preserving audio quality. The coding schemes are based on the perceptual characteristics of the human ear; some examples of these coders are PAC, AAC, MPEG-2, and AC-3. Also known as audio bit rate reduction; audio compression. Abbreviated PAC. { pərˈsəp·chə·wəl ˈȯd·ē·ō ˌkōd·iŋ }

percolation [COMPUT SCI] The transfer of needed data back from secondary storage devices to main storage. { pər·kəˈlā·shən }

perfect dielectric *See* ideal dielectric. { ˈpər·fikt ˌdī·əˈlek·trik }

perforator [COMMUN] In telegraph practice, a device for punching code signals in paper tape for application to a tape transmitter. { ˈpər·fəˌrād·ər }

perform [COMPUT SCI] A subroutine in the COBOL programming language that allows a portion of a program to be executed on command by other portions of the same program. { pərˈfȯrm }

performance failure [COMPUT SCI] Failure of a computer system in which the system operates correctly but fails to deliver the results in a timely fashion. { pərˈfȯr·məns ˌfāl·yər }

perfory [COMPUT SCI] The removable edges of computer paper containing holes engaged by the pin-feed mechanism. { ˈpər·fə·rē }

periodic antenna [ELECTROMAG] An antenna in which the input impedance varies as the frequency is altered. { ˌpir·ēˈäd·ik anˈten·ə }

periodic duty [ELEC] Intermittent duty in which the load conditions are regularly recurrent. { ˌpir·ēˈäd·ik ˈdüd·ē }

periodic field focusing [ELECTR] Focusing of an electron beam where the electrons follow a trochoidal path and the focusing field interacts with them at selected points. { ˌpir·ēˈäd·ik ˈfēldˌfō·kə·siŋ }

periodic line [ELEC] Line consisting of successive and identical sections, similarly oriented, the electrical properties of each section not being uniform throughout; the periodicity is in space and not in time; an example of a periodic line is the loaded line with loading coils uniformly spaced. { ˌpir·ēˈäd·ik ˌlīn }

peripheral *See* peripheral device. { pəˈrif·ə·rəl }

peripheral buffer [COMPUT SCI] A device acting as a temporary storage when transmission occurs between two devices operating at different transmission speeds. { pəˈrif·ə·rəl ˈbəf·ər }

peripheral component interconnect [COMPUT SCI] A bus standard for connecting additional input/output devices (such as graphics or modem cards) to a personal computer. Abbreviated PCI. { pəˌrif·ə·rəl kəmˌpō·nənt ˈin·tərˌkə·nek }

peripheral control unit [COMPUT SCI] A device which connects a unit of peripheral equipment with the central processing unit of a computer and which interprets and responds to instructions from the central processing unit. { pəˈrif·ə·rəl kənˈtrōl ˌyü·nət }

peripheral device [COMPUT SCI] Any device connected internally or externally to a computer and used to enter or display data, such as the keyboard, mouse, monitor, scanner, and printer. { pəˈrif·ərel diˌvīs }

peripheral equipment [COMPUT SCI] Equipment that works in conjunction with a computer but is not part of the computer itself. { pəˈrif·ə·rəl iˈkwip·mənt }

peripheral interface channel [COMPUT SCI] A path along which information can flow between a unit of peripheral equipment and the central processing unit of a computer. { pəˈrif·ə·rəl ˈin·tərˌfās ˌchan·əl }

peripheral-limited [COMPUT SCI] Property of a computer system whose processing time is determined by the speed of its peripheral equipment.

rather than by the speed of its central processing unit. { pə'rif·ə·rəl ¦im·əd·əd }

peripheral operation [COMPUT SCI] An operation in which an input or output device is used, and which is not directly controlled by a computer while the operation is being carried out. { pə'rif·ə·rəl ˌäp·ə'rā·shən }

peripheral processing [COMPUT SCI] Processing that is carried out by peripheral equipment or by an auxiliary computer. { pə'rif·ə·rəl 'prāˌses·iŋ }

peripheral processor [COMPUT SCI] Auxiliary computer performing specific operations under control of the master computer. { pə'rif·ə·rəl 'prāˌses·ər }

peripheral transfer [COMPUT SCI] The transmission of data between two units of peripheral equipment or between a peripheral unit and the central processing unit of a computer. { pə'rif·ə·rəl 'tranz·fər }

peripheral units *See* peripheral equipment. { pə'rif·ə·rəl ˌyü·nəts }

peristaltic charge-coupled device [ELECTR] A high-speed charge-transfer integrated circuit in which the movement of the charges is similar to the peristaltic contractions and dilations of the digestive system. { ¦per·ə¦stäl·tik 'chärj ¦kəp·əld di'vīs }

Perl *See* Practical Extraction and Reporting Language. { pərl }

permanent echo [ELECTR] *See* fixed echo. [ELECTROMAG] A signal reflected from an object that is fixed with respect to a radar site. { 'pər·mə·nənt 'ek·ō }

permanent error [COMPUT SCI] An error that occurs when a sector mark on disk pack or floppy disk is incorrectly modified by writing data over it, and that can be corrected only by clearing the entire disk and rewriting the track and sector marks. { 'pər·mə·nənt 'er·ər }

permanent fault [COMPUT SCI] A hardware malfunction that always occurs when a particular set of conditions exists, and that can be made to occur deliberately, in contrast to a sporadic fault. { 'pər·mə·nənt 'fôlt }

permanent-magnet dynamic loudspeaker *See* permanent-magnet loudspeaker. { 'pər·mə·nənt ¦mag·nət dī¦nam·ik 'laůdˌspēk·ər }

permanent-magnet focusing [ELECTR] Focusing of the electron beam in a cathode-ray tube by means of the magnetic field produced by one or more permanent magnets mounted around the neck of the device. { 'pər·mə·nənt ¦mag·nət 'fō·kəs·iŋ }

permanent-magnet loudspeaker [ENG ACOUS] A moving-conductor loudspeaker in which the steady magnetic field is produced by a permanent magnet. Also known as permanent-magnet dynamic loudspeaker. { 'pər·mə·nənt ¦mag·nət 'laůdˌspēk·ər }

permanent-magnet stepper motor [ELEC] A stepper motor in which the rotor is a powerful permanent magnet and each stator coil is energized independently in sequence; the rotor aligns itself with the stator coil that is energized. { 'pər·mə·nənt ¦mag·nət 'step·ər ˌmōd·ər }

permanent-split capacitor motor [ELEC] A capacitor motor in which the starting capacitor and the auxiliary winding remain in the circuit for both starting and running. Abbreviated PSC motor. Also known as capacitor start-run motor. { 'pər·mə·nənt ¦split kə'pas·əd·ər ˌmōd·ər }

permanent storage [COMPUT SCI] A means of storing data for rapid retrieval by a computer; does not permit changing the stored data. { 'pər·mə·nənt 'stór·ij }

Permasyn motor [ELEC] A synchronous motor which has permanent magnets embedded in the squirrel-cage rotor to provide an equivalent direct-current field. { 'pər·mə·sən 'mōd·ər }

permatron [ELECTR] Thermionic gas-discharge diode in which the start of conduction is controlled by an external magnetic field. { 'pər·məˌträn }

permeability tuning [ELEC] Process of tuning a resonant circuit by varying the permeability of an inductor; it is usually accomplished by varying the amount of magnetic core material of the inductor by slug movement. { ˌpər·mē·ə'bil·əd·ē ˌtün·iŋ }

permittivity [ELEC] The dielectric constant multiplied by the permittivity of empty space, where the permittivity of empty space (ϵ_0) is a constant appearing in Coulomb's law, having the value of 1 in centimeter-gram-second electrostatic units, and of 8.854×10^{-12} farad/meter in rationalized meter-kilogram-second units. Symbolized ϵ. { ˌpər·mə'tiv·əd·ē }

permutation modulation [COMMUN] Proposed method of transmitting digital information by means of band-limited signals in the presence of additive white gaussian noise; pulse-code modulation and pulse-position modulation are considered simple special cases of permutation modulation. { ˌpər·myə'tā·shən ˌmäj·əˌlā·shən }

permutation table [COMMUN] In computers, a table designed for the systematic construction of code groups; it may also be used to correct garbles in groups of code text. { ˌpər·myə'tā·shən ˌtā·bəl }

perpendicular recording *See* vertical recording. { ˌpər·pən¦dik·yə·lər ri'kȯrd·iŋ }

persistence [ELECTR] **1.** A measure of the length of time that the screen of a cathode-ray tube remains luminescent after excitation is removed; ranges from 1 for short persistence to 7 for long persistence. **2.** A faint luminosity displayed by certain gases for some time after the passage of an electric discharge. { pər'sis·təns }

persistent-image device [ELECTR] An optoelectronic amplifier capable of retaining an image for a definite length of time. { pər'sis·tənt ¦im·ij di ˌvīs }

persistron [ELECTR] A device in which electroluminescence and photoconductivity are used in a single panel capable of producing a steady or persistent display with pulsed signal input. { pər'sisˌträn }

personal communications network [COMMUN] The series of small low-power antennas that

support a personal communications service, and are linked to a master telephone switch that is connected to the main telephone network. Abbreviated PCN. { ˌpərs·ən·əl kəˌmyü·nə ¦kā·shənz ˌnetˌwərk }

personal communications service [COMMUN] A mobile telephone service in which pocket-sized telephones carried by the users communicate via small low-power transmitter-receiver antennas that are installed throughout a city or community. Abbreviated PCS. { ˌpərs·ən·əl kə ˌmyü·nə'kā·shənz ˌsər·vəs }

personal computer [COMPUT SCI] A computer for home or personal use. { 'pər·sən·əl kəm'pyüd·ər }

personal digital assistant *See* hand-held computer. { ˌpərs·ən·əl ˌdij·əd·əl ə'sis·tənt }

personal identification code [COMPUT SCI] A special number up to six characters in length on a strip of magnetic tape embedded in a plastic card which identifies a user accessing a special-purpose computer. Abbreviated PIC. { 'pər·sən·əl īˌden·tə·fə'kā·shən ˌkōd }

personal information manager [COMPUT SCI] Software that combines the functions of word-processing, database, and desktop accessory programs, making it possible to organize information that is relatively loosely structured. Abbreviated PIM. { ¦pər·sən·əl ˌin·fər'mā·shən ˌman·ij·ər }

persuader [ELECTR] Element of storage tube which directs secondary emission to electron multiplier dynodes. { pər'swād·ər }

pertinency factor [COMPUT SCI] In information retrieval, the ratio obtained in dividing the total number of relevant documents retrieved by the total number of documents retrieved. { 'pər·tə·nən·sē ˌfak·tər }

perveance [ELECTR] The space-charge-limited cathode current of a diode divided by the $\frac{3}{2}$ power of the anode voltage. { 'pər·vē·əns }

PES *See* packetized elementary stream. { ¦pē¦ē ¦es }

PES packet [COMMUN] The data structure used to carry elementary stream data; consists of a packet header followed by PES packet payload. { ¦pē¦ē¦es ¦pak·ət }

PES stream [COMMUN] Referring to a stream consisting of PES packets, all of whose payloads consists of data from a single elementary stream, and all of which have the same stream ID number. { ¦pē¦ē¦es ¦strēm }

Petersen coil *See* arc-suppression coil. { 'pēd·ər·sən ˌkȯil }

Petri net [COMMUN] An abstract, formal model of information flow, which is used as a graphical language for modeling systems with interacting concurrent components; in mathematical terms, a structure with four parts or components: a finite set of places, a finite set of transitions, an input function, and an output function. { 'pē·trē ˌnet }

petticoat insulator [ELEC] Insulator having an outward-flaring lower part that is hollow inside to increase the length of the surface leakage path and keep part of the path dry at all times. { 'ped·i,kōt 'in·səˌlād·ər }

pf *See* power factor.

pF *See* picofarad.

PF key *See* programmed function key. { ˌpē'ef ˌkē }

PFM *See* pulse-frequency modulation.

P-frame *See* predicted picture. { 'pē ˌfrām }

phanotron [ELECTR] A hot-filament diode rectifier tube utilizing an arc discharge in mercury vapor or an inert gas, usually xenon. { 'fanəˌträn }

phantastran [ELECTR] A solid-state phantastron. { fan'tasˌträn }

phantastron [ELECTR] A monostable pentode circuit used to generate sharp pulses at an adjustable and accurately timed interval after receipt of a triggering signal. { fan'tasˌträn }

phantom circuit [COMMUN] A communication circuit derived from two other communication circuits or from one other circuit and ground, with no additional wire lines. { 'fan·təm 'sər·kət }

phantom-circuit loading coil [ELEC] Loading coil for introducing a desired amount of inductance into a phantom circuit, and a minimum amount of inductance into its constituent circuits. { 'fan·təm ¦sər·kət 'lōd·iŋ ˌkȯil }

phantom-circuit repeating coil [ELEC] Repeating coil used at a terminal of a phantom circuit, in the terminal circuit extending from the midpoints of the associated side-circuit repeating coils. { 'fan·təm ¦sər·kət ri'pēd·iŋ ˌkȯil }

phantom group [ELEC] **1.** Group of four open-wire conductors suitable for the derivation of a phantom circuit. **2.** Three circuits which are derived from simplexing two physical circuits to form a phantom circuit. { 'fan·təm 'grüp }

phantom repeating coil [ELEC] A side-circuit repeating coil or a phantom-circuit repeating coil when discrimination between these two types is not necessary. { 'fan·təm ri'pēd·iŋ ˌkȯil }

phantom signals [ELECTR] Signals appearing on a radar display, the cause of which cannot readily be determined and which may be caused by circuit fault, interference, propagation anomalies, measurement ambiguities, jamming, and so on. { 'fan·təm 'sig·nəlz }

phantom target *See* echo box. { 'fan·təm 'tär·gət }

phase advancer [ELEC] Phase modifier which supplies leading reactive volt-amperes to the system to which it is connected; may be either synchronous or asynchronous. { 'fāz ədˌvan·sər }

phase-alternation line system [COMMUN] A color television system used in Europe and other parts of the world, in which the phase of the color subcarrier is changed from scanning line to scanning line, requiring transmission of a line switching signal as well as a color burst. Abbreviated PAL system. { 'fāz ˌȯl·tər¦nā·shən ˌlīn ˌsis·təm }

phase-angle meter *See* phase meter. { 'fāz¦aŋ·gəl ˌmēd·ər }

phase-balance relay [ELEC] Relay which functions by reason of a difference between two quantities associated with different phases of a polyphase circuit. { 'fāz ¦bal·əns 'rēˌlā }

phase change See phase shift. { 'fāz ,chānj }

phase-change coefficient See phase constant. { 'fāz ,chānj ,kō·i,fish·ənt }

phase-change recording [COMPUT SCI] An optical recording technique that uses a laser to alter the crystalline structure of a metallic surface to create bits that reflect or absorb light when they are illuminated during the read operation. { 'fāz ,chānj ri'kȯrd·iŋ }

phase comparator [COMPUT SCI] A comparator that accepts two radio-frequency input signals of the same frequency and provides two video outputs which are proportional, respectively, to the sine and cosine of the phase difference between the two inputs. { 'fāz kəm,par·əd·ər }

phase-comparison relaying [ELEC] A method of detecting faults in an electric power system in which signals are transmitted from each of two terminals every half cycle so that a continuous signal is received at an intermediate point if there is no fault between the terminals, while a periodic signal is received if there is a fault. { 'fāz kəm ,par·ə·sən 'rē,lā·iŋ }

phase conductor [ELEC] In a polyphase circuit, any conductor other than the neutral conductor. { 'fāz kən,dək·tər }

phase constant [ELECTROMAG] A rating for a line or medium through which a plane wave of a given frequency is being transmitted; it is the imaginary part of the propagation constant, and is the space rate of decrease of phase of a field component (or of the voltage or current) in the direction of propagation, in radians per unit length. Also known as phase-change coefficient; wavelength constant. { 'fāz ,kän·stənt }

phase control See hue control. { 'fāz kən,trōl }

phase converter [ELEC] A converter that changes the number of phases in an alternating-current power source without changing the frequency. { 'fāz kən,vərd·ər }

phase-correcting network See phase equalizer. { 'fāz kə¦rek·tiŋ 'net,wərk }

phase correction [COMMUN] Process of keeping synchronous telegraph mechanisms in substantially correct phase relationship. { 'fāz kə ,rek·shən }

phase crossover [CONT SYS] A point on the plot of the loop ratio at which it has a phase angle of 180°. { 'fāz 'krȯs,ō·vər }

phased array [ELECTROMAG] An array of dipoles on a radar antenna in which the signal feeding each dipole is varied so that antenna beams can be formed in space and scanned very rapidly in azimuth and elevation. { 'fāzd ə'rā }

phased-array radar [ENG] Radar using an antenna of the multiple-element array type in which the relative phasing of the elements, electronically controlled, positions the main beam in angle without need of moving the antenna. { 'fāzd ə'rā 'rā,där }

phase delay [COMMUN] Ratio of the total phase shift (radians) of a sinusoidal signal in transmission through a system or transducer, to the frequency (radians/second) of the signal. { 'fāz di,lā }

phase detector [ELECTR] **1.** A circuit that provides a direct-current output voltage which is related to the phase difference between an oscillator signal and a reference signal, for use in controlling the oscillator to keep it in synchronism with the reference signal. Also known as phase discriminator. **2.** A circuit or device in a radar receiver giving a voltage output dependent upon the phase difference of two inputs; used in Doppler sensing in a coherent radar. { 'fāz di,tek·tər }

phase deviation [COMMUN] The peak difference between the instantaneous angle of a modulated wave and the angle of the sine-wave carrier. { 'fāz ,dē·vē'ā·shən }

phase discriminator See phase detector. { 'fāz di,skrim·ə,nād·ər }

phase distortion [COMMUN] **1.** The distortion which occurs in an instrument when the relative phases of the input signal differ from those of the output signal. **2.** See phase-frequency distortion. { 'fāz di,stȯr·shən }

phase encoding [COMPUT SCI] A method of recording data on magnetic tape in which a logical 1 is defined as the transition from one magnetic polarity to another positioned at the center of the bit cell, and 0 is defined as the transition in the opposite direction, also at the center of the cell. Also known as Manchester coding. { 'fāz in'kōd·iŋ }

phase equalizer [ELECTR] A network designed to compensate for phase-frequency distortion within a specified frequency band. Also known as phase-correcting network. { 'fāz 'ē·kwə,liz·ər }

phase excursion [COMMUN] In angle modulation, the difference between the instantaneous angle of the modulated wave and the angle of the carrier. { 'fāz ik,skər·zhən }

phase factor See power factor. { 'fāz ,fak·tər }

phase-frequency distortion [COMMUN] Distortion occurring because phase shift is not proportional to frequency over the frequency range required for transmission. Also known as phase distortion. { 'fāz ¦fre·kwən·sē di,stȯr·shən }

phase generator [ELECTR] An instrument that accepts single-phase input signals over a given frequency range, or generates its own signal, and provides continuous shifting of the phase of this signal by one or more calibrated dials. { 'fāz ,jen·ə,rād·ər }

phase inversion [ELECTR] Production of a phase difference of 180° between two similar wave shapes of the same frequency. { 'fāz in,vər·zhən }

phase inverter [ELECTR] A circuit or device that changes the phase of a signal by 180°, as required for feeding a push-pull amplifier stage without using a coupling transformer, or for changing the polarity of a pulse; a triode is commonly used as a phase inverter. Also known as inverter. { 'fāz in,vərd·ər }

phase jitter [ELECTR] Jitter that undesirably shortens or lengthens pulses intermittently during data processing or transmission. { 'fāz ,jid·ər }

phase lock [ELECTR] Technique of making the phase of an oscillator signal follow exactly

the phase of a reference signal by comparing the phases between the two signals and using the resultant difference signal to adjust the frequency of the reference oscillator. { 'fāz ˌläk }

phase-locked communication [COMMUN] Systems in which oscillators at the receiver and transmitter are locked in phase. { 'fāz ¦läkt kə ˌmyü·nə'kā·shən }

phase-locked loop [ELECTR] A circuit that consists essentially of a phase detector which compares the frequency of a voltage-controlled oscillator with that of an incoming carrier signal or reference-frequency generator; the output of the phase detector, after passing through a loop filter, is fed back to the voltage-controlled oscillator to keep it exactly in phase with the incoming or reference frequency. Abbreviated PLL. { 'fāz ¦läkt 'lüp }

phase-locked oscillator *See* parametron. { 'fāz ¦läkt 'äs·əˌlād·ər }

phase-locked subharmonic oscillator *See* parametron. { 'fāz ¦läkt ¦səb·här'män·ik 'äs·əˌlād·ər }

phase-locked system [ENG] A radar system, having a stable local oscillator, in which information regarding the target is gained by measuring the phase shift of the echo. { 'fāz ¦läkt ˌsis·təm }

phase magnet [COMMUN] Magnetically operated latch used to phase a facsimile transmitter or recorder. Also known as trip magnet. { 'fāz ˌmag·nət }

phase margin [CONT SYS] The difference between 180° and the phase of the loop ratio of a stable system at the gain-crossover frequency. { 'fāz ˌmär·jən }

phase meter [ENG] An instrument for the measurement of electrical phase angles. Also known as phase-angle meter. { 'fāz ˌmēd·ər }

phase modifier [ELEC] Machine whose chief purpose is to supply leading or lagging reactive voltamperes to the system to which it is connected; may be either synchronous or asynchronous. { 'fāz ˌmäd·əˌfī·ər }

phase modulation [COMMUN] Modulation in which the linearly increasing angle of a sine wave has added to it a phase angle that is proportional to the instantaneous value of the modulating signal (message to be communicated). Abbreviated PM. { 'fāz ˌmäj·əˌlā·shən }

phase-modulation detector [ELECTR] A device which recovers or detects the modulating signal from a phase-modulated carrier. { 'fāz ˌmäj·əˌlā·shən di,tek·tər }

phase-modulation transmitter [ELECTR] A radio transmitter used to broadcast a phase-modulated signal. { 'fāz ˌmäj·əˌlā·shən tranz ˌmid·ər }

phase modulator [ELECTR] An electronic circuit that causes the phase angle of a modulated wave to vary (with respect to an unmodulated carrier) in accordance with a modulating signal. { 'fāz ˌmäj·əˌlād·ər }

phase plane analysis [CONT SYS] A method of analyzing systems in which one plots the time derivative of the system's position (or some other quantity characterizing the system) as a function of position for various values of initial conditions. { 'fāz ¦plān ə'nal·ə·səs }

phase portrait [CONT SYS] A graph showing the time derivative of a system's position (or some other quantity characterizing the system) as a function of position for various values of initial conditions. { 'fāz ˌpȯr·trət }

phaser [COMMUN] Facsimile device for adjusting equipment so the recorded elemental area bears the same relation to the record sheet as the corresponding transmitted elemental area bears to the subject copy in the direction of the scanning line. [ELECTROMAG] Microwave ferrite phase shifter employing a longitudinal magnetic field along one or more rods of ferrite in a waveguide. { 'fāz·ər }

phase response [ELECTR] A graph of the phase shift of a network as a function of frequency. { 'fāz ri,späns }

phase reversal modulation [COMMUN] Form of pulse modulation in which reversal of signal phase serves to distinguish between the two binary states used in data transmission. { 'fāz riˌvər·səl ˌmäj·əˈlā·shən }

phase-rotation relay *See* phase-sequence relay. { 'fāz rō¦tā·shən 'rēˌlā }

phase-sensitive detector [ELECTR] An electronic circuit that consists essentially of a multiplier and a low-pass circuit and that produces a direct-current output signal that is proportional to the product of the amplitudes of two alternating-current input signals of the same frequency and to the cosine of the phase between them. { 'fāz ˌsen·səd·iv di,tek·tər }

phase-sequence relay [ELEC] Relay which functions according to the order in which the phase voltages successively reach their maximum positive values. Also known as phase-rotation relay. { 'fāz ¦sē·kwəns 'rēˌlā }

phase shift [ELECTR] The phase angle between the input and output signals of a network or system. { 'fāz ˌshift }

phase-shift circuit [ELECTR] A network that provides a voltage component which is shifted in phase with respect to a reference voltage. { 'fāz ¦shift ˌsər·kət }

phase-shift control *See* phase control. { 'fāz¦shift kənˌtrōl }

phase-shift discriminator [ELECTR] A discriminator that uses two similarly connected diodes fed by a transformer that is tuned to the center frequency; when the frequency-modulated or phase-modulated input signal swings away from this center frequency, one diode receives a stronger signal than the other; the net output of the diodes is then proportional to the frequency displacement. Also known as Foster-Seely discriminator. { 'fāz ¦shift diˌskrim·əˌnād·ər }

phase shifter [ELEC] A device used to change the phase relation between two alternating-current values. { 'fāz ,shif·tər }

phase-shifting transformer [ELEC] A transformer which produces a difference in phase angle between two circuits. { 'fāz ¦shif·tiŋ tranz ,fȯr·mər }

phase-shift keying [COMMUN] A form of phase modulation in which the modulating function shifts the instantaneous phase of the modulated wave between predetermined discrete values. Abbreviated PSK. { 'fāz ¦shift ,kē·iŋ }

phase-shift oscillator [ELECTR] An oscillator in which a network having a phase shift of 180° per stage is connected between the output and the input of an amplifier. { 'fāz ¦shift 'äs·ə,lād·ər }

phase splitter [ELEC] A circuit that takes a single input alternating voltage and produces two or more output alternating voltages that differ in phase from one another. { 'fāz ,splid·ər }

phase transformation [ELEC] A change of polyphase power from three-phase to six-phase, from three-phase to twelve-phase, and so forth, by use of transformers. { 'fāz ,tranz·fər,mā·shən }

phase transformer [ELEC] A transformer for changing a two-phase current to a three-phase current, or vice versa. { 'fāz tranz,fȯr·mər }

phase undervoltage relay [ELEC] Relay which functions by reason of the reduction of one phase voltage in a polyphase circuit. { 'fāz 'ən·dər ,vōl·tij 'rē,lā }

phase winding [ELEC] One of the individual windings on the armature of a polyphase motor or generator. { 'fāz ,wīnd·iŋ }

phasing *See* framing. { 'fāz·iŋ }

phasing line [ELECTR] That portion of the length of scanning line set aside for the phasing signal in a video system. { 'fāz·iŋ ,līn }

phasing signal [ELECTR] A signal used to adjust the picture position along the scanning line in a facsimile system. { 'fāz·iŋ ,sig·nəl }

phasitron [ELECTR] An electron tube used to frequency-modulate a radio-frequency carrier; internal electrodes are designed to produce a rotating disk-shaped corrugated sheet of electrons; audio input is applied to a coil surrounding the glass envelope of the tube, to produce a varying axial magnetic field that gives the desired phase or frequency modulation of the RF carrier input to the tube. { 'fāz·ə,trän }

phasmajector *See* monoscope. { 'faz·mə,jek·tər }

Phillips ionization gage [ELECTR] An ionization gage in which a high voltage is applied between two electrodes, and a strong magnetic field deflects the resulting electron stream, increasing the length of the electron path and thus increasing the chance for ionizing collisions of electrons with gas molecules. Abbreviated pig. Also known as cold-cathode ionization gage; Penning gage. { 'fil·əps ,ī·ə·nə'zā·shən ,gāj }

phonation [ENG ACOUS] Production of speech sounds. { fō'nā·shən }

phone *See* headphone; telephone set. { fōn }

phonemic synthesizer [ENG ACOUS] A voice response system in which each word is abstractly represented as a sequence of expected vowels and consonants, and speech is composed by juxtaposing the expected phonemic sequence for each word with the sequences for the preceding and following words. { fə'nē·mik 'sin·thə,sīz·ər }

phone patch [ELECTR] A device connecting an amateur or citizens'-band transceiver temporarily to a telephone system. { 'fōn ,pach }

phone plug [ELEC] A standard plug having a ¼-inch-diameter (19-millimeter) shank, used with headphones, microphones, and other audio equipment; usually designed for use with either two or three conductors. Also known as telephone plug. { 'fōn ,pləg }

phonetic alphabet [COMMUN] A list of standard words used for positive identification of letters in a voice message transmitted by radio or telephone. { fə'ned·ik 'al·fə,bet }

phonetic search [COMPUT SCI] A method of locating information in a file in which an algorithm is used to locate combinations of characters that sound similar to a specified combination. { fə'ned·ik 'sərch }

phonic motor [ELEC] A small synchronous motor which is driven by the current of an accurate oscillator, such as a crystal oscillator, and whose frequency is thus constant to a high degree of accuracy; used in astronomical instruments where a driving speed of great accuracy is required. { 'fän·ik 'mōd·ər }

phonograph [ENG ACOUS] An instrument for recording or reproducing acoustical signals, such as voice or music, by transmission of vibrations from or to a stylus that is in contact with a groove in a rotating disk. { 'fō·nə,graf }

phono jack [ELECTR] A jack designed to accept a phono plug and provide a ground connection for the shield of the conductor connected to the plug. { 'phō·nō ,jak }

phono plug [ELECTR] A plug designed for attaching to the end of a shielded conductor, for feeding audio-frequency signals from a phonograph or other audio-frequency source to a mating phono jack on a preamplifier or amplifier. { 'fō·nō ,pləg }

phosphor dot [ELECTR] One of the tiny dots of phosphor material that are used in groups of three, one group for each primary color, on the screen of a color video picture tube. { 'fäs·fər ,dät }

photocapacitative effect [ELEC] A change in the capacitance of a bulk semiconductor or semiconductor surface film upon exposure to light. { ,fōd·ō·kə'pas·ə,tā·tiv i,fekt }

photocathode [ELECTR] A photosensitive surface that emits electrons when exposed to light or other suitable radiation; used in phototubes, video camera tubes, and other light-sensitive devices. { ¦fōd·ō'kath,ōd }

photocell [ELECTR] A solid-state photosensitive electron device whose current-voltage characteristic is a function of incident radiation. Also known as electric eye; photoelectric cell. { 'fōd·ə,sel }

photocell relay [ELECTR] A relay actuated by a signal received when light falls on, or is prevented from falling on, a photocell. { 'fōd·ə,sel 'rē,lā }

photocomposition [COMPUT SCI] Composition of type using electrophotographic techniques such as phototypesetters and laser printers. { ˌfōd·ō ˌkäm·pəˈzish·ən }

photoconduction [SOLID STATE] An increase in conduction of electricity resulting from absorption of electromagnetic radiation { ¦fōd·ō·kənˈdək·shən }

photoconductive cell [ELECTR] A device for detecting or measuring electromagnetic radiation by variation of the conductivity of a substance (called a photoconductor) upon absorption of the radiation by this substance. Also known as photoresistive cell; photoresistor. { ¦fōd·ō·kənˈdək·tiv ˈsel }

photoconductive device [ELECTR] A photoelectric device which utilizes the photoinduced change in electrical conductivity to provide an electrical signal. { fōd·ō·kənˈdək·tiv diˈvīs }

photoconductive film [ELECTR] A film of material whose current-carrying ability is enhanced when illuminated. { fōd·ō·kənˈdək·tiv ˈfilm }

photoconductive gain factor [ELECTR] The ratio of the number of electrons per second flowing through a circuit containing a cube of semiconducting material, whose sides are of unit length, to the number of photons per second absorbed in this volume. { fōd·ō·kənˈdək·tiv ˈgān ˌfak·tər }

photoconductive meter [ELECTR] An exposure meter in which a battery supplies power through a photoconductive cell to a milliammeter. { fōd·ō·kənˈdək·tiv ˈmed·ər }

photoconductivity [SOLID STATE] The increase in electrical conductivity displayed by many nonmetallic solids when they absorb electromagnetic radiation. { ¦fōd·ō·ˌkänˌdəkˈtiv·əd·ē }

photoconductivity gain [ELECTR] The number of charge carriers that circulate through a circuit involving a photoconductor for each charge carrier generated by light. { fōd·ōˌkänˌdəkˈtiv·əd·ē ˌgān }

photoconductor [SOLID STATE] A nonmetallic solid whose conductivity increases when it is exposed to electromagnetic radiation. { ¦fōd·ō·kənˈdək·tər }

photoconductor diode *See* photodiode. { fōd·ō·kənˈdək·tərˈdīˌōd }

photocoupler *See* optoisolator. { ¦fōd·ōˈkəp·lər }

photodarlington [ELECTR] A Darlington amplifier in which the input transistor is a phototransistor. { ¦fōd·ōˈdär·liŋ·tən }

photodetector [ELECTR] A detector that responds to radiant energy; examples include photoconductive cells, photodiodes, photoresistors, photoswitches, phototransistors, phototubes, and photovoltaic cells. Also known as light-sensitive cell; light-sensitive detector; light sensor photodevice; photodevice; photoelectric detector; photosensor. { ¦fōd·ō·diˈtek·tər }

photodevice *See* photodetector. { ¦fōd·ō·diˌvīs }

photodiffusion effect *See* Dember effect. { ¦fōd·ō·diˈfyü·zhən iˌfekt }

photodiode [ELECTR] A semiconductor diode in which the reverse current varies with illumination; examples include the alloy-junction photocell and the grown-junction photocell, also known as photoconductor diode. { ¦fōd·ōˌōd }

photoelectric [ELECTR] Pertaining to the electrical effects of light, such as the emission of electrons, generation of voltage, or a change in resistance when exposed to light. { ¦fōd·ō·iˈlek·trik }

photoelectric absorption [ELECTR] Absorption of photons in one of the several photoelectric effects. { ¦fōd·ō·iˈlek·trik əbˈsȯrp·shən }

photoelectric cell *See* photocell. { ¦fōd·ō·iˈlek·trik ˈsel }

photoelectric constant [ELECTR] The ratio of the frequency of radiation causing emission of photoelectrons to the voltage corresponding to the energy absorbed by a photoelectron; equal to Planck's constant divided by the electron charge. { ¦fōd·ō·iˈlek·trik ˈkän·stənt }

photoelectric control [ELECTR] Control of a circuit or piece of equipment by changes in incident light. { ¦fōd·ō·iˈlek·trik kənˈtrōl }

photoelectric counter [ELECTR] A photoelectrically actuated device used to record the number of times a given light path is intercepted by an object. { ¦fōd·ō·iˈlek·trik ˈkaůnt·ər }

photoelectric cutoff register control [ELECTR] Use of a photoelectric control system as a longitudinal position regulator to maintain the position of the point of cutoff with respect to a repetitive pattern of moving material. { ¦fōd·ō·iˈlek·trik ¦kətˌȯf ¦rej·ə·stər kənˌtrōl }

photoelectric detector *See* photodetector. { ¦fōd·ō·iˈlek·trik diˈtek·tər }

photoelectric device [ELECTR] A device which gives an electrical signal in response to visible, infrared, or ultraviolet radiation. { ¦fōd·ō·iˈlek·trik diˈvīs }

photoelectric effect *See* photoelectricity. { ¦fōd·ō·iˈlek·trik iˌfekt }

photoelectric electron-multiplier tube *See* multiplier phototube. { ¦fōd·ō·iˈlek·trik iˈlek·trän ˈməl·təˌplī·ər ˌtüb }

photoelectric infrared radiation *See* near-infrared radiation. { ¦fōd·ō·iˈlek·trik ¦in·frəˌred ˌrā·dēˈā·shən }

photoelectric intrusion detector [ELECTR] A burglar-alarm system in which interruption of a light beam by an intruder reduces the illumination on a phototube and thereby closes an alarm circuit. { ¦fōd·ō·iˈlek·trik inˈtrü·zhən diˌtek·tər }

photoelectricity [ELECTR] The liberation of an electric charge by electromagnetic radiation incident on a substance; includes photoemission, photoionization, photoconduction, the photovoltaic effect, and the Auger effect (an internal photoelectric process). Also known as photoelectric effect; photoelectric process. { ¦fōd·ōˌlekˈtris·əd·ē }

photoelectric lighting control [ELECTR] Use of a photoelectric relay actuated by a change in illumination in a given area or at a given point. { ¦fōd·ō·iˈlek·trik ˈlīd·iŋ kənˌtrōl }

photoelectric loop control [CONT SYS] A photoelectric control system used as a position regulator for a loop of material passing from one strip-processing line to another that may travel at a different speed. Also known as loop control. { |fōd·ō·i'lek·trik 'lüp kən,trōl }

photoelectric process *See* photoelectricity. { |fōd·ō·i'lek·trik 'prä·səs }

photoelectric register control [CONT SYS] A register control using a light source, one or more phototubes, a suitable optical system, an amplifier, and a relay to actuate control equipment when a change occurs in the amount of light reflected from a moving surface due to register marks, dark areas of a design, or surface defects. Also known as photoelectric scanner. { |fōd·ō·i'lek·trik 'rej·ə·stər kən,trōl }

photoelectric relay [ELECTR] A relay combined with a phototube and amplifier, arranged so changes in incident light on the phototube make the relay contacts open or close. Also known as light relay. { |fōd·ō·i'lek·trik 'rē,lā }

photoelectric scanner *See* photoelectric register control. { |fōd·ō·i'lek·trik 'skan·ər }

photoelectric sorter [CONT SYS] A photoelectric control system used to sort objects according to color, size, shape, or other light-changing characteristics. { |fōd·ō·i'lek·trik 'sȯrd·ər }

photoelectric tube *See* phototube. { |fōd·ō·i'lek·trik 'tüb }

photoelectromagnetic effect [ELECTR] The effect whereby, when light falls on a flat surface of an intermetallic semiconductor located in a magnetic field that is parallel to the surface, excess hole-electron pairs are created, and these carriers diffuse in the direction of the light but are deflected by the magnetic field to give a current flow through the semiconductor that is at right angles to both the light rays and the magnetic field. { |fōd·ō·i|lek·trō·mag'nedik i'fekt }

photoelectromotive force [ELECTR] Electromotive force caused by photovoltaic action. { |fōd·ō·i|lek·trō'mōd·iv 'fȯrs }

photoelectron [ELECTR] An electron emitted by the photoelectric effect. { |fōd·ō·i'lek,trän }

photoemission [ELECTR] The ejection of electrons from a solid (or less commonly, a liquid) by incident electromagnetic radiation. Also known as external photoelectric effect. { |fōd·ō·i'mish·ən }

photoemission threshold [ELECTR] The energy of a photon which is just sufficient to eject an electron from a solid or liquid in photoemission. { |fōd·ō·i'mish·ən 'thresh,hōld }

photoemissive cell [ELECTR] A device which detects or measures radiant energy by measurement of the resulting emission of electrons from the surface of a photocathode. { |fōd·ō·i'mis·iv 'sel }

photoemissivity [ELECTR] The property of a substance that emits electrons when struck by light. { |fōd·ō,ē·mə'siv·əd·ē }

photofabrication [ELECTR] In manufacturing circuit boards and integrated circuits, a process in which the etching pattern is placed over the circuit board or semiconductor material, the board or chip is placed in a special solution, and the assembly is exposed to light. { ,fōd·ō ,fab·rə'kā·shən }

photoflash lamp [ELEC] A lamp consisting of a glass bulb filled with finely shredded aluminum foil in an atmosphere of oxygen; when the foil is ignited by a low-voltage dry cell, it burns with a burst of high-intensity light of short time duration and with definitely regulated time characteristics. { 'fōd·ə,flash ,lamp }

photoflash unit [ELECTR] A portable electronic light source for photographic use, consisting of a capacitor-discharge power source, a flash tube, a battery for charging the capacitor, and sometimes also a high-voltage pulse generator to trigger the flash. { 'fōd·ə,flash ,yü·nət }

photoflood lamp [ELEC] An incandescent lamp used in photography which has a high-temperature filament, so that it gives high illumination and high color temperature for a short lifetime. { 'fōd·ə,fləd ,lamp }

photoglow tube [ELECTR] Gas-filled phototube used as a relay by making the operating voltage sufficiently high so that ionization and a flow discharge occur, with considerable current flow, when a certain illumination is reached. { 'fōd·ō ,glō ,tüb }

photographic recording [COMMUN] Facsimile recording in which a photosensitive surface is exposed to a signal-controlled light beam or spot. { |fōd·ə|graf·ik ri'kȯrd·iŋ }

photographic sound recorder [ELECTR] A sound recorder having means for producing a modulated light beam and means for moving a light-sensitive medium relative to the beam to give a photographic recording of sound signals. Also known as optical sound recorder. { |fōd·ə |graf·ik 'saund ri,kȯrd·ər }

photographic sound reproducer [ELECTR] A sound reproducer in which an optical sound record on film is moved through a light beam directed at a light-sensitive device, to convert the recorded optical variations back into audio signals. Also known as optical sound reproducer. { |fōd·ə|graf·ik 'saund ,rē·prə,düs·ər }

photoisland grid [ELECTR] Photosensitive surface in the storage-type, Farnsworth dissector tube for television cameras. { 'fōd·ō,ī·lənd ,grid }

photoisolator *See* optoisolator. { |fōd·ō'ī·sə ,lād·ər }

photomask [ELECTR] A film or glass negative that has many high-resolution images, used in the production of semiconductor devices and integrated circuits. { 'fōd·ō,mask }

photometer [ENG] An instrument used for making measurements of light or electromagnetic radiation, in the visible range. { fō'täm·əd·ər }

photomultiplier *See* multiplier phototube. { |fōd·ō'məl·tə,plī·ər }

photomultiplier cell [ELECTR] A transistor whose *pn*-junction is exposed so that it conducts more readily when illuminated. { |fōd·ō'məl·tə,plī·ər |sel }

photomultiplier counter [ELECTR] A scintillation counter that has a built-in multiplier phototube. { |fōd·ō'məl·tə,plī·ər |kaunt·ər }

photomultiplier tube *See* multiplier phototube. { |fōd·ō'məl·tə,plī·ər |tüb }

photon coupled isolator [ELECTR] Circuit coupling device, consisting of an infrared emitter diode coupled to a photon detector over a short shielded light path, which provides extremely high circuit isolation. { 'fō,tän |kəp·əld 'ī·sə,lād·ər }

photon coupling [ELECTR] Coupling of two circuits by means of photons passing through a light pipe. { 'fō,tän ,kəp·liŋ }

photonegative [ELECTR] Having negative photoconductivity, hence decreasing in conductivity (increasing in resistance) under the action of light; selenium sometimes exhibits photonegativity. { |fōd·ō'neg·ə·tiv }

photonics [ELECTR] The electronic technology involved with the practical generation, manipulation, analysis, transmission, and reception of electromagnetic energy in the visible, infrared, and ultraviolet portions of the light spectrum. It contributes to many fields, including astronomy, biomedicine, data communications and storage, fiber optics, imaging, optical computing, optoelectronics, sensing, and telecommunications. Also known as optoelectronics. { fō'tän·iks }

photopositive [ELECTR] Having positive photoconductivity, hence increasing in conductivity (decreasing in resistance) under the action of light; selenium ordinarily has photopositivity. { |fōd·ō'päz·əd·iv }

photoresistive cell *See* photoconductive cell. { |fōd·ō·ri'zis·tiv 'sel }

photoresistor *See* photoconductive cell. { |fōd·ō·ri'zis·tər }

photo-SCR *See* light-activated silicon controlled rectifier. { |fōd·ō |es|sē'är }

photosensitive *See* light-sensitive. { |fōd·ō'sen·səd·iv }

photosensor *See* photodetector. { |fōd·ō'sen·sər }

phototelegraphy *See* facsimile. { |fōd·ō·tə'leg·rə·fē }

photothyristor *See* light-activated silicon controlled rectifier. { |fōd·ō·thī'ris·tər }

phototransistor [ELECTR] A junction transistor that may have only collector and emitter leads or also a base lead, with the base exposed to light through a tiny lens in the housing; collector current increases with light intensity, as a result of amplification of base current by the transistor structure. { |fōd·ō·tran'zis·tər }

phototronic photocell *See* photovoltaic cell. { |fōd·ə|trān·ik 'fōd·ə,sel }

phototube [ELECTR] An electron tube containing a photocathode from which electrons are emitted when it is exposed to light or other electromagnetic radiation. Also known as electric eye; light-sensitive tube; photoelectric tube. { 'fōd·ō ,tüb }

phototube cathode [ELECTR] The photoemissive surface which is the most negative element of a phototube. { 'fōd·ō,tüb 'kath,ōd }

phototube relay [ELECTR] A photoelectric relay in which a phototube serves as the light-sensitive device. { 'fōd·ō,tüb 'rē,lā }

photovaristor [ELECTR] Varistor in which the current-voltage relation may be modified by illumination, for example, one in which the semiconductor is cadmium sulfide or lead telluride. { |fōd·ō·və'ris·tər }

photovoltaic [ELECTR] Capable of generating a voltage as a result of exposure to visible or other radiation. { |fōd·ō·vōl'tā·ik }

photovoltaic cell [ELECTR] A device that detects or measures electromagnetic radiation by generating a potential at a junction (barrier layer) between two types of material, upon absorption of radiant energy. Also known as barrier-layer cell; barrier-layer photocell; boundary-layer photocell; photronic photocell. { |fōd·ō·vōl'tā·ik ,sel }

photovoltaic effect [ELECTR] The production of a voltage in a nonhomogeneous semiconductor such as silicon, or at a junction between two types of material, by the absorption of light or other electromagnetic radiation. { |fōd·ō·vōl'tā·ik ,fekt }

photovoltaic meter [ELECTR] An exposure cell in which a photovoltaic cell produces a current proportional to the light falling on the cell, and this current is measured by a sensitive microammeter. { |fōd·ō·vōl'tā·ik ,mēd·ər }

photox cell [ELECTR] Type of photovoltaic cell in which a voltage is generated between a copper base and a film of cuprous oxide during exposure to visible or other radiation. { 'fō,täks ,sel }

photronic cell [ELECTR] Type of photovoltaic cell in which a voltage is generated in a layer of selenium during exposure to visible or other radiation. { fō'trän·ik ,sel }

photronic photocell *See* photovoltaic cell. { fō'trän·ik 'fōd·ə,sel }

phrase name *See* metavariable. { 'frāz,nām }

physical data independence [COMPUT SCI] A file structure such that the physical structure of the data can be modified without changing the logical structure of the file. { 'fiz·ə·kəl |dad·ə ,in·di'pen·dəns }

physical data structure [COMPUT SCI] The manner in which data are physically arranged on a storage medium, including various indices and pointers. { 'fiz·ə·kəl 'dad·ə ,strək·chər }

physical device table [COMPUT SCI] A table associated with a physical input/output unit containing such information as the device type, an indication of data paths that may be used to transfer information to and from the device, status information on whether the device is busy, the input/output operation currently pending on the device, and the availability of any storage contained in the device. { 'fiz·ə·kəl di|vīs ,tā·bəl }

physical drive [COMPUT SCI] An operational hard disk, which may be formatted to include more than one logical drive. { 'fiz·i·kəl |drīv }

physical electronics [ELECTR] The study of physical phenomena basic to electronics, such as discharges, thermionic and field emission

and conduction in semiconductors and metals. { 'fiz·ə·kəl ˌi,lek'trän·iks }

physical input/output control system *See* PIOCS.

physical network [COMPUT SCI] A system of computers that communicate via cabling, modems, or other hardware, and may include more than one logical network or form part of a logical network. { 'fiz·i·kəl ˈnetˌwərk }

physical path length [COMPUT SCI] The physical distance that an electronic signal must travel between two points. Also known as path length. { 'fiz·ə·kəl ˈpath ˌleŋkth }

physical realizability [CONT SYS] For a transfer function, the possibility of constructing a network with this transfer function. { 'fiz·ə·kəl ˌrē·ə ˌlīz·ə'bil·əd·ē }

physical record [COMPUT SCI] A set of adjacent data characters recorded on some storage medium, physically separated from other physical records that may be on the same medium by means of some indication that can be recognized by a simple hardware test. Also known as record block. { 'fiz·ə·kəl 'rek·ərd }

physical system *See* causal system. { 'fiz·ə·kəl 'sis·təm }

pi attenuator [ELEC] An attenuator consisting of a pi network whose impedances are all resistances. { 'pī ə'ten·yəˌwād·ər }

PIC *See* personal identification code. { ˌpē|ī|sē or pik }

pick-and-place robot [CONT SYS] A simple robot, often with only two or three degrees of freedon and little or no trajectory control, whose sole function is to transfer items from one place to another. { ˌpik ən ˈplās 'rōˌbät }

pick device *See* pointing device. { 'pik diˌvīs }

picking [COMPUT SCI] Identification of information displayed on a screen for subsequent computer processing, by pointing to it with a lightpen. { 'pik·iŋ }

pickoff [ELECTR] A device used to convert mechanical motion into a proportional electric signal. { 'pikˌȯf }

pickup [ELEC] **1.** A device that converts a sound, scene, measurable quantity, or other form of intelligence into corresponding electric signals, as in a microphone, phonograph pickup, or television camera. **2.** The minimum current, voltage, power, or other value at which a relay will complete its intended function. **3.** Interference from a nearby circuit or system. { 'pikˌəp }

pickup tube *See* camera tube. { 'pikˌəp ˌtüb }

pickup voltage [ELEC] Of a magnetically operated device, the voltage at which the device starts to operate. { 'pikˌəp ˌvōl·tij }

picoammeter [ENG] An ammeter whose scale is calibrated to indicate current values in picoamperes. { ˌpē·kō'amˌēd·ər }

picoampere [ELEC] A unit of current equal to 10^{-12} ampere, or one-millionth of a microampere. Abbreviated pA. { ˌpē·kō'amˌpir }

picofarad [ELEC] A unit of capacitance equal to 10^{-12} farad, or one-millionth of a microfarad. Also known as micromicrofarad (deprecated usage); puff (British usage). Abbreviated pF. { ˌpē·kō'farˌəd }

picture [COMMUN] **1.** The image on the screen of a video display. **2.** Source, coded, or reconstructed image data; a source or reconstructed picture consists of three rectangular matrices representing the luminance and two chrominance signals. [COMPUT SCI] In COBOL, a symbolic description of each data element or item according to specified rules concerning numerals, alphanumerics, location of decimal points, and length. { 'pik·chər }

picture black *See* black signal. { 'pik·chər ˌblak }

picture carrier [COMMUN] A carrier frequency located 1.25 megahertz above the lower frequency limit of a standard National Television Systems Committee television signal; in color television, it is used for transmitting color information. Also known as luminance carrier. { 'pik·chər ˌkar·ē·ər }

picture compression [COMPUT SCI] The elimination of redundant information from a digital picture through the use of efficient encoding techniques in which frequently occurring gray levels or blocks of gray levels are represented by short codes and infrequently occurring ones by longer codes. { 'pik·chər kəmˌpresh·ən }

picture element [ELECTR] **1.** That portion, in facsimile, of the subject copy which is seen by the scanner at any instant; it can be considered a square area having dimensions equal to the width of the scanning line. **2.** In video, any segment of a scanning line, the dimension of which along the line is exactly equal to the nominal line width; the area which is being explored at any instant in the scanning process. Also known as critical area; elemental area; pixel; recording spot; scanning spot. { 'pik·chər ˌel·ə·mənt }

picture frequency [COMMUN] A frequency that results solely from scanning of subject copy in a facsimile system. [ELECTR] *See* frame frequency. { 'pik·chər ˌfrē·kwən·sē }

picture grammar [COMPUT SCI] A formalism for carrying out computations on pictures and describing picture structure. { 'pik·chər ˌgram·ər }

picture processing *See* image processing. { 'pik·chər ˌprä,ses·iŋ }

picture segmentation [COMPUT SCI] The division of a complex picture into parts corresponding to regions or objects, so that the picture can then be described in terms of the parts, their properties, and their spatial relationships. Also known as scene analysis; segmentation. { 'pik·chər ˌseg·mən'tā·shən }

picture signal [COMMUN] The signal resulting from the scanning process in a video system. { 'pik·chər ˌsig·nəl }

picture synchronizing pulse *See* vertical synchronizing pulse. { 'pik·chər 'siŋ·krəˌnīz·iŋ ˌpəls }

picture transmission [COMMUN] Electric transmission of a picture having a gradation of shade values. { 'pik·chər tranz'mish·ən }

picture transmitter *See* visual transmitter. { 'pik·chər tranzˌmid·ər }

picture tube [ELECTR] A cathode-ray tube used in video displays to produce an image by varying the electron-beam intensity as the beam is deflected from side to side and up and down to scan a raster on the fluorescent screen at the large end of the tube. Also known as kinescope; television picture tube. { 'pik·chər ˌtüb }

picture-tube brightener [ELECTR] A small step-up transformer that can be inserted between the socket and base of a picture tube to increase the heater voltage and thereby increase picture brightness to compensate for normal aging of the tubes. { 'pik·chər ˌtüb ˌbrīt·ən·ər }

picture white *See* white signal. { 'pik·chər ˌwīt }

Pierce oscillator [ELECTR] Oscillator in which a piezoelectric crystal unit is connected between the grid and the plate of an electron tube, in what is basically a Colpitts oscillator, with voltage division provided by the grid-cathode and plate-cathode capacitances of the circuit. { 'pirs 'äs·ə ˌlād·ər }

piezoelectric [SOLID STATE] Having the ability to generate a voltage when mechanical force is applied, or to produce a mechanical force when a voltage is applied, as in a piezoelectric crystal. { pēˌā·zō·ə'lek·trik }

piezoelectric crystal [SOLID STATE] A crystal which exhibits the piezoelectric effect; used in crystal loudspeakers, crystal microphones, and crystal cartridges. { pēˌā·zō·ə'lek·trik 'krist·əl }

piezoelectric effect [SOLID STATE] **1.** The generation of electric polarization is certain dielectric crystal as a result of the application of mechanical stress. **2.** The reverse effect, in which application of a voltage between certain faces of the crystal produces a mechanical distortion of the meterial. { pēˌā·zō·ə'lek·trik i'fekt }

piezoelectric element [ELECTR] A piezoelectric crystal used in an electric circuit, for example, as a transducer to convert mechanical or acoustical signals to electric signals, or to control the frequency of a crystal oscillator. { pēˌā·zō·ə'lek·trik 'el·ə·mənt }

piezoelectricity [SOLID STATE] Electricity or electric polarization resulting from the piezoelectric effect. { pēˌā·zō·əˌlek'tris·əd·ē }

piezoelectric loudspeaker *See* crystal loudspeaker. { pēˌā·zō·ə'lek·trik 'laüdˌspēk·ər }

piezoelectric microphone *See* crystal microphone. { pēˌā·zō·ə'lek·trik 'mī·krəˌfōn }

piezoelectric oscillator *See* crystal oscillator. { pēˌā·zō·ə'lek·trik 'äs·əˌlād·ər }

piezoelectric resonator *See* crystal resonator. { pēˌā·zō·ə'lek·trik 'rez·ənˌād·ər }

piezoelectric semiconductor [SOLID STATE] A semiconductor exhibiting the piezoelectric effect, such as quartz, Rochelle salt, and barium titanate. { pēˌā·zō·ə'lek·trik 'sem·i·kənˌdək·tər }

piezoelectric transducer [ELECTR] A piezoelectric crystal used as a transducer, either to convert mechanical or acoustical signals to electric signals, as in a microphone, or vice versa, as in ultrasonic metal inspection. { pēˌā·zō·ə'lek·trik tranz'dü·sər }

piezojunction effect [ELECTR] A change in the current-voltage characteristic of a *pn* junction that is produced by a mechanical stress. { pēˌā·zō'jəŋk·shən iˌfekt }

piezoresistive microphone [ENG ACOUS] A microphone in which a piezoresistive material is deposited on the edges of a membrane, and variations in the resistance of this material resulting from motion of the membrane are sensed, typically in a Wheatstone bridge. { pēˌā·zō·riˌzis·tiv 'mī·krəˌfōn }

pi filter [ELECTR] A filter that has a series element and two parallel elements connected in the shape of the Greek letter pi (π). { 'pī ˌfil·tər }

pig [ELECTR] **1.** An ion source based on the same principle as the Philips ionization gage. **2.** See Philips ionization gage. { pig }

piggyback board [ELECTR] A small printed circuit board that is mounted on a larger board to provide additional circuitry. { 'pig·ēˌbak ˌbōrd }

piggyback twistor [ELECTR] Electrically alterable nondestructive-readout storage device that uses a thin narrow tape of magnetic material wound spirally around a fine copper conductor to store information; another similar tape is wrapped on top of the first, piggyback fashion, to sense the stored information; a binary digit or bit is stored at the intersection of a copper strap and a pair of these twistor wires. { 'pig·ēˌbak 'twis·tər }

pigtail [ELEC] A short, flexible wire, usually stranded or braided, used between a stationary terminal and a terminal having a limited range of motion, as in relay armatures. { 'pigˌtāl }

pigtail splice [ELEC] A splice made by twisting together the bared ends of parallel conductors. { 'pigˌtāl 'splīs }

pileup [ELECTR] A set of moving and fixed contacts, insulated from each other, formed as a unit for incorporation in a relay or switch. Also known as stack. { 'pīlˌəp }

pill [ELECTROMAG] A microwave stripline termination. { pil }

pillbox antenna [ELECTROMAG] Cylindrical parabolic reflector enclosed by two plates perpendicular to the cylinder, spaced to permit the propagation of only one mode in the desired direction of polarization. { 'pilˌbäks an'ten·ə }

pilot [COMMUN] **1.** In a transmission system, a signal wave, usually single frequency, transmitted over the system to indicate or control its characteristics. **2.** Instructions, in tape relay, appearing in routing line, relative to the transmission or handling of that message. [COMPUT SCI] A model of a computer system designed to test its design, logic, and data flow under operating conditions. { 'pī·lət }

PILOT [COMPUT SCI] A programming language designed for applications to computer-aided instruction and the question-and-answer type of interaction that occurs in that environment. { 'pī·lət }

pilot cell [ELEC] Selected cell of a storage battery whose temperature, voltage, and specific gravity are assumed to indicate the condition of the entire battery. { 'pī·lət ˌsel }

pilot lamp [ELEC] A small lamp used to indicate that a circuit is energized. Also known as pilot light. ['pī·lət ,lamp]

pilot light *See* pilot lamp. ['pī·lət ,līt]

pilot motor [ELEC] A small motor used in the automatic control of an electric current. ['pī·lət ,mōd·ər]

pilot relaying [ELEC] A system for protecting transmission consisting of protective relays at line terminals and a communication channel between relays which is used by the relays to determine if a fault is within the protected line section, in which case all terminals are tripped simultaneously at high speed, or outside it, in which case tripping is blocked. ['pī·lət rē,lā·iŋ]

pilot system [COMPUT SCI] A system for evaluating new procedures for handling data in which a sample that is representative of the data to be handled is processed. ['pī·lət ,sis·təm]

pilot test [COMPUT SCI] A test of a computer system under operating conditions and in the environment for which the system was designed. ['pī·lət ,test]

pilot tone [COMMUN] Single frequency transmitted over a channel to operate an alarm or automatic control. ['pī·lət ,tōn]

pilot wire regulator [CONT SYS] Automatic device for controlling adjustable gains or losses associated with transmission circuits to compensate for transmission changes caused by temperature variations, the control usually depending upon the resistance of a conductor or pilot wire having substantially the same temperature conditions as the conductors of the circuits being regulated. ['pī·lət ¦wīr 'reg·yə,lād·ər]

PIM *See* personal information manager. [¦pē ¦ī'em *or* pim]

pi mode [ELECTR] Of a magnetron, the mode of operation for which the phases of the fields of successive anode openings facing the interaction space differ by pi radians. ['pī ,mōd]

pin [ELECTR] A terminal on an electron tube, semiconductor, integrated circuit, plug, or connector. Also known as base pin; prong. [pin]

pinch effect [ELEC] Manifestation of the magnetic self-attraction of parallel electric currents, such as constriction of ionized gas in a discharge tube, or constriction of molten metal through which a large current is flowing. Also known as cylindrical pinch; magnetic pinch; rheostriction. ['pinch i,fekt]

pinch-off voltage [ELECTR] Of a field-effect transistor, the voltage at which the current flow between source and drain is blocked because the channel between these electrodes is completely depleted. ['pinch,ȯf ,vōl·tij]

pinch resistor [ELECTR] A silicon integrated-circuit resistor produced by diffusing an *n*-type layer over a *p*-type resistor; this narrows or pinches the resistive channel, thereby increasing the resistance value. ['pinch ri'zis·tər]

pinch roller [ELECTR] A small, freely turning wheel that presses the magnetic tape against the capstan in order to move the tape. ['pinch ,rō·lər]

pincushion distortion [ELECTR] Distortion in which all four sides of a video image are concave (curving inward). ['pin,kůsh·ən di,stór·shən]

pin diode [ELECTR] A diode consisting of a silicon wafer containing nearly equal *p*-type and *n*-type impurities, with additional *p*-type impurities diffused from one side and additional *n*-type impurities from the other side; this leaves a lightly doped intrinsic layer in the middle, to act as a dielectric barrier between the *n*-type and *p*-type regions. Also known as power diode. ['pin 'dī,ōd]

pine-tree array [ELECTROMAG] Array of dipole antennas aligned in a vertical plane known as the radiating curtain, behind which is a parallel array of dipole antennas forming a reflecting curtain. ['pīn ,trē ə,rā]

pi network [ELEC] An electrical network which has three impedance branches connected in series to form a closed circuit, with the three junction points forming an output terminal, an input terminal, and a common output and input terminal. ['pī ,net,wərk]

pin-feed printer [COMPUT SCI] A computer printer in which the paper is aligned and advanced by protrusions on two wheels which engage evenly spaced holes along the edges of the paper. Also known as tractor-feed printer. ['pin ¦fēd 'print·ər]

ping [ELECTR] A sonic or ultrasonic pulse sent out by an echo-ranging sonar. [piŋ]

pinger [ENG ACOUS] A battery-powered, low-energy source for an echo sounder. ['piŋ·ər]

ping-pong [COMMUN] To switch a transmission so that it travels in the opposite direction. [COMPUT SCI] The programming technique of using two magnetic tape units for multiple reel files and switching automatically between the two units until the complete file is processed. ['piŋ,päŋ]

pin jack [ELEC] Single conductor jack having an opening for the insertion of a plug of very small diameter. ['pin ,jak]

pin junction [ELECTR] A semiconductor device having three regions: *p*-type impurity, intrinsic (electrically pure), and *n*-type impurity. ['pin ,jəŋk·shən]

pinout [ELECTR] A graphic or text description of the function of electronic signals transmitted through each pin and receptacle in a connector. ['pin,aůt]

PIOCS [COMPUT SCI] An extension of the hardware, constituting an interface between programs and data channels; opposed to LIOCS, logical input/output control system. Derived from physical input/output control system. ['pī,äks]

pip *See* blip. [pip]

pipe [COMPUT SCI] Any software-controlled technique for transfering data from one program or task to another during processing. [pīp]

pipelining [COMPUT SCI] A procedure for processing instructions in a computer program more rapidly, in which each instruction is divided into numerous small stages, and a population of instructions are in various stages at any given time. ['pīp,līn·iŋ]

pipe-to-soil potential [ELEC] The voltage potential (emf) generated between a buried pipe and its surrounding soil, the result of electrolytic action and a cause of electrolytic corrosion of the pipe. { 'pīp tə ¦sȯil pə,ten·chəl }

pi point [ELEC] Frequency at which the insertion phase shift of an electric structure is 180° or an integral multiple of 180°. { 'pī ,pȯint }

pi section filter [ELEC] An electric filter made of several pi networks connected in series. { 'pī ,sek·shən ,fil·tər }

piston [ELECTROMAG] A sliding metal cylinder used in waveguides and cavities for tuning purposes or for reflecting essentially all of the incident energy. Also known as plunger; waveguide plunger. { 'pis·tən }

piston attenuator [ELECTROMAG] A microwave attenuator inserted in a waveguide to introduce an amount of attenuation that can be varied by moving an output coupling device along its longitudinal axis. { 'pis·tən ə'ten·yə,wād·ər }

pitch [COMPUT SCI] The distance between the centerlines of adjacent rows of hole positions in punched paper tape. { pich }

pitch-row [COMPUT SCI] The distance between two adjacent holes in a paper tape. { 'pich ,rō }

pi-T transformation *See* Y-delta transformation. { ¦pī 'tē ,tranz·fər,mā·shən }

pixel [COMPUT SCI] The smallest part of an electronically coded picture image. [ELECTR] The smallest addressable element in an electronic display; a short form for picture element. Also known as pel. { pik'sel }

PL/1 [COMPUT SCI] A multipurpose programming language, developed by IBM for the Model 360 systems, which can be used for both commercial and scientific applications. { ¦pē¦el'wən }

PLA *See* programmed logic array.

placeholder [COMPUT SCI] A section of computer storage reserved for information that will be provided later. { 'plās,hōl·dər }

plaintext [COMMUN] The form of a message in which it can be generally understood, before it has been transformed by a code or cipher into a form in which it can be read only by those privy to the secrets of the cipher. [COMPUT SCI] Data that are to be encrypted. { 'plān,tekst }

plain vanilla *See* vanilla. { 'plān və'nil·ə }

planar area [COMPUT SCI] In computer graphics, an object with boundaries, such as a circle or polygon. { 'plān·ər ,er·ē·ə }

planar array [ELECTR] An array of ultrasonic transducers that can be mounted in a single plane or sheet, to permit closer conformation with the hull design of a sonar-carrying ship. { 'plā·nər ə¦rā }

planar-array antenna [ELECTROMAG] An array antenna in which the centers of the radiating elements are all in the same plane. { 'plā·nər ə¦rā an'ten·ə }

planar ceramic tube [ELECTR] Electron tube having parallel planar electrodes and a ceramic envelope. { 'plā·nər sə¦ram·ik 'tüb }

planar device [ELECTR] A semiconductor device having planar electrodes in parallel planes, made by alternate diffusion of *p*- and *n*-type impurities into a substrate. { 'plā·nər di,vīs }

planar diode [ELECTR] A diode having planar electrodes in parallel planes. { 'plā·nər 'dī,ōd }

planar photodiode [ELECTR] A vacuum photodiode consisting simply of a photocathode and an anode; light enters through a window sealed into the base, behind the photocathode. { 'plā·nər ¦fōd·ō'dī,ōd }

planar process [ENG] A silicon-transistor manufacturing process in which a fractional-micrometer-thick oxide layer is grown on a silicon substrate; a series of etching and diffusion steps is then used to produce the transistor inside the silicon substrate. { 'plā·nər ,prä·səs }

planar transistor [ELECTR] A transistor constructed by an etching and diffusion technique in which the junction is never exposed during processing, and the junctions reach the surface in one plane; characterized by very low leakage current and relatively high gain. { 'plā·nər tran'zis·tər }

plane [ELECTR] Screen of magnetic cores; planes are combined to form stacks. { plān }

plane earth [ELECTROMAG] Earth that is considered to be a plane surface as used in ground-wave calculations. { 'plān ,ərth }

plane-earth attenuation [ELECTROMAG] Attenuation of an electromagnetic wave over an imperfectly conducting plane earth in excess of that over a perfectly conducting plane. { 'plān ,ərth ə,ten·yə'wā·shən }

plane of polarization [ELECTROMAG] Plane containing the electric vector and the direction of propagation of electromagnetic wave. { 'plān əv ,pō·lə·rə'zā·shən }

plane polarization *See* linear polarization. { 'plān ,pō·lə·rə'zā·shən }

plane-polarized wave [ELECTROMAG] An electromagnetic wave whose electric field vector at all times lies in a fixed plane that contains the direction of propagation through a homogeneous isotropic medium. { 'plān ¦pō·lə,rīzd ,wāv }

plane reflector *See* passive reflector. { 'plān ri ¦flek·tər }

planetary wave *See* long wave. { 'plan·ə,ter·ē 'wāv }

planigraphy *See* sectional radiography. { plə 'nig·rə·fē }

planoconvex spotlight [ELEC] A light that can be used as a sharply defined spotlight or for soft-edged lighting; ranges in power from 100 to 2000 watts. { ¦plā·nō'kän,veks 'spät,līt }

plan position indicator [ELECTR] A radar display in which echoes from various targets appear as bright spots at the same locations as they would on a circular map of the area being scanned, the radar antenna being at the center of the map. Variations of the plan position indicator format include limited-sector display with the radar location offset from the center appropriately, the orientation to true or magnetic north or the radar-vehicle heading at the top, and so on. Abbreviated PPI. { 'plan pə'zish·ən 'in·də,kād·ər }

plan position indicator repeater [ELECTR] Unit which repeats a plan position indicator (PPI)

at a location remote from the radar console. Also known as remote plan position indicator. ['plan pə'zish·ən 'in·də,kād·ər ri,pēd·ər]

plant [COMPUT SCI] To place a number or instruction that has been generated in the course of a computer program in a storage location where it will be used or obeyed at a later stage of the program. [plant]

Plante cell [ELEC] A type of lead-acid cell in which the active material is formed on the plates by electrochemical means during repeated charging and discharging, instead of being applied as a prepared paste. [plän'tā ,sel]

plant factor [ELEC] The ratio of the average power load of an electric power plant to its rated capacity. Also known as capacity factor. ['plant ,fak·tər]

plasma cathode [ELECTR] A cathode in which the source of electrons is a gas plasma rather than a solid. ['plaz·mə 'kath,ōd]

plasma diode [ELECTR] A diode used for converting heat directly into electricity; it consists of two closely spaced electrodes serving as cathode and anode, mounted in an envelope in which a low-pressure cesium vapor fills the interelectrode space; heat is applied to the cathode, causing emission of electrons. ['plaz·mə 'dī,ōd]

plasma display [ELECTR] A display in which sets of parallel conductors at right angles to each other are deposited on glass plates, with the very small space between the plates filled with a gas; each intersection of two conductors defines a single cell that can be energized to produce a gas discharge forming one element of a dot-matrix display. ['plaz·mə di'splā]

plasma etching [ELECTR] A method of forming integrated-circuit patterns on a surface, in which charged species in a plasma formed above a masked surface are directed to impact the nonmasked regions of the surface and knock out substrate atoms. Also known as dry plasma etching. ['plaz·mə 'ech·iŋ]

plasma generator [ELECTR] Any device that produces a high-velocity plasma jet, such as a plasma accelerator, engine, oscillator, or torch. ['plaz·mə 'jen·ə,rād·ər]

plasma gun [ELECTR] A machine, such as an electric-arc chamber, that will generate very high heat fluxes to convert neutral gases into plasma. [ELECTROMAG] An electromagnetic device which creates and accelerates bursts of plasma. ['plaz·mə ,gən]

plasma sheath [ELECTR] An envelope of ionized gas that surrounds a spacecraft or other body moving through an atmosphere at hypersonic velocities; affects transmission, reception, and diffraction of radio waves. ['plaz·mə ,shēth]

plasmatron [ELECTR] A gas-discharge tube in which independently generated plasma serves as a conductor between a hot cathode and an anode; the anode current is modulated by varying either the conductivity or the effective cross section of the plasma. ['plaz·mə,trän]

plastic film capacitor [ELEC] A capacitor constructed by stacking, or forming into a roll, alternate layers of foil and a dielectric which consists of a plastic, such as polystyrene or Mylar, either alone or as a laminate with paper. ['plas·tik ¦film kə'pas·əd·ər]

plastic plate [ELECTR] A plate of plastic dielectric material used as a base for a semiconductor device. ['plas·tik 'plāt]

plate [ELEC] **1.** One of the conducting surfaces in a capacitor. **2.** One of the electrodes in a storage battery. [ELECTR] *See* anode. [plāt]

plateau [ELECTR] The portion of the plateau characteristic of a counter tube in which the counting rate is substantially independent of the applied voltage. [pla'tō]

plateau characteristic [ELECTR] The relation between counting rate and voltage for a counter tube when radiation is constant, showing a plateau after the rise from the starting voltage to the Geiger threshold. Also known as counting rate-voltage characteristic. [pla'tō ,kar·ik·tə'ris·tik]

plate circuit *See* anode circuit. ['plāt ¦sər·kət]

plate-circuit detector *See* anode-circuit detector. ['plāt ¦sər·kət di,tek·tər]

plate current *See* anode current. ['plāt ,kə·rənt]

plated circuit [ELECTR] A printed circuit produced by electrodeposition of a conductive pattern on an insulating base. Also known as plated printed circuit. ['plād·əd 'sər·kət]

plate detector *See* anode detector. ['plāt di ,tek·tər]

plate dissipation *See* anode dissipation. ['plāt ,dis·ə,pā·shən]

plated printed circuit *See* plated circuit. ['plād·əd 'print·əd 'sər·kət]

plated wire memory [COMPUT SCI] A nonvolatile magnetic memory utilizing small zones of thin films plated on wires; such memories are characterized by very fast access and nondestructive readout. ['plād·əd ¦wīr 'mem·rē]

plate efficiency *See* anode efficiency. ['plāt i ,fish·ən·sē]

plate impedance *See* anode impedance. ['plāt im,pēd·əns]

plate input power *See* anode input power. ['plāt 'in,pút ,paù·ər]

plate-load impedance *See* anode impedance. ['plāt ,lōd im,pēd·əns]

plate modulation *See* anode modulation. ['plāt ,mäj·ə,lā·shən]

plate neutralization *See* anode neutralization. ['plāt ,nü·trə·lə,zā·shən]

plate pulse modulation *See* anode pulse modulation. ['plāt 'pəls ,mäj·ə,lā·shən]

plate resistance *See* anode resistance. ['plāt ri ,zis·təns]

plate saturation *See* anode saturation. ['plāt ,sach·ə,rā·shən]

platform [COMPUT SCI] The hardware system and the system software used by a computer program. ['plat,fȯrm]

platinotron [ELECTR] A microwave tube that may be used as a high-power saturated amplifier or

oscillator in pulsed radar applications; requires permanent magnet just as does a magnetron. [plə'tin·ə,trän]

platter [COMPUT SCI] One of the disks in a hard-disk drive or disk pack. ['plad·ər]

playback [ENG ACOUS] Reproduction of a sound recording. ['plā,bak]

playback head [ELECTR] A head that converts a changing magnetic field on a moving magnetic tape into corresponding electric signals. Also known as reproduce head. ['plā,bak ,hed]

playback robot [CONT SYS] A robot that repeats the same sequence of motions in all its operations, and is first instructed by an operator who puts it through this sequence. ['plā,bak 'rō ,bät]

pliotron [ELECTR] Any hot-cathode vacuum tube having one or more grids. ['plī·ə,trän]

PLL *See* phase-locked loop.

plug [ELEC] The half of a connector that is normally movable and is generally attached to a cable or removable subassembly; inserted in a jack, outlet, receptacle, or socket. [pləg]

plug adapter lamp holder [ELEC] A device that can be inserted in a lamp holder to act as a lamp holder and one or more receptacles. Also known as current tap. ['pləg ə,dap·tər 'lamp ,hōld·ər]

plugboard *See* control panel. ['pləg,bōrd]

plugboard chart *See* plugging chart. ['pləg,bōrd ,chärt]

plug-compatible hardware [COMPUT SCI] A piece of equipment which can be immediately connected to a computer manufactured by another company. ['pləg kəm,pad·ə·bəl 'härd·wer]

plug fuse [ELEC] A fuse designed for use in a standard screw-base lamp socket. ['pləg ,fyüz]

plugging [ELEC] Braking an electric motor by reversing its connections, so it tends to turn in the opposite direction; the circuit is opened automatically when the motor stops, so the motor does not actually reverse. ['pləg·iŋ]

plugging chart [COMPUT SCI] A printed chart of the sockets in a plugboard on which may be shown the jacks or wires connecting these sockets. Also known as plugboard chart. ['pləg·iŋ ,chärt]

plug-in [COMPUT SCI] A small software application that extends the capabilities (such as multimedia, audio, or video) of a browser. ['pləg ,in]

plug-in unit [ELEC] A component or subassembly having plug-in terminals so all connections can be made simultaneously by pushing the unit into a suitable socket. ['pləg·in ,yü·nət]

plug program patching [COMPUT SCI] A relatively small auxiliary plugboard patched with a specific variation of a portion of a program and designed to be plugged into a relatively larger plugboard patched with the main program. ['pləg 'prō ,gram ,pach·iŋ]

plug-to-plug compatibility [COMPUT SCI] Property of a peripheral device that can be made to operate with a computer merely by attachment of a plug or a relatively small number of cables. ['pləg tə 'pləg kəm,pad·ə'bil·əd·ē]

plunger *See* piston. ['plən·jər]

plus-90 orientation [COMPUT SCI] In optical character recognition, that determinate position which indicates that the line elements of an inputted source document appear perpendicular with the leading edge of the optical reader. [¦pləs 'nīn·tē ,ōr·ē·ən,tā·shən]

plus zone [COMPUT SCI] The bit positions in a computer code which represent the algebraic plus sign. ['pləs ,zōn]

PM *See* phase modulation.

PMLCD *See* supertwisted nematic liquid-crystal display.

PMOS [ELECTR] Metal-oxide semiconductors that are made on *n*-type substrates, and whose active carriers are holes that migrate between *p*-type source and drain contacts. Derived from *p*-channel metal-oxide semiconductor. ['pē ,mós]

PMS notation [COMPUT SCI] A notation that provides a clear, concise description of the physical structure of computer systems, and that contains only a few primitive components, namely symbols for memory, link, switch, data operation, control unit, and transducer. Acronym for processor-memory-switch notation. [¦pē ¦em¦es nō'tā·shən]

PN code *See* pseudorandom noise code. [¦pē'en 'kōd]

pneumatic transmission lag [ELEC] The time delay in a pneumatic transmission line between the generation of an impulse at one end and the resultant reaction at the other end. [nü'mad·ik ¦tranz,mish·ən ,lag]

pn hook transistor *See* hook collector transistor. [¦pē¦en 'hůk tran,zis·tər]

pnip transistor [ELECTR] An intrinsic junction transistor in which the intrinsic region is sandwiched between the *n*-type base and the *p*-type collector. [¦pē,en,ī¦pē tran,zis·tər]

pn junction [ELECTR] The interface between two regions in a semiconductor crystal which have been treated so that one is a *p*-type semiconductor and the other is an *n*-type semiconductor; it contains a permanent dipole charge layer. [¦pē ¦en ,jəŋk·shən]

pnpn diode [ELECTR] A semiconductor device consisting of four alternate layers of *p*-type and *n*-type semiconductor material, with terminal connections to the two outer layers. Also known as *npnp* diode. [¦pē¦en¦pē¦en ,dī,ōd]

pnpn transistor *See npnp* transistor. [¦pē¦en¦pē ¦en tran,zis·tər]

pnp transistor [ELECTR] A junction transistor having an *n*-type base between a *p*-type emitter and a *p*-type collector. [¦pē¦en¦pē tran,zis·tər]

Pockels readout optical modulator [ELECTR] A device for storing data in the form of images; it consists of bismuth silicon oxide crystal

coated with an insulating layer of parylene and transparent electrodes evaporated on the surfaces; a blue laser is used for writing and a red laser is used for nondestructive readout or processing. Abbreviated PROM. { 'päk·əlz ¦rēd ¦aůt ¦äp·tə·kal 'mäl·ə,lād·ər }

pocket |COMPUT SCI| One of the several receptacles into which punched cards are fed by a card sorter. { 'päk·ət }

Poggendorff's first method *See* constant-current dc potentiometer. { 'päg·ən,dȯrfs 'first ,meth·əd }

Poggendorff's second method *See* constant-resistance dc potentiometer. { 'päg·ən,dȯrfs 'sek·ənd ,meth·əd }

point contact |ELECTR| A contact between a specially prepared semiconductor surface and a metal point, usually maintained by mechanical pressure but sometimes welded or bonded. { 'pȯint 'kän,takt }

point-contact diode |ELECTR| A semiconductor rectifier that uses the barrier formed between a specially prepared semiconductor surface and a metal point to produce the rectifying action. { 'pȯint ¦kän,takt ,dī,ōd }

point-contact silicon cell |ELECTR| A type of solar cell whose efficiency is enhanced by a combination of tiny doped-silicon dots scattered across the lower surface of the silicon crystal and fine aluminum threads that penetrate the silicon layer to collect current from each point. { 'pȯint ¦kän ,takt 'sil·ə·kən ,sel }

point-contact transistor |ELECTR| A transistor having a base electrode and two or more point contacts located near each other on the surface of an *n*-type semiconductor. { 'pȯint ¦kän,takt tran,zis·tər }

pointer |COMPUT SCI| The part of an instruction which contains the address of the next record to be accessed. { 'pȯint·ər }

pointing device |COMPUT SCI| A handheld device, such as a mouse, puck, or stylus, that controls a position indicator on a display screen. Also known as pick device. { 'pȯint·iŋ di,vīs }

pointing stick |COMPUT SCI| A small rubberized device located in the center of a computer keyboard, which is moved with a finger tip to position a pointer. { 'pȯint·iŋ ,stik }

point jammer |ELECTR| Any electronic jammer directed against a specific enemy installation operating on a specific frequency. { 'pȯint ,jam·ər }

point-junction transistor |ELECTR| Transistor having a base electrode and both point-contact and junction electrodes. { 'pȯint ,jəŋk·shən tran,zis·tər }

point-mode display |COMPUT SCI| A method of representing information in the form of dots on the face of a cathode-ray tube. { 'pȯint ,mōd di ,splā }

point-of-origin system |COMPUT SCI| A computer system in which data collection occurs at the point where the data are actually created, as in a point-of-sale terminal. { ¦pȯint əv 'är·ə·jən ,sis·təm }

point-of-sale terminal |COMPUT SCI| A computer-connected terminal used in place of a cash register in a store, for customer checkout and such added functions as recording inventory data, transferring funds from the customer's bank account to the merchant's bank account, and checking credit on charged or charge-card purchases; the terminals can be modified for many nonmerchandising applications, such as checkout of books in libraries. Abbreviated POS terminal. { 'pȯint əv ¦sāl 'tərm·ən·əl }

point projection electron microscope |ELECTR| An electron microscope in which a real or virtual point source of electrons produces a highly magnified shadow. { ¦pȯint prə¦jek·shən i¦lek ,trän 'mī·krə,skōp }

point-source light |ELEC| A special lamp in which the radiating element is concentrated in a small physical area. { 'pȯint ,sȯrs ,līt }

point target |ELECTROMAG| In radar, an object which returns a target signal by reflection from a relatively simple discrete surface; such targets are ships, aircraft, projectiles, missiles, and buildings. { 'pȯint ,tär·gət }

point-to-point communication |COMMUN| Radio communication between two fixed stations. { 'pȯint tə 'pȯint kə,myü·nə'kā·shən }

point-to-point programming |CONT SYS| A method of programming a robot in which each major change in the robot's path of motion is recorded and stored for later use. { ¦pȯint tə ¦pȯint 'prō,gram·iŋ }

Point-to-Point Protocol |COMMUN| A standard governing dial-up connections of computers to the Internet via a telephone modem. Abbreviated PPP. { ¦pȯin·tü ¦pȯint 'prōd·ə,kȯl }

point transposition |ELEC| Transposition, usually in an open-wire line, which is executed within a distance comparable to the wire separation, without material distortion of the normal wire configuration outside this distance. { 'pȯint ,tranz·pə,zish·ən }

poison |ELECTR| A material which reduces the emission of electrons from the surface of a cathode. { 'pȯiz·ən }

poke |COMPUT SCI| An instruction that causes a value in a storage location in a microcomputer's main storage to be replaced. { pōk }

polar-coordinate navigation system |NAV| A system in which one or more signals are emitted from a facility (or co-located facilities) to produce simultaneous indication of bearing and distance. { 'pō·lər kō¦ȯrd·ən·ət ,nav·ə'gā·shən ,sis·təm }

polarity |COMMUN| **1.** The direction in which a direct current flows, in a teletypewriter system. **2.** The sense of the potential of a portion of a video signal representing a dark area of a scene relative to the potential of a portion of the signal representing a light area. { pə'lar·əd·ē }

polarity effect |ELECTR| An effect for which the breakdown voltage across a vacuum separating two electrodes, one of which is pointed, is much higher when the pointed electrode is the anode. { pə'lar·əd·ē i,fekt }

polarizability [ELEC] The electric dipole moment induced in a system, such as an atom or molecule, by an electric field of unit strength. { ˌpō·lə,rīz·ə'bil·əd·ē }

polarizability catastrophe [ELEC] According to a theory using the Lorentz field concept, the phenomenon where, at a certain temperature, the dielectric constant of a material becomes infinite. { ˌpō·lə,rīz·ə'bil·əd·ē ka'tas·trə·fē }

polarization [ELEC] **1.** The process of producing a relative displacement of positive and negative bound charges in a body by applying an electric field. **2.** A vector quantity equal to the electric dipole moment per unit volume of a material. Also known as dielectric polarization; electric polarization. **3.** A chemical change occurring in dry cells during use, increasing the internal resistance of the cell and shortening its useful life. { ˌpō·lə·rə'zā·shən }

polarization charge *See* bound charge. { ˌpō·lə·rə'zā·shən ˌchärj }

polarization diversity [COMMUN] A method of transmission and reception used to minimize the effects of selective fading of the horizontal and vertical components of a radio signal; it is usually accomplished through the use of separate vertically and horizontally polarized receiving antennas. { ˌpō·lə·rə'zā·shən də'ver·səd·ē }

polarization division multiple access [COMMUN] A technique for allowing multiple users at geographically dispersed locations to gain access to a shared communications channel by assigning them electric fields of different polarization. { ˌpō·lə·rə¦zā·shən də,vizh·ən ¦məl·tə·pəl 'ak,ses }

polarization division multiplexing [COMMUN] The sharing of a communications channel among multiple users by assigning them electric fields of different polarization. { ˌpō·lə·rə¦zā·shən di ˌvizh·ən 'məl·tə,pleks·iŋ }

polarization fading [COMMUN] Fading as the result of changes in the direction of polarization in one or more of the propagation paths of waves arriving at a receiving point. { ˌpō·lə·rə'zā·shən ˌfād·iŋ }

polarized electrolytic capacitor [ELEC] An electrolytic capacitor in which the dielectric film is formed adjacent to only one metal electrode; the impedance to the flow of current is then greater in one direction than in the other. { 'pō·lə,rīzd i¦lek·trə¦lid·ik kə'pas·əd·ər }

polarized electromagnetic radiation [ELECTROMAG] Electromagnetic radiation in which the direction of the electric field vector is not random. { 'pō·lə,rīzd i¦lek·trō·mag¦ned·ik ˌrād·ē'ā·shən }

polarized ion source [ELECTR] A device that generates ion beams in such a manner that the spins of the ions are aligned in some direction. { 'pō·lə,rīzd 'ī,ən ˌsȯrs }

polarized meter [ENG] A meter having a zero-center scale, with the direction of deflection of the pointer depending on the polarity of the voltage or the direction of the current being measured. { 'pō·lə,rīzd 'mēd·ər }

polarized plug [ELEC] A plug that can be inserted in its receptacle only when in a predetermined position. { 'pō·lə,rīzd 'pləg }

polarized receptacle [ELEC] A receptacle designed for use with a polarized plug, to ensure that the grounded side of an alternating-current line or the positive side of a direct-current line is always connected to the same terminal on a piece of equipment. { 'pō·lə,rīzd ri'sep·tə·kəl }

polarized relay [ELEC] Relay in which the movement of the armature depends upon the direction of the current in the circuit controlling the armature. Also known as polar relay. { 'pō·lə ˌrīzd 'rē,lā }

polar keying [COMMUN] Telegraph signaling in which circuit current flows in one direction for spacing. { 'pō·lər 'kē·iŋ }

polar modulation [COMMUN] Amplitude modulation in which the positive excursions of the carrier are modulated by one signal and the negative excursions by another. { 'pō·lər ˌmäj·ə'lā·shən }

polar radiation pattern [ELECTROMAG] Diagram showing the relative strength of the radiation from an antenna in all directions in a given plane. [ENG ACOUS] Diagram showing the strength of sound waves radiated from a loudspeaker in various directions in a given plane, or a similar response pattern for a microphone. { 'pō·lər ˌrād·ē'ā·shən ˌpad·ərn }

polar relay *See* polarized relay. { 'pō·lər 'rē,lā }

polar resolution [COMPUT SCI] Given the x and y components of a vector, the process of finding the magnitude of the vector and the angle it makes with the x axis. { 'pō·lər ˌrez·ə'lü·shən }

polar transmission [COMMUN] **1.** A method of signaling in teletypewriter transmission in which direct currents flowing in opposite directions represent a mark and a space respectively, and absence of current indicates a no-signal condition. **2.** By extension, any system of signaling that uses three conditions, representing a mark, a space, or a no-signal condition. { 'pō·lər tranz'mish·ən }

pole [ELEC] **1.** One of the electrodes in an electric cell. **2.** An output terminal on a switch; a double-pole switch has two output terminals. { pōl }

pole-positioning [CONT SYS] A design technique used in linear control theory in which many or all of a system's closed-loop poles are positioned as required, by proper choice of a linear state feedback law; if the system is controllable, all of the closed-loop poles can be arbitrarily positioned by this technique. { 'pōl pə,zish·ən·iŋ }

pole-zero configuration [CONT SYS] A plot of the poles and zeros of a transfer function in the complex plane; used to study the stability of a system, its natural motion, its frequency response, and its transient response. { 'pōl ¦zir·ō kən,fig·yə'rā·shən }

poling [ELEC] Adjustment of polarity; specifically, in wire-line practice, the use of transpositions between transposition sections of open wire or between lengths of cable, to cause the residual cross-talk couplings in individual sections or lengths to oppose one another. { 'pōl·iŋ }

Polish notation [COMPUT SCI] **1.** A notation system for digital-computer or calculator logic in which there are no parenthetical expressions and each operator is a binary or unary operator in

the sense that it operates on not more than two operands. Also known as Lukasiewicz notation; parenthesis-free notation. **2.** The version of this notation in which operators precede the operands with which they are associated. Also known as prefix notation. { 'pō·lish nō'tā·shən }

polling [COMMUN] A process that involves interrogating in succession every terminal on a shared communications line to determine which of the terminals require service. { 'pōl·iŋ }

polling list [COMMUN] A roster of transmitting devices sequentially scanned in a time-sharing system. { 'pōl·iŋ ˌlist }

polyalphabetic substitution cipher [COMMUN] A cipher that uses several substitution alphabets in turn. { ˌpäl·ē¦al·fə'bed·ik ˌsəb·stə'tü·shən ˌsī·fər }

polychromatic radiation [ELECTROMAG] Electromagnetic radiation that is spread over a range of frequencies. { ¦päl·i·krō'mad·ik ˌrād·ē'ā·shən }

polyline [COMPUT SCI] In computer graphics, a series of connected line segments and arcs that are treated as a single entity. { 'päl·ē¦līn }

polymer-dispersed liquid-crystal display [ELECTR] An electronic display in which the display elements have micrometer sized-diameter, have nearly spherical liquid-crystal droplets surrounded by a solid polymer, and the display is switched from a white opaque appearance to a clear transparent appearance by applying an electric field. { ¦päl·ə·mərd¦spərst ˌlik·wəd ˌkrist·əl di'splā }

polymorphic system [COMPUT SCI] A computer system that is organized around a central pool of shared software modules which are selected as they are needed for processing. { ¦päl·i¦mȯr·fik 'sis·təm }

polymorphism [COMPUT SCI] A property of object-oriented programming that allows many different types of objects to be treated in a uniform manner by invoking the same operation on each object. { ˌpäl·i'mȯrˌfiz·əm }

polynomial time [COMPUT SCI] The property of the time required to solve a problem on a computer for which there exist constants c and k such that, if the input to the problem can be specified in N bits, the problem can be solved in $c \times N^k$ elementary operations. { ¦päl·ə¦nō·mē·əl 'tīm }

polyphase [ELEC] Having or utilizing two or more phases of an alternating-current power line. { 'päl·i¦fāz }

polyphase circuit [ELEC] Group of alternating-current circuits (usually interconnected) which enter (or leave) a delimited region at more than two points of entry; they are intended to be so energized that, in the steady state, the alternating currents through the points of entry, and the alternating potential differences between them, all have exactly equal periods, but have differences in phase, and may have differences in waveform. { 'päl·i¦fāz 'sər·kət }

polyphase meter [ENG] An instrument which measures some electrical quantity, such as power factor or power, in a polyphase circuit. { 'päl·i ˌfāz 'mēd·ər }

polyphase rectifier [ELECTR] A rectifier which utilizes two or more diodes (usually three), each of which operates during an equal fraction of an alternating-current cycle to achieve an output current which varies less than that in an ordinary half-wave or full-wave rectifier. { 'päl·i ˌfāz 'rek·təˌfī·ər }

polyphase synchronous generator [ELEC] Generator whose alternating-current circuits are so arranged that two or more symmetrical alternating electromotive forces with definite phase relationships are produced at its terminals. { 'päl·i¦fāz 'siŋ·krə·nəs 'jen·əˌrād·ər }

polyphase transformer [ELEC] A transformer with multiple sets of primary and secondary windings on a single core; used in a polyphase circuit. { 'päl·i¦fāz tranz'fȯr·mər }

polyphase wattmeter [ENG] An instrument that measures electric power in a polyphase circuit. { 'päl·i¦fāz 'wät¦mēd·ər }

polyrod antenna [ELECTROMAG] End-fire directional dielectric antenna consisting of a polystyrene rod energized by a section of waveguide. { 'päl·iˌrād an'ten·ə }

polystyrene capacitor [ELEC] A capacitor that uses film polystyrene as a dielectric between rolled strips of metal foil. { ¦päl·i'stīˌrēn kə'pas·əd·ər }

polystyrene dielectric [ELEC] Polystyrene used in applications where its very high resistivity, good dielectric strength, and other electrical properties are important, such as for electrical insulation or in dielectrics. { ¦päl·i'stīˌrēn ¦dī·ə'lek·trik }

polyvalent number [COMPUT SCI] A number, consisting of several figures, used for description, wherein each figure represents one of the characteristics being described. { ¦päl·i'vā·lənt 'nəm·bər }

pool cathode [ELECTR] A cathode at which the principal source of electron emission is a cathode spot on a liquid-metal electrode, usually mercury. { 'pül ˌkathˌōd }

pool-cathode mercury-arc rectifier [ELECTR] A pool tube connected in an electric circuit; its rectifying properties result from the fact that only the mercury-pool cathode, and not the anode, can emit electrons. Also known as mercury-pool rectifier. { 'pül ˌkathˌōd 'mər·kyə·rē ¦ärk 'rek·təˌfī·ər }

pool-cathode tube *See* pool tube. { 'pül ˌkath ˌōd ˌtüb }

Poole-Frenkel effect [ELEC] An increase in the electrical conductivity of insulators and semiconductors in strong electric fields. { ¦pül 'freŋ·kəl iˌfekt }

pool tube [ELECTR] A gas-discharge tube having a mercury-pool cathode. Also known as mercury tube; pool-cathode tube. { 'pül ˌtüb }

pop [COMPUT SCI] To obtain information from the top of a stack and then reset a pointer to the next item in the stack. { päp }

POP *See* Post Office Protocol. { pōp *or* ¦pē¦ō'pē }

popcorn noise [ELECTR] Noise that is produced by erratic jumps of bias current between two

levels at random intervals in operational amplifiers and other semiconductor devices. { 'päp ˌkȯrn }

pop hole *See* pop. { 'päp ˌhōl }

Popov's stability criterion [CONT SYS] A frequency domain stability test for systems consisting of a linear component described by a transfer function preceded by a nonlinear component characterized by an input-output function, with a unity gain feedback loop surrounding the series connection. { pä'pȯfs stə'bil·əd·ē krī ˌtir·ē·ən }

popping [COMPUT SCI] The deletion of the top element of a stack. { 'päp·iŋ }

pop shot *See* pop. { 'päp ˌshät }

populate [COMPUT SCI] To add electronic components, such as memory chips, to a circuit board. { 'päp·yəˌlāt }

population [COMPUT SCI] A collection of records in a data base that share one or more characteristics in common. [ELECTR] The set of electronic components on a printed circuit board. { ˌpäp·yə'lā·shən }

porcelain capacitor [ELEC] A fixed capacitor in which the dielectric is a high grade of porcelain, molecularly fused to alternate layers of fine silver electrodes to form a monolithic unit that requires no case or hermetic seal. { 'pȯrs·lən kə'pas·əd·ər }

port [COMPUT SCI] **1.** An interface between a communications channel and a unit of computer hardware. **2.** To modify an application program, developed to run with a particular operating system, so that it can run with another operating system. **3.** A designation which a program on a client computer uses to specify a server program on a computer in a network. [ELEC] An entrance or exit for a network. [ELECTROMAG] An opening in a waveguide component, through which energy may be fed or withdrawn, or measurements made. { pȯrt }

portability [COMPUT SCI] Property of a computer program that is sufficiently flexible to be easily transferred to run on a computer of a type different from the one for which it was designed. { ˌpȯrd·ə'bil·əd·ē }

portable audio terminal [COMPUT SCI] A lightweight, self-contained computer terminal with a typewriter keyboard, which can be attached to a telephone line by placing the telephone handset in a receptacle in the terminal. { 'pȯrd·ə·bəl 'ȯd·ē·ō ˌtərm·ən·əl }

portable data terminal [COMPUT SCI] A computer terminal that can be carried about by hand to collect data from remote locations and to transfer this data to a computer system. { 'pȯrd·ə·bəl 'dad·ə ˌtər·mən·əl }

portable document format [COMPUT SCI] A computer file format for publishing and distributing electronic documents (text, image, or multimedia) with the same layout, formatting, and font attributes as in the original. The files can be opened and viewed on any computer or operating system; however, special software is required. Abbreviated PDF. { ˌpȯrd·ə·bəl ˌdäk·yə·mənt 'fȯrˌmat }

ported system *See* vented-box system. { 'pȯrd·əd ˌsis·təm }

port expander [COMPUT SCI] Equipment that connects links to several other devices to one port in a computer. { 'pȯrt ikˌspan·dər }

porting [COMPUT SCI] The process of converting software to run on a computer other than the one for which it was originally written. { 'pȯrd·iŋ }

posistor [ELECTR] A thermistor having a large positive resistance-temperature characteristic. { pä'zis·tər }

positional-error constant [CONT SYS] For a stable unity feedback system, the limit of the transfer function as its argument approaches zero. { pə'zish·ən·əl ˌer·ər ˌkän·stənt }

positional notation [MATH] Any of several numeration systems in which a number is represented by a sequence of digits in such a way that the significance of each digit depends on its position in the sequence as well as its numeric value. Also known as notation. { pə'zish·ən·əl nō'tā·shən }

positional parameter [COMPUT SCI] One of a number of parameters in a group, whose significance is determined by its position within the group. { pə'zish·ən·əl pə'ram·əd·ər }

positional servomechanism [CONT SYS] A feedback control system in which the mechanical position (as opposed to velocity) of some object is automatically maintained. { pə'zish·ən·əl ˌsər·vō'mek·əˌniz·əm }

position control [CONT SYS] A type of automatic control in which the input commands are the desired position of a body. { pə'zish·ən kən ˌtrōl }

position indicator [ENG] An electromechanical dead-reckoning computer, either an air-position indicator or a ground-position indicator. { pə'zish·ən ˌin·dəˌkād·ər }

positioning action [CONT SYS] Automatic control action in which there is a predetermined relation between the value of a controlled variable and the position of a final control element. { pə'zish·ən·iŋ ˌak·shən }

positioning time [COMPUT SCI] The time required for a storage medium such as a disk to be positioned and for read/write heads to be properly located so that the desired data can be read or written. { pə'zish·ən·iŋ ˌtīm }

position pulse *See* commutator pulse. { pə 'zish·ən ˌpəls }

position sensor [ENG] A device for measuring a position and converting this measurement into a form convenient for transmission. Also known as position transducer. { pə'zish·ən ˌsen·sər }

position telemetering [ENG] A variation of voltage telemetering in which the system transmits the measurand by positioning a variable resistor or other component in a bridge circuit so as to produce relative magnitudes of electrical quantities or phase relationships. { pə'zish·ən ˌtel·ə'mēd·ə·riŋ }

position transducer *See* position sensor. { pə'zish·ən tranzˌdü·sər }

positive [ELEC] Having fewer electrons than normal, and hence having ability to attract electrons. { 'päz·əd·iv }

positive bias [ELECTR] A bias such that the control grid of an electron tube is positive with respect to the cathode. { 'päz·əd·iv 'bī·əs }

positive charge [ELEC] The type of charge which is possessed by protons in ordinary matter, and which may be produced in a glass object by rubbing with silk. { 'päz·əd·iv 'chärj }

positive column [ELECTR] The luminous glow, often striated, that occurs between the Faraday dark space and the anode in a glow-discharge tube. Also known as positive glow. { 'päz·əd·iv 'käl·əm }

positive electrode *See* anode. { 'päz·əd·iv i'lek ,trōd }

positive feedback [CONT SYS] Feedback in which a portion of the output of a circuit or device is fed back in phase with the input so as to increase the total amplification. Also known as reaction (British usage); regeneration; regenerative feedback; retroaction (British usage). { 'päz·əd·iv 'fēd,bak }

positive glow *See* positive column. { 'päz·əd·iv 'glō }

positive-grid oscillator *See* retarding-field oscillator. { 'päz·əd·iv ¦grid 'äs·ə,lād·ər }

positive-ion sheath [ELECTR] Collection of positive ions on the control grid of a gas-filled triode tube. { 'päz·əd·iv ¦ī,ən ,shēth }

positive logic [ELECTR] Logic circuitry in which the more positive voltage (or current level) represents the 1 state; the less positive level represents the 0 state. { 'päz·əd·iv 'läj·ik }

positive modulation [ELECTR] In an amplitude-modulated analog television system, that form of television modulation in which an increase in brightness corresponds to an increase in transmitted power. { 'päz·əd·iv ,mäj·ə'lā·shən }

positive phase sequence [ELEC] The phase sequence that corresponds to the normal order of phases in a polyphase system. { 'päz·əd·iv ¦fāz ,sē·kwəns }

positive-phase-sequence relay [ELEC] Relay which functions in conformance with the positive-phase-sequence component of the current, voltage, or power of the circuit. { 'päz·əd·iv ,fāz ,sē·kwəns ,rē·lā }

positive ray [ELECTR] A stream of positively charged atoms or molecules, produced by a suitable combination of ionizing agents, accelerating fields, and limiting apertures. { 'päz·əd·iv 'rā }

positive terminal [ELEC] The terminal of a battery or other voltage source toward which electrons flow through the external circuit. { 'päz·əd·iv 'tərm·ən·əl }

positive transmission [COMMUN] Transmission of analog television signals in such a way that an increase in initial light intensity causes an increase in the transmitted power. { 'päz·əd·iv tranz'mish·ən }

positive zero [COMPUT SCI] The zero value reached by counting down from a positive number in the binary system. { 'päz·əd·iv 'zir·ō }

post [COMPUT SCI] To add or update records in a file. { pōst }

postaccelerating electrode *See* intensifier electrode. { ,pōst·ak'sel·ə,rād·iŋ i'lek,trōd }

postacceleration [ELECTR] Acceleration of beam electrons after deflection in an electron-beam tube. Also known as postdeflection acceleration (PDA). { ,pōst·ak,sel·ə'rā·shən }

postdecrementing *See* autodecrement addressing. { ¦pōst'dek·rə,ment·iŋ }

postdeflection accelerating electrode *See* intensifier electrode. { ,pōst·di'flek·shən ak'sel·ə ,rād·iŋ i'lek,trōd }

postdeflection acceleration *See* postacceleration. { ,pōst·di'flek·shən ak'sel·ə,rā·shən }

postedit [COMPUT SCI] To edit the output data of a computer. { 'pōst,ed·ət }

postemphasis *See* deemphasis. { ¦pōst'em·fə·səs }

postequalization *See* deemphasis. { ¦pōst,ē·kwə·lə'zā·shən }

POS terminal *See* point-of-sale terminal. { ¦pē ¦ō'es ,term·ən·əl }

postfix notation *See* reverse Polish notation. { 'pōst,fiks nō'tā·shən }

postincrementing *See* autoincrement addressing. { ¦pōst'in·krə,ment·iŋ }

postindexing [COMPUT SCI] Operation in which the contents of a register indicated by the index bits of an indirect address are added to the indirect address to form the effective address. { pōst'in,dek·siŋ }

posting *See* update. { 'pōst·iŋ }

posting interpreter *See* transfer interpreter. { 'pōst·iŋ in'tər·prəd·ər }

postmortem [COMPUT SCI] Any action taken after an operation is completed to help analyze that operation. { pōst'mȯrd·əm }

postmortem dump [COMPUT SCI] **1.** The printout showing the state of all registers and the contents of main memory, taken after a computer run terminates normally or terminates owing to fault. **2.** The program which generates this printout. { pōst'mȯrd·əm 'dəmp }

postmortem program *See* postmortem routine. { pōst'mȯrd·əm 'prō·grəm }

postmortem routine [COMPUT SCI] A computer routine designed to provide information about the operation of a program after the program is completed. Also known as postmortem program. { pōst'mȯrd·əm rü,tēn }

post office [COMPUT SCI] The software and files in an electronic mail system that receive messages and deliver them to recipients. { 'pōst ,óf·əs }

Post Office Protocol [COMPUT SCI] An Internet standard for delivering e-mail from a server to an e-mail client on a personal computer. Abbreviated POP. { ¦pōst ,óf·əs 'prōd·ə,kül }

postprocessor [COMPUT SCI] A program that converts graphical output data to a form that can be used by computing equipment. { ¦pōst'prä ,ses·ər }

posttuning drift [ELECTR] In a frequency-agile source such as the fast-tuning oscillators used in set-on jammers for electronic warfare equipment,

the increase in frequency brought about by the drop in temperature of the varactor after warm-up time, settling time, and the time when the oscillator has reached a new frequency. Abbreviated PTD. { 'pōs,tün·iŋ 'drift }

pot *See* potentiometer. { pät }

potential *See* electric potential. { pə'ten·chəl }

potential difference [ELEC] Between any two points, the work which must be done against electric forces to move a unit charge from one point to the other. Abbreviated PD. { pə'ten·chəl 'dif·rəns }

potential divider *See* voltage divider. { pə'ten·chəl di'vīd·ər }

potential drop [ELEC] The potential difference between two points in an electric circuit. { pə'ten·chəl 'dräp }

potential gradient [ELEC] Difference in the values of the voltage per unit length along a conductor or through a dielectric. { pə'ten·chəl 'grād·ē·ənt }

potential sputtering [ELECTR] The ejection of mainly neutral atoms from the surface of a solid insulator due to the impact of slow, multiply charged ions whose kinetic energy alone is incapable of initiating sputtering. { pə'ten·chəl ,spad·ə·riŋ }

potential transformer *See* voltage transformer. { pə'ten·chəl tranz'fór·mər }

potential transformer phase angle [ELEC] Angle between the primary voltage vector and the secondary voltage vector reversed; this angle is conveniently considered as positive when the reversed, secondary voltage vector leads the primary voltage vector. { pə'ten·chəl tranz'fór·mər 'fāz ,aŋ·gəl }

potentiometer [ELEC] A resistor having a continuously adjusted sliding contact that is generally mounted on a rotating shaft; used chiefly as a voltage divider. Also known as pot (slang). [ENG] A device for the measurement of an electromotive force by comparison with a known potential difference. { pə,ten·chē'äm·əd·ər }

potentiometric controller [CONT SYS] A controller that operates on the null balance principle, in which an error signal is produced by balancing the sensor signal against a set-point voltage in the input circuit; the error signal is amplified for use in keeping the load at a desired temperature or other parameter. { pə¦ten·chē·ə¦me·trik kən'trōl·ər }

potentiometric electrode [ELEC] An electrode that produces a voltage logarithmically dependent on the concentration of a selected ionic substance. { pə,ten·chē·ə¦me·trik i'lek,trōd }

potentiometry [ELEC] Use of a potentiometer to measure electromotive forces, and the applications of such measurements. { pə,ten·chē 'äm·ə·trē }

Potier diagram [ELEC] Vector diagram showing the voltage and current relations in an alternating-current generator. { pō'tyā ,dī·ə,gram }

potted circuit [ELEC] A pulse-forming network immersed in oil and enclosed in a metal container. { 'päd·əd 'sər·kət }

potted line [ELEC] Pulse-forming network immersed in oil and enclosed in a metal container. { 'päd·əd 'līn }

potting [ELECTR] Process of filling a complete electronic assembly with a thermosetting compound for resistance to shock and vibration, and for exclusion of moisture and corrosive agents. { 'päd·iŋ }

powdered-iron core *See* ferrite core. { ¦paúd·ərd 'ī·ərn 'kór }

power amplification *See* power gain. { 'paú·ər ,am·plə·fə'kā·shən }

power amplifier [ELECTR] The final stage in multistage amplifiers, such as audio amplifiers and radio transmitters, designed to deliver maximum power to the load, rather than maximum voltage gain, for a given percent of distortion. { 'paú·ər ¦am·plə,fī·ər }

power amplifier tube *See* power tube. { 'paú·ər ¦am·plə,fī·ər ,tüb }

power attenuation *See* power loss. { 'paú·ər ə ,ten·yə'wā·shən }

power bandwidth [COMMUN] The frequency range for which half the rated power of an audio amplifier is available at rated distortion. { 'paú·ər ¦band,width }

power check [COMPUT SCI] An automatic suspension of computer operations resulting from a significant fluctuation in internal electric power. { 'paú·ər ,chek }

power circuit [ELEC] The wires that carry current to electric motors and other devices that use electric power. { 'paú·ər ,sər·kət }

power component *See* active component. { 'paú·ər kəm,pō·nənt }

power cord *See* line cord. { 'paú·ər ,kórd }

power-density spectrum *See* frequency spectrum. { 'paú·ər ¦den·səd·ē ,spek·trəm }

power detection [ELECTR] Form of detection in which the power output of the detecting device is used to supply a substantial amount of power directly to a device such as a loudspeaker or recorder. { 'paú·ər di,tek·shən }

power detector [ELECTR] Detector capable of handling strong input signals without appreciable distortion. { 'paú·ər di,tek·tər }

power diode *See* pin diode. { 'paú·ər ,dī,ōd }

power distribution unit [COMPUT SCI] Equipment located in or near a computer room which breaks down electric power from a high-voltage source to appropriate levels for distribution to the central processing unit and peripheral devices. Abbreviated PDU. { 'paú·ər ,di·strə'byü·shən ,yü·nət }

power down [COMPUT SCI] To exit from any running programs and remove floppy- and hard-disk cartridges before switching the computer off. { ¦paú·ər ¦daún }

power factor [ELEC] The ratio of the average (or active) power to the apparent power (root-mean-square voltage times rms current) of an alternating-current circuit. Abbreviated pf. Also known as phase factor. { 'paú·ər ,fak·tər }

power-factor controller [ELECTR] A solid-state electronic device that reduces excessive energy

waste in alternating-current induction motors by holding constant the phase angle between current and voltage. { 'paù·ər ,fak·tər kən ,trōl·ər }

power-factor meter [ENG] A direct-reading instrument for measuring power factor. { 'paù·ər ,fak·tər ,mēd·ər }

power-factor regulator [ELEC] Regulator which functions to maintain the power factor of a line or an apparatus at a predetermined value, or to vary it according to a predetermined plan. { 'paù·ər ,fak·tər ,reg·yə,lād·ər }

power frequency [ELEC] The frequency at which electric power is generated and distributed; in most of the United States it is 60 hertz. { 'paù·ər ,frē·kwən·sē }

power gain [ELECTR] The ratio of the power delivered by a transducer to the power absorbed by the input circuit of the transducer. Also known as power amplification. [ELECTROMAG] An antenna ratio equal to 4π (12.57) times the ratio of the radiation intensity in a given direction to the total power delivered to the antenna. { 'paù·ər ,gān }

power generator [ELEC] A device for producing electric energy, such as an ordinary electric generator or a magnetohydrodynamic, thermionic, or thermoelectric power generator. { 'paù·ər ,jen·ə ,rād·ər }

power level [ELEC] The ratio of the amount of power being transmitted past any point in an electric system to a reference power value; usually expressed in decibels. { 'paù·ər ,lev·əl }

power line [ELEC] Two or more wires conducting electric power from one location to another. Also known as electric power line. { 'paù·ər ,līn }

power-line carrier [ELEC] The use of transmission lines to transmit speech, metering indications, control impulses, and other signals from one station to another, without interfering with the lines' normal function of transmitting power. { 'paù·ər ,līn ,kar·ē·ər }

power-line filter *See* line filter. { 'paù·ər ,līn ,fil·tər }

power-line interference [COMMUN] Interference caused by radiation from high-voltage power lines. { 'paù·ər ,līn ,in·tər,fir·əns }

power-line monitor [ELECTR] A device that continuously observes and records levels of electric power on a power line. { 'paù·ər¦līn 'män·əd·ər }

power loss [ELECTR] The ratio of the power absorbed by the input circuit of a transducer to the power delivered to a specified load; usually expressed in decibels. Also known as power attenuation. { 'paù·ər ,lòs }

power meter *See* electric power meter. { 'paù·ər ,mēd·ər }

power output [ELECTR] The alternating-current power in watts delivered by an amplifier to a load. { 'paù·ər ¦aùt,pùt }

power output tube *See* power tube. { 'paù·ər ¦aùt ,pùt ,tüb }

power pack [ELECTR] Unit for converting power from an alternating- or direct-current supply into an alternating- or direct-current power at voltages suitable for supplying an electronic device. { 'paù·ər ,pak }

power rating [ELEC] The power available at the output terminals of a component or piece of equipment that is operated according to the manufacturer's specifications. { 'paù·ər ,rād·iŋ }

power rectifier [ELEC] A device which converts alternating current to direct current and operates at high power loads. { 'paù·ər 'rek·tə,fī·ər }

power relay [ELEC] Relay that functions at a predetermined value of power; may be an overpower relay, an underpower relay, or a combination of both. { 'paù·ər 'rē,lā }

power resistor [ELEC] A resistor used in electric power systems, ranging in size from 5 watts to many kilowatts, and cooled by air convection, air blast, or water. { 'paù·ər ri,zis·tər }

power semiconductor [ELECTR] A semiconductor device capable of dissipating appreciable power (generally over 1 watt) in normal operation; may handle currents of thousands of amperes or voltages up into thousands of volts, at frequencies up to 10 kilohertz. { 'paù·ər 'sem·i·kən,dək·tər }

power spectrum *See* frequency spectrum. { 'paù·ər ,spek·trəm }

power supply [ELECTR] A source of electrical energy, such as a battery or power line, employed to furnish the tubes and semiconductor devices of an electronic circuit with the proper electric voltages and currents for their operation. Also known as electronic power supply. { 'paù·ər sə ,plī }

power supply circuit [ELEC] An electrical network used to convert alternating current to direct current. { 'paù·ər sə,plī ,sər·kət }

power-supply rejection ratio [ELECTR] The ratio between the gain of an amplifier for difference signals between the input terminals, and the gain for variations of the power-supply voltages. Abbreviated PSRR. { ¦paù·ər sə,plī ri'jek·shən ,rā·shō }

power switch [ELEC] An electric switch which energizes or deenergizes an electric load; ranges from ordinary wall switches to load-break switches and disconnecting switches in power systems operating at voltages of hundreds of thousands of volts. { 'paù·ər ,swich }

power switchboard [ELEC] Part of a switch gear which consists of one or more panels upon which are mounted the switching control, measuring, protective, and regulatory equipment; the panel or panel supports may also carry the main switching and interrupting devices together with their connection. { 'paù·ər 'swich,bōrd }

power switching [ELEC] Switching between supplies of electrical energy at high levels of current and voltage. { 'paù·ər ,swich·iŋ }

power transfer equation [ELEC] An equation for the power flow across a transmission line in terms of the relative magnitudes and phases of the terminal voltages, and the inductive reactance component and resistive component of the line. { ¦paù·ər 'tranz·fər i,kwā·zhən }

power transfer theorem [ELEC] The theorem that, in an electrical network which carries direct or sinusoidal alternating current, the greatest possible power is transferred from one section to another when the impedance of the section that acts as a load is the complex conjugate of the impedance of the section that acts as a source, where both impedances are measured across the pair of terminals at which the power is transferred, with the other part of the network disconnected. { ¦paù·ər 'tranz·fər ¸thir·əm }

power transformer [ELEC] An iron-core transformer having a primary winding that is connected to an alternating-current power line and one or more secondary windings that provide different alternating voltage values. { 'paù·ər tranz¸fór·mər }

power transistor [ELECTR] A junction transistor designed to handle high current and power; used chiefly in audio and switching circuits. { 'paù·ər tran¸zis·tər }

power transmission line [ELEC] The facility in an electric power system used to transfer large amounts of power from one location to a distant location; distinguished from a subtransmission or distribution line by higher voltage, greater power capability, and greater length. Also known as electric main; main (both British usages). { 'paù·ər tranz'mish·ən ¸līn }

power transmission tower [ELEC] A rigid steel tower supporting a high-voltage electric power transmission line, having a large enough spacing between conductors, and between conductors and ground, to prevent corona discharge. { 'paù·ər tranz'mish·ən ¸taù·ər }

power tube [ELECTR] An electron tube capable of handling more current and power than an ordinary voltage-amplifier tube; used in the last stage of an audio-frequency amplifier or in high-power stages of a radio-frequency amplifier. Also known as power amplifier tube; power output tube. { 'paù·ər ¸tüb }

power typing [COMPUT SCI] A word-processing technique that allows the automatic typing of repetitious text, such as appears in a form letter. { 'paù·ər ¸tīp·iŋ }

power up [COMPUT SCI] To check that the computer memory, peripherals, and input/output channels are working properly before the operating system is loaded. { ¦paù·ər ¦əp }

power winding [ELEC] In a saturable reactor, a winding to which is supplied the power to be controlled; commonly the functions of the output and power windings are accomplished by the same winding, which is then termed the output winding. { 'paù·ər ¸wīnd·iŋ }

PPI *See* plan position indicator.

P-picture *See* predicted picture. { 'pē ¸pik·chər }

pp junction [ELECTR] A region of transition between two regions having different properties in *p*-type semiconducting material. { ¦pē¦pē ¸jəŋk·shən }

PPM *See* pulse-position modulation.

PPP *See* Point-to-Point Protocol.

P pulse *See* commutator pulse. { 'pē ¸pəls }

Practical Extraction and Reporting Language [COMPUT SCI] A scripting language often used for creating CGI programs. Abbreviated Perl. { ¦prak·ti·kəl ik¸strak·shən and ri'pórt·iŋ ¸laŋ·gwij }

pragma [COMPUT SCI] A directive inserted into a computer program to prevent the automatic execution of certain error checking and reporting routines which are no longer necessary when the program has been perfected. { 'prag·mə }

pragmatics [COMMUN] The branch of semiotics that treats the relation of symbols to behavior and the meaning received by the listener or reader of a statement. [COMPUT SCI] The fourth and final phase of natural language processing, following contextual analysis, that takes into account the speaker's goal in uttering a particular thought in a particular way in determining what constitutes an appropriate response. { prag'mad·iks }

preamble [COMMUN] The portion of a commercial radiod ata message that is sent first, containing the message number, office of origin, date, and other numerical data not part of the following message text. { 'prē¸am·bəl }

preamplifier [ELECTR] An amplifier whose primary function is to boost the output of a low-level audio-frequency, radio-frequency, or microwave source to an intermediate level so that the signal may be further processed without appreciable degradation of the signal-to-noise ratio of the system. Also known as preliminary amplifier. { prē'am·plə¸fī·ər }

precedence [COMPUT SCI] The order in which operators are processed in a programming language. { 'pres·əd·əns }

precedence relation [COMPUT SCI] A rule stating that, in a given programming language, one of two operators is to be applied before the other in any mathematical expression. { 'pres·əd·əns ri ¸lā·shən }

precipitation attenuation [ELECTROMAG] Loss of radio energy due to the passage through a volume of the atmosphere containing precipitation; part of the energy is lost by scattering, and part by absorption. { prə¸sip·ə'tā·shən ə¸ten·yə'wā·shən }

precipitation clutter suppression [ELECTR] Technique of reducing, by one of the various devices integral to the radar system, clutter caused by rain in the radar range. { prə ¸sip·ə'tā·shən ¦kləd·ər sə¸presh·ən }

precipitation noise [ELECTR] Noise generated in an antenna circuit, generally in the form of a relaxation oscillation, caused by the periodic discharge of the antenna or conductors in the vicinity of the antenna into the atmosphere. { prə¸sip·ə'tā·shən ¸nóiz }

precipitation static [COMMUN] Static interference due to the discharge of large charges built up on an aircraft or other object by rain, sleet, snow, or electrically charged clouds. { prə ¸sip·ə'tā·shən ¸stad·ik }

precipitator *See* electrostatic precipitator. { prə 'sip·ə¸tād·ər }

precision attribute [COMPUT SCI] A set of one or more integers that denotes the number of

symbols used to represent a given number and positional information for determining the base point of the number. { prə'sizh·ən 'a·trə,byüt }

precision-balanced hybrid circuit [ELEC] Circuit used to interconnect a four-wire telephone circuit to a particular two-wire circuit, in which the impedance of the balancing network is adjusted to give a relatively high degree of balance. { prə'sizh·ən ¦bal·ənst 'hī·brəd 'sər·kət }

precision net [ELEC] In a four-wire terminating set or similar device employing a hybrid coil, an artificial line designed and adjusted to provide an accurate balance for the loop and subscribers set or line impedance. { prə'sizh·ən ,net }

precision sweep [ELECTR] Delayed and expanded sweep as in an analog radar display, or similar selection and timing of a digital display, permitting closer examination of received signals of high resolution. { prə'sizh·ən ,swēp }

precompiled module [COMPUT SCI] A standardized subroutine that is separately developed and compiled for use in many different computer programs. { ¦prē·kəm'pīld 'mäj·yül }

precompiler [COMPUT SCI] A computer program that indentifies syntax errors and other problems in a program before it is converted to machine language by a compiler. { ¦prē·kəm'pīl·ər }

preconduction current [ELECTR] Low value of plate current flowing in a thyratron or other grid-controlled gas tube prior to the start of conduction. { ¦prē·kən'dək·shən ,kə·rənt }

predecessor job [COMPUT SCI] A job whose output is used as input to another job, and which must therefore be completed before the second job is started. { 'pred·ə,ses·ər ,jäb }

predefined function [COMPUT SCI] A sequence of instructions that is identified by name in a computer program but is built into the high-level programming language from which the program is complied or is retrieved from somewhere outside the program, such as a subroutine library. { ¦prē·di'fīnd 'fəŋk·shən }

predetection combining [ELECTR] Method used to produce an optimum signal from multiple receivers involved in diversity reception of signals. { ¦prē·di'tek·shən kəm'bīn·iŋ }

predicate [COMPUT SCI] A statement in a computer program that evaluates an expression in order to arrive at a true or false answer. { 'pred·ə ,kāt }

predicted picture [COMMUN] A MPEG-2 picture that is coded with respect to the nearest previous intra-coded picture. This technique is termed forward prediction. Predicted pictures provide more compression than intra-coded pictures and serve as a reference for future predicted pictures or bidirectional pictures. Predicted pictures can propagate coding errors when they (or bidirectional pictures) are predicted from prior predicted pictures where the prediction is flawed. Also known as P-frame; P-picture. { pri'dikt·əd 'pik·chər }

predicted-wave signaling [COMMUN] Communications system in which detection is optimized in the presence of severe noise by using mechanical resonator filters and other circuits in the detector to take advantage of known information on the arrival and completion times of each pulse, as well as on pulse shape, pulse frequency and spectrum, and possible data content. { prə'dik·təd ,wāv 'sig·nəl·iŋ }

predictive coder [COMMUN] Any technique for compressing audio or video signals in which a synthesizer at the receiver is controlled by signal parameters extracted at the transmitter to remake the signal. Also known as predictive encoder. { prə,dik·tiv 'kō·dər }

predictive coding [COMMUN] In data compression, a method of coding information in which a sample value is presented as the error term formed by the difference between the sample and its prediction. { prə¦dik·tiv 'kōd·iŋ }

predictive encoder *See* predictive coder. { prə ,dik·tiv in'kō·dər }

preece [ELEC] A unit of electrical resistivity equal to 10^{13} times the product of 1 ohm and 1 meter. { prēs }

preedit [COMPUT SCI] To edit data before feeding it to a computer. { prē'ed·ət }

preemphasis [ELECTR] A process which increases the magnitude of some frequency components with respect to the magnitude of others to reduce the effects of noise introduced in subsequent parts of the system. { prē'em·fə·səs }

preemphasis network [ELECTR] An RC (resistance-capacitance) filter inserted in a system to emphasize one range of frequencies with respect to another. Also known as emphasizer. { prē'em·fə·səs ,net,wərk }

preemptive multitasking [COMPUT SCI] A method of running more than one program on a computer at a time, in which control of the processor is decided by the operating system, which allocates each program a recurring time segment. { prē ¦emp·tiv 'məl·tē,task·iŋ }

preferred numbers [ELECTR] A series of numbers adopted by the Electronic Industries Association and the military services for use as nominal values of resistors and capacitors, to reduce the number of different sizes that must be kept in stock for replacements. Also known as preferred values. { pri'fərd 'nəm·bərz }

preferred values *See* preferred numbers. { pri 'fərd 'val·yüz }

prefix notation *See* Polish notation. { 'pre,fiks nō,tā·shən }

prefocus lamp [ELEC] A light bulb whose filaments are precisely positioned with respect to the lamp socket. { prē'fō·kəs ,lamp }

preheat fluorescent lamp [ELECTR] A fluorescent lamp in which a manual switch or thermal starter is used to preheat the cathode for a few seconds before high voltage is applied to strike the mercury arc. { 'prē,hēt flù¦res·ənt 'lamp }

preindexing [COMPUT SCI] Operation in which the address bits of a word are added to the contents of a specified register to determine the pointer address. { prē'in,dek·siŋ }

preliminary amplifier *See* preamplifier. { pri' lim·ə,ner·ē 'am·plə,fī·ər }

preprocessor [COMPUT SCI] A program that converts data into a format suitable for computer processing. { ¦prē'präˌses·ər }

preprogrammed robot [CONT SYS] A robot that cannot adapt itself to the task it is carrying out, and must follow a built-in program. Also known as sequence robot. { ¦prē'prōˌgramd 'rōˌbät }

preprogramming [COMPUT SCI] The prerecording of instructions or commands for a machine, such as an automated tool in a factory. { prē'prōˌgram·iŋ }

preread head [COMPUT SCI] A read head that is placed near another read head in such a way that it can read data stored on a moving medium such as a tape or disk before these data reach the second head. { 'prēˌrēd ˌhed }

prescaler [ELECTR] A scaler that extends the upper frequency limit of a counter by dividing the input frequency by a precise amount, generally 10 or 100. { 'prēˌskāl·ər }

preselection [COMPUT SCI] A technique for saving computation time in buffered computers in which a block of data is read into computer storage from the next input tape to be called upon before the data are required in the computer; the selection of the next input tape is determined by instructions to the computer. { ¦prē·si'lek·shən }

preselector [ELEC] Device in automatic switching which performs its selecting operation before seizing an idle trunk. [ELECTR] A tuned radio-frequency amplifier stage used ahead of the frequency converter in a superheterodyne receiver to increase the selectivity and sensitivity of the receiver. { ¦prē·si'lek·tər }

presentation *See* radar display. { ˌprez·ən'tā·shən }

presentation graphics program [COMPUT SCI] An application program for creating and enhancing the visual appeal and understandability of charts and graphs, with the aid of a library or predrawn images that can be combined with other artwork. { ˌprez·ən¦tā·shən 'graf·iks ˌprō·grəm }

preset [COMPUT SCI] **1.** Of a variable, having a value established before the first time it is used. **2.** To initialize a value of a variable before the value of the variable is used or tested. { 'prēˌset }

preset parameter [COMPUT SCI] In computers, a parameter which is fixed for each problem at a value set by the programmer. { 'prēˌset pə'ram·əd·ər }

presort [COMPUT SCI] **1.** The first part of a sort program in which data items are arranged into strings that are equal to or greater than some prescribed length. **2.** The sorting of data on off-line equipment before it is processed by a computer. { prē'sȯrt }

press teletype network [COMMUN] A large teletypewriter network employed by a press association or other news distributing organization, usually employing modern carrier telegraph circuits operating over both wire and radio facilities, and transmitting to as many as 2000 stations simultaneously. { 'pres 'telˌəˌtīp ˌnetˌwərk }

press-to-talk switch [ELECTR] A switch mounted directly on a microphone to provide a convenient means for switching two-way radiotelephone equipment or electronic dictating equipment to the talk position. { 'pres tə 'tȯk ˌswich }

pressure cable [ELEC] A cable in which a fluid such as oil or gas, at greater than atmospheric pressure, surrounds the conductors and insulation and keeps their temperature down. { 'preshˌər ˌkā·bəl }

pressure microphone [ENG ACOUS] A microphone whose output varies with the instantaneous pressure produced by a sound wave acting on a diaphragm; examples are capacitor, carbon, crystal, and dynamic microphones. { 'preshˌər 'mī·krəˌfōn }

pressure pad [ENG ACOUS] A felt pad mounted on a spring arm, used to hold magnetic tape in close contact with the head on some tape recorders. { 'preshˌər ˌpad }

pressure pickup [ELECTR] A device that converts changes in the pressure of a gas or liquid into corresponding changes in some more readily measurable quantity such as inductance or resistance. { 'preshˌər 'pikˌəp }

pressure switch [ELEC] A switch that is actuated by a change in pressure of a gas or liquid. { 'preshˌər ˌswich }

presumptive address *See* address constant. { pri'zəm·tiv ə'dres }

presumptive instruction *See* basic instruction. { pri'zəm·tiv in'strək·shən }

pretersonics *See* acoustoelectronics. { ¦prēd·ər ¦sän·iks }

pre-transmit-receive tube *See* pre-TR tube. { ¦prē 'tranzˌmit ri'sēv ˌtüb }

pretravel [CONT SYS] The distance or angle through which the actuator of a switch moves from the free position to the operating position. { 'prēˌtrav·əl }

pretrigger [ELECTR] Trigger used to initiate sweep ahead of transmitted pulse. { prē'trig·ər }

pre-TR tube [ELECTR] Gas-filled radio-frequency switching tube used in some radar systems to protect the transmit-receive tube from excessively high power and the receiver from frequencies other than the fundamental. Derived from pre-transmit-receive tube. { prē¦tē'ärˌtüb }

previewing [COMPUT SCI] In character recognition, a process of attempting to gain prior information about the characters that appear on an incoming source document; this information, which may include the range of ink density, relative positions, and so forth, is used as an aid in the normalization phase of character recognition. { 'prēˌvyü·iŋ }

previous element coding [COMMUN] System of signal coding, used for digital television transmission, whereby each transmitted picture element is dependent upon the similarity of the preceding picture element. { 'prē·vē·əs 'el·ə·mənt }

prewhitening filter *See* whitening filter. { prē'wit·ən·iŋ ˌfil·tər }

PRF *See* pulse repetition rate.

pri *See* primary winding. { prī }

witch mounted
le a convenient
radiotelephone
equipment to
,swich }
which a fluid
er than atmo-
conductors and
perature down.

OUS] A micro-
the instanta-
and wave acting
pacitor, carbon,
es. { 'presh·ər

ead mounted on
tic tape in close
tape recorders.

ce that converts
s or liquid into
e more readily
inductance or

that is actuated
gas or liquid.

dress constant.

sic instruction.

ics. { ¦prēd·ər

TR tube. { ¦prē

ance or angle
a switch moves
erating position.

d to initiate
. { prē'trig·ər }
radio-frequency
adar systems to
be from exces-
er from frequen-
al. Derived from
ē¦tē'är ,tüb }
aracter recogni-
to gain prior
s that appear on
his information,
of ink density,
, is used as an
se of character

MUN] System of
television trans-
tted picture ele-
ilarity of the pre-
vē·əs 'el·ə·mənt }
filter. { prē'wīt·

primary [ELEC] One of the high-voltage conductors of a power distribution system. *See* primary winding. { 'prī ,mer·ē }

primary battery [ELEC] A battery consisting of one or more primary cells. { 'prī,mer·ē 'bad·ə·rē }

primary cache [COMPUT SCI] A cache memory located within a microprocessor chip itself. Also known as internal cache; level 1 cache. { ¦prī ,mer·ē 'kash }

primary cell [ELEC] A cell that delivers electric current as a result of an electrochemical reaction that is not efficiently reversible, so that the cell cannot be recharged efficiently. { 'prī,mer·ē 'sel }

primary center [COMMUN] A telephone office having lower rank than a sectional center and higher rank than a toll center; connects toll centers and may also serve as a toll center for nearby end offices. { 'prī,mer·ē 'sen·tər }

primary circuit [ELEC] One of a collection of coupled coils or circuits that receives electric power from a source and transfers it to the secondary circuit by electromagnetic induction. { 'prī,mer·ē 'sər·kət }

primary coil [ELEC] The input coil in an induction coil or transformer. { 'prī,mer·ē 'kȯil }

primary control program [COMPUT SCI] The program which provides the sequential scheduling of jobs and basic operating systems functions. Abbreviated PCP. { 'prī,mer·ē kən'trōl ,prō·grəm }

primary detector *See* sensor. { 'prī,mer·ē di'tek·tər }

primary electron [ELECTR] An electron which bombards a solid surface, causing secondary emission. { 'prī,mer·ē i'lek,trän }

primary emission [ELECTR] Emission of electrons due to primary causes, such as heating of a cathode, and not to secondary effects, such as electron bombardment. { 'prī,mer·ē i'mish·ən }

primary fault [ELEC] In an electric circuit, the initial breakdown of the insulation of a conductor, usually followed by a flow of power current. { 'prī,mer·ē ,fȯlt }

primary flow [ELECTR] The current flow that is responsible for the major properties of a semiconductor device. { 'prī,mer·ē 'flō }

primary frequency [COMMUN] Frequency assigned for normal use on a particular circuit or communications channel. { 'prī,mer·ē 'frē·kwən·sē }

primary-frequency standard [COMMUN] One of the standards of frequency maintained by various governments; the operating frequency of a radio station is determined by comparison with multiples of this standard frequency. { 'prī,mer·ē 'frē·kwən·sē ,stan·dərd }

primary fuel cell [ELEC] A fuel cell in which the fuel and oxidant are continuously consumed. { 'prī,mer·ē 'fyül ,sel }

primary index [COMPUT SCI] An index that holds the values of primary keys, in sequence. { 'prī ,mer·ē 'in,deks }

primary key [COMPUT SCI] A key that identifies a record or portion of a record and determines the sequence of records in a file or other data structure. { 'prī,mer·ē 'kē }

primary photocurrent [ELECTR] A photocurrent resulting from nonohmic contacts unable to replenish charge carriers which pass out of the opposite contact, and whose maximum gain is unity. { 'prī,mer·ē 'fōd·ō,kə·rənt }

primary power cable [ELEC] Power service cables connecting the outside power source to the main-office switch and metering equipment. { 'prī ,mer·ē 'paù·ər ,kā·bəl }

primary radar [ENG] A radar that receives and interprets the reflected signal from scattering objects (targets and clutter) in its view. { 'prī ,mer·ē 'rā,där }

primary register [COMPUT SCI] A general-purpose register in a central processing unit that is available for direct utilization by computer programs. { 'prī,mer·ē 'rej·ə,stər }

primary relay [ELEC] Relay that produces the initial action in a sequence of operations. { 'prī ,mer·ē 'rē,lā }

primary service area [COMMUN] The area in which the ground wave of a broadcast station is not subject to objectionable interference or fading. { 'prī,mer·ē 'sər·vəs ,er·ē·ə }

primary skip zone [ELECTROMAG] Area around a transmitter beyond the ground wave but within the skip distance. { 'prī,mer·ē 'skip ,zōn }

primary storage [COMPUT SCI] Main internal storage of a computer. { 'prī,mer·ē 'stȯr·ij }

primary surveillance radar *See* primary radar. { 'prī,mer·ē sər'vā·ləns ,rā,där }

primary voltage [ELEC] The voltage applied to the terminals of the primary winding of a transformer. { 'prī,mer·ē 'vōl·tij }

primary wave [COMMUN] A radio wave traveling by a direct path, as contrasted with skips. { 'prī ,mer·ē 'wāv }

primary winding [ELEC] The transformer winding that receives signal energy or alternating-current power from a source. Also known as primary. Abbreviated pri. Symbolized P. { 'prī,mer·ē 'wīnd·iŋ }

prime register [COMPUT SCI] One of the registers that is inactive at any given time in a central processing unit with duplicate general-purpose registers. { 'prīm 'rej·ə·stər }

primitive [COMPUT SCI] A sketchy specification, omitting details, of some action in a computer program. [CONT SYS] A basic operation of a robot, initialized by a single command statement in the program that controls the robot. { 'prim·əd·iv }

primitive abstract data type [COMPUT SCI] A simple abstract data type that is typically implemented directly in a high-level programming language; examples include integers and real numbers (with appropriate arithmetic operators), booleans (with appropriate logical operators), text strings, and pointers. { 'prim·əd·iv 'ab,strakt 'dad·ə ,tīp }

principal axis [ENG ACOUS] A reference direction for angular coordinates used in describing the directional characteristics of a transducer; it is

usually an axis of structural symmetry or the direction of maximum response. { 'prin·sə·pəl 'ak·səs }

principal E plane |ELECTROMAG| Plane containing the direction of radiation of electromagnetic waves and arranged so that the electric vector everywhere lies in the plane. { 'prin·sə·pəl 'ē ˌplān }

principal H plane |ELECTROMAG| Plane that contains the direction of radiation and the magnetic vector, and is everywhere perpendicular to the E plane. { 'prin·sə·pəl 'āch ˌplān }

principle of duality See duality principle. { 'prin·sə·pəl əv dü'al·əd·ē }

principle of optimality |CONT SYS| A principle which states that for optimal systems, any portion of the optimal state trajectory is optimal between the states it joins. { 'prin·sə·pəl əv ˌäp·tə'mal·əd·ē }

principle of reciprocity See reciprocity theorem. { 'prin·sə·pəl əv ˌres·ə'präs·əd·ē }

principle of superposition |ELEC| **1.** The principle that the total electric field at a point due to the combined influence of a distribution of point charges is the vector sum of the electric field intensities which the individual point charges would produce at that point if each acted alone. **2.** The principle that, in a linear electrical network, the voltage or current in any element resulting from several sources acting together is the sum of the voltages or currents resulting from each source acting alone. Also known as superposition theorem. { 'prin·sə·pəl əv ˌsü·pər·pə 'zish·ən }

print driver |COMPUT SCI| The portion of a computer program that directs output to a printer and usually also controls printer functions such as pagination and the setting of the margins and page headers. { 'print ˌdrī·vər }

printed circuit |ELECTR| A conductive pattern that may or may not include printed components, formed in a predetermined design on the surface of an insulating base in an accurately repeatable manner. { 'print·əd 'sər·kət }

printed circuit board |ELECTR| A flat board whose front contains slots for integrated circuit chips and connections for a variety of electronic components, and whose back is printed with electrically conductive pathways between the components. Also known as circuit board. { 'print·əd 'sər·kət ˌbȯrd }

printed-wiring armature |ELEC| An armature in which the conductors consist of printed-wiring strips on both sides of a thin insulating disk, to give a low-inertia armature for servomotors and other variable high-speed applications. { 'print·əd ˌwīr·iŋ 'ärm·ə,chür }

printed wiring board |ELECTR| A copper-clad dielectric material with conductors etched on the external or internal layers. { ˌprint·əd 'wīr·iŋ ˌbȯrd }

printer |COMPUT SCI| A computer output mechanism that prints characters one at a time or one line at a time. { 'print·ər }

printer file |COMPUT SCI| **1.** A file that contains the information that the printer driver needs in order to generate the codes required by the printer. **2.** A document in print image format. { 'print·ər ˌfīl }

print head |COMPUT SCI| The mechanism that generates the characters to be reproduced by a character printer. { 'print ˌhed }

print image format |COMPUT SCI| The format of a document that has been prepared for output on the printer. { 'print ˌim·ij ˌfȯr,mat }

printing calculator |COMPUT SCI| A desk-model electronic calculator that provides a printed record on paper tape with or without a digital display. { 'print·iŋ 'kal·kyəˌlād·ər }

printing element |COMPUT SCI| The part of the print head mechanism that comes into contact with the paper to print characters or other images. { 'print·iŋ ˌel·ə·mənt }

printing-telegraph code |COMMUN| A five- or seven-unit code used for operation of a teleprinter, teletypewriter, and similar telegraph printing devices. { 'print·iŋ ˌtel·əˌgraf ˌkōd }

printing telegraphy |COMMUN| Method of telegraph operation in which the received signals are automatically recorded in printed characters. { 'print·iŋ tə'leg·rə·fē }

print member |COMPUT SCI| The part of a computer printer that determines the form of a printed character, such as a print wheel or type bar. { 'print ˌmem·bər }

printout |COMPUT SCI| A printed output of a data-processing machine or system. { 'printˌaůt }

print position |COMPUT SCI| One of the positions on a printer at which a character can be printed. { 'print pəˌzish·ən }

print queue |COMPUT SCI| A prioritized list, maintained by the operating system, of the output from a computer system waiting on a spool file to be printed. { 'print ˌkyü }

print server |COMPUT SCI| A computer controlling a series of printers. { 'print ˌsər·vər }

printthrough |ELECTR| Transfer of signals from one recorded layer of magnetic tape to the next on a reel. { 'printˌthrü }

print train |COMPUT SCI| **1.** The chain in a chain printer or the drum in a drum printer that holds the type slugs used to make impressions on paper. **2.** The electronic character set that serves a similar function in a laser printer. { 'print ˌtrān }

print wheel |COMPUT SCI| A disk which has around its rim the letters, numerals, and other characters that are used in printing in a wheel printer. { 'print ˌwēl }

priority-arbitration circuit |COMPUT SCI| A logic circuit which combines all interrupts but allows only the highest-priority request to enable its active flipflop. { prī'är·əd·ē ˌär·bə'trā·shən ˌsər·kət }

priority indicator |COMMUN| Data attached to a message to indicate its relative priority and hence the order in which it will be transmitted. |COMPUT SCI| Data attached to a computer program or job which are used to determine the order in which it will be processed by the computer. { prī'är·əd·ē 'in·dəˌkād·ər }

priority interrupt [COMPUT SCI] An interrupt procedure in which control is passed to the monitor, the required operation is initiated, and then control returns to the running program, which never knows that it has been interrupted. { prī'är·əd·ē 'int·ə,rəpt }

priority phase [COMPUT SCI] Phase consisting of execution of operations in response to instruments or process interrupts other than clock interrupts. { prī'är·əd·ē 'fāz }

priority polling [COMMUN] In a data communications network, a system in which nodes with high activity are interrogated more frequently than those with only occasional traffic. { prī'är·əd·ē 'pōl·iŋ }

priority processing [COMPUT SCI] A method of computer time-sharing in which the order in which programs are processed is determined by a system of priorities, involving such factors as the length, nature, and source of the programs. { prī'är·əd·ē 'prä,ses·iŋ }

priority queueing [COMPUT SCI] The arrangement of jobs to be carried out in a list according to their relative importance, with the most important first. { prī'är·əd·ē 'kyü·iŋ }

privacy system [COMMUN] A device or method for scrambling overseas telephone conversations handled by radio links in order to make them unintelligible to outside listeners. Also known as privacy transformation; secrecy system. { 'prī·və·sē ,sis·təm }

privacy transformation *See* privacy system. { 'prī·və·sē ,tranz·fər'mā·shən }

private automatic branch exchange [COMMUN] A private branch exchange in which connections are made by remote-controlled switches. Abbreviated PABX. { 'prī·vət ¦ȯd·ə,mad·ik 'branch iks ,chānj }

private automatic exchange [COMMUN] A private telephone exchange in which connections are made by remote-controlled switches. Abbreviated PAX. { 'prī·vət ¦ȯd·ə,mad·ik iks,chānj }

private branch exchange [COMMUN] A telephone exchange serving a single organization, having a switchboard and associated equipment, usually located on the customer's premises; provides for switching calls between any two extensions served by the exchange or between any extension and the national telephone system via a trunk to a central office. Abbreviated PBX. { 'prī·vət 'branch iks,chānj }

private branch exchange access line [ELEC] Circuit that connects a main private branch exchange (PBX) to a switching center. { 'prī·vət 'branch iks,chānj 'ak,ses ,līn }

private data [COMPUT SCI] Data that are open to a single user only. { 'prī·vət 'dad·ə }

private exchange [COMMUN] Telephone exchange serving a single organization and having no means for connecting to a public telephone system. { 'prī·vət iks'chānj }

private library [COMPUT SCI] An organized collection of programs and other software that is the property of a single user of a computer system and is not generally available to other users. { 'prī·vət 'lī,brer·ē }

private line [COMMUN] A line, channel, or service reserved solely for one user. { 'prī·vət 'līn }

private line arrangement [COMPUT SCI] The structure of a computer system in which each input/output device has a set of lines leading to the central processing unit for the device's own private use. Also known as radial selector. { 'prī·vət ¦līn ə,rānj·mənt }

private line service [COMMUN] Service provided by United States common carriers engaged in domestic or international wire, radio, and cable communications for the intercity communications purposes of a customer; this service is provided over integrated communications pathways, including facilities or local channels, which are integrated components of intercity private line services, and station equipment between specified locations for a continuous period or for regularly recurring periods at stated hours. { 'prī·vət ¦līn ,sər·vəs }

private pack [COMPUT SCI] A disk pack assigned exclusively to one application or one user so that the operating system does not try to allocate space on the device to others. { 'prī·vət 'pak }

privileged instruction [COMPUT SCI] A class of instructions, usually including storage protection setting, interrupt handling, timer control, input/output, and special processor status-setting instructions, that can be executed only when the computer is in a special privileged mode that is generally available to an operating or executive system, but not to user programs. { 'priv·ə·lijd in'strək·shən }

privileged mode *See* master mode. { 'priv·ə·lijd ,mōd }

PRML technique *See* partial-response maximum-likelihood technique. { ¦pē¦är¦em'el tek,nēk }

probabilistic automaton [COMPUT SCI] A device, with a finite number of internal states, which is capable of scanning input words over a finite alphabet and responding by successively changing its internal state in a probabilistic way. Also known as stochastic automaton. { ,präb·ə·bə'lis·tik ȯ'täm·ə,tän }

probabilistic sequential machine [COMPUT SCI] A probabilistic automaton that has the capability of printing output words probabilistically, over a finite output alphabet. Also known as stochastic sequential machine. { ,präb·ə·bə'lis·tik si'kwen·chəl mə'shēn }

probe [COMMUN] To determine a radio interference by obtaining the relative interference level in the immediate area of a source by the use of a small, insensitive antenna in conjunction with a receiving device. [ELECTROMAG] A metal rod that projects into but is insulated from a waveguide or resonant cavity; used to provide coupling to an external circuit for injection or extraction of energy or to measure the standing-wave ratio. Also known as waveguide probe. { prōb }

problem check [COMPUT SCI] One or more tests used to assist in obtaining the correct machine solution to a problem. { 'präb·ləm ,chek }

problem-defining language [COMPUT SCI] A programming language that literally defines a

problem and may specifically define the input and output, but does not define the method of transforming one to the other. Also known as problem-specification language. ['präb·ləm di ¦fīn·iŋ ˌlaŋ·gwij]

problem definition [COMPUT SCI] The art of compiling logic in the form of general flow charts and logic diagrams which clearly explain and present the problem to the programmer in such a way that all requirements involved in the run are presented. ['präb·ləm ˌdef·ə,nish·ən]

problem-describing language [COMPUT SCI] A programming language that describes, in the most general way, the problem to be solved, but gives no indication of the problem's detailed characteristics or its solution. ['präb·ləm di ¦skrīb·iŋ ˌlaŋ·gwij]

problem file See run book. ['präb·ləm ˌfīl]

problem folder See run book. ['präb·ləm ˌfōld·ər]

problem mode [COMPUT SCI] A condition of computer operation in which, in contrast to supervisor mode, the privileged instructions cannot be executed, preventing the program from upsetting the supervisor program or any other program. ['präb·ləm ˌmōd]

problem-oriented language [COMPUT SCI] A language designed to facilitate the accurate expression of problems belonging to specific sets of problem types. ['präb·ləm ˌōr·ē¦ent·əd ˌlaŋ·gwij]

problem-solving language [COMPUT SCI] A programming language that can be used to specify a complete solution to a problem. ['präb·ləm ¦sälv·iŋ ˌlaŋ·gwij]

problem-specification language See problem-defining language. ['präb·ləm ˌspes·ə·fə¦kā·shən ˌlaŋ·gwij]

procedural programming [COMPUT SCI] A list of instructions telling a computer, step-by-step, what to do, usually having a linear order of execution from the first statement to the second and so forth with occasional loops and branches. Procedural programming languages include C, C++, Fortran, Pascal, and Basic. [prəˌsē·jə·rəl 'prōˌgram·iŋ]

procedural representation [COMPUT SCI] The representation of certain concepts in a computer by procedures or programs in some appropriate language, rather than by static data items such as numbers or lists. [prə'sē·jə·rəl ˌrep·rə·zen'tā·shən]

procedure [COMPUT SCI] **1.** A sequence of actions (or computer instructions) which collectively accomplish some desired task. **2.** In particular, a subroutine that causes an effect external to itself. [prə'sē·jər]

procedure declaration [COMPUT SCI] A statement that causes a procedure to be given a name and written as a segment of a computer program. [prə'sē·jər ˌdek·lə,rā·shən]

procedure division [COMPUT SCI] The section of a program (written in the COBOL language) in which a programmer specifies the operations to be performed with the data names appearing in the program. [prə'sē·jər di,vizh·ən]

procedure library [COMPUT SCI] A collection of job control language routines that are stored on a disk file and can be executed by entering a command naming the routine. Abbreviated PROCLIB. [prə'sē·jər ˌlī,brer·ē]

procedure-oriented language [COMPUT SCI] A language designed to facilitate the accurate description of procedures, algorithms, or routines belonging to a certain set of procedures. [prə'sē·jər ˌōr·ē¦ent·əd ˌlaŋ·gwij]

proceed-to-select signal [COMMUN] Signal returned from distant automatic equipment over the backward signaling path, in response to a calling signal, to indicate that selecting information can be transmitted; in certain signaling systems, both signals can be the same. [prə'sēd tə si'lekt ˌsig·nəl]

proceed-to-transmit signal [COMMUN] Signal returned from a distant manual switchboard over the backward signaling path, in response to a calling signal, to indicate that the teleprinter of the distant operator is connected to the circuit. [prə'sēd tə tranz'mit ˌsig·nəl]

process [COMPUT SCI] **1.** To assemble, compile, generate, interpret, compute, and otherwise act on information in a computer. **2.** A program that is running on a computer. ['präˌses]

process-bound program See CPU-bound program. ['präˌses ¦baund 'prō·grəm]

process control system [CONT SYS] The automatic control of a continuous operation. ['präˌsəs kənˌtrōl ˌsis·təm]

processing [COMMUN] Further handling, manipulation, consolidation, compositing, and so on, of information to convert it from one format to another or to reduce it to manageable or intelligible information. ['präˌses·iŋ]

processing interrupt [COMPUT SCI] The interruption of the batch processing mode in a real-time system when live data are entered in the system. ['präˌses·iŋ 'int·əˌrəpt]

processing program [COMPUT SCI] Any computer program that is not a control program, such as an application program, or a noncontrolling part of the operating system, such as a sort-merge program or language translator. ['präˌses·iŋ ˌprō ˌgram]

processing section [COMPUT SCI] The computer unit that does the actual changing of input into output; includes the arithmetic unit and intermediate storage. ['präˌses·iŋ ˌsek·shən]

process-limited See processor-limited. ['präˌsəs ¦lim·əd·əd]

processor [COMPUT SCI] **1.** A device that performs one or many functions, usually a central processing unit. **2.** A program that transforms some input into some output, such as an assembler, compiler, or linkage editor. ['präˌses·ər]

processor complex [COMPUT SCI] The central portion of a very large computer consisting of several central processing units working in concert. ['präˌses·ər ˌkäm,pleks]

processor error interrupt [COMPUT SCI] The interruption of a computer program because a parity check indicates an error in a word that has been

transferred to or within the central processing unit. { 'prä,ses·ər ˌər·ər ˌint·ə,rəpt }

processor-limited [COMPUT SCI] Property of a computer system whose processing time is determined by the speed of its central processing unit rather than by the speed of its peripheral equipment. Also known as process-limited. { 'prä,ses·ər ˌlim·əd·əd }

processor-memory-switch notation *See* PMS notation. { 'prä,ses·ər 'mem·rē ˌswich nō,tā·shən }

processor stack pointer [COMPUT SCI] A programmable register used to access all temporary-storage words related to an interrupt-service routine which was halted when a new service routine was called in. { 'prä,ses·ər 'stak ˌpȯint·ər }

processor status word [COMPUT SCI] A word comprising a set of flag bits and the interrupt-mask status. { 'prä,ses·ər 'stad·əs ˌwərd }

process simulation [COMPUT SCI] The use of computer programming, computer vision, and feedback to simulate manufacturing techniques. { 'prä,ses ˌsim·yə,lā·shən }

PROCLIB *See* procedure library. { 'präk,līb }

prod *See* test prod. { präd }

product demodulator [ELECTR] A receiver demodulator whose output is the product of the input signal voltage and a local oscillator signal voltage at the input frequency. Also known as product detector. { 'präd·əkt dē,mäj·ə,lād·ər }

product detector *See* product demodulator. { 'präd·əkt di,tek·tər }

production [COMPUT SCI] **1.** The processing of useful work by a computer system, excluding the development and testing of new programs. **2.** A rule in a grammar of a formal language that describes how parts of a string (or word, phrase, or construct) can be replaced by other strings. Also known as rule of inference. { prə'dək·shən }

production program [COMPUT SCI] A proprietary program used primarily for internal processing in a business and not generally made available to third parties for profit. { prə'dək·shən ˌprō ˌgram }

production test [COMPUT SCI] A test of a computer system with actual data in the environment where it will be used. { prə'dək·shən ˌtest }

production time [COMPUT SCI] Good computing time, including occasional duplication of one case for a check or rerunning of the test run; also including duplication requested by the sponsor, any reruns caused by misinformation or bad data supplied by sponsor, and error studies using different intervals, covergence criteria, and so on. { prə'dək·shən ˌtīm }

product modulator [ELECTR] Modulator whose modulated output is substantially equal to the carrier and the modulating wave; the term implies a device in which intermodulation between components of the modulating wave does not occur. { 'präd·əkt ˌmäj·ə,lād·ər }

profile [COMMUN] A defined subset of the syntax specified in the MPEG-2 video coding specification. { 'prō,fīl }

program [COMMUN] **1.** A sequence of audio signals alone, or audio and video signals, transmitted for entertainment or information. **2.** A collection of program elements. Program elements may be elementary streams, and need not have any defined time base. Those that do have a common time base are intended for synchronized presentation. [COMPUT SCI] A detailed and explicit set of directions for accomplishing some purpose, the set being expressed in some language suitable for input to a computer, or in machine language. { 'prō·grəm *or* 'prō,gram }

program analysis [COMPUT SCI] The process of determining the functions to be carried out by a computer program. { 'prō·grəm ə,nal·ə·səs }

program block [COMPUT SCI] A division or section of a computer program that functions to a large extent as if it were a separate program. { 'prō·grəm ˌbläk }

program check [COMPUT SCI] A built-in check system in a program to determine that the program is running correctly. { 'prō·grəm ˌchek }

program clock reference [COMMUN] A time stamp in the transport stream from which decoder timing is derived. Abbreviated PCR. { 'prō·grəm ˌkläk 'ref·rəns }

program compatibility [COMPUT SCI] The type of compatibility shared by two computers that can process the identical program or programs written in the same source language or machine language. { 'prō·grəm kəm,pad·ə'bil·əd·ē }

program control [CONT SYS] A control system whose set point is automatically varied during definite time intervals in order to make the process variable vary in some prescribed manner. { 'prō·grəm kən,trōl }

program conversion [COMPUT SCI] The changing of the source language of a computer program from one dialect to another, or the modification of the program to operate with a different operating system or data-base management system. { 'prō·grəm kən,vər·zhən }

program counter *See* instruction counter. { 'prō·grəm ˌkaùnt·ər }

program design [COMPUT SCI] The phase of computer program development in which the hardware and software resources needed by the program are identified and the logic to be used by the program is determined. { 'prō·grəm di ˌzīn }

program development time [COMPUT SCI] The total time taken on a computer to produce operating programs, including the time taken to compile, test, and debug programs, plus the time taken to develop and test new procedures and techniques. { 'prō·grəm di'vel·əp·mənt ˌtīm }

program editor [COMPUT SCI] A computer routine used in time-sharing systems for on-line modification of computer programs. { 'prō·grəm ˌed·ə·tər }

program element [COMMUN] A generic term for one of the elementary streams or other data streams that may be included in the program of a digital video system. [COMPUT SCI] Part of a central computer system that carries out the instruction sequence scheduled by the programmer. { 'prō·grəm ˌel·ə·mənt }

program failure alarm [COMMUN] Signal-operated radio or television relay that gives a visual and/or aural alarm when the program fails on the line being monitored; a time delay is provided to prevent the relay from operating and giving a false alarm during station identification periods or other short periods of silence in program continuity. ['prō·grəm 'fāl·yər ə,lärm]

program generator [COMPUT SCI] A program that permits a computer to write other programs automatically. ['prō·grəm ,jen·ə,rād·ər]

program library [COMPUT SCI] An organized set of computer routines and programs. ['prō·grəm ,lī·brer·ē]

program listing [COMPUT SCI] A list of the statements in a computer program, usually produced as a by-product of the compilation of the program. ['prō·grəm ,list·iŋ]

program logic [COMPUT SCI] A particular sequence of instructions in a computer program. ['prō·grəm ,läj·ik]

programmable calculator [COMPUT SCI] An electronic calculator that has some provision for changing its internal program, usually by inserting a new magnetic card on which the desired calculating program has been stored. [prō'gram·ə·bəl 'kal·kyə,lād·ər]

programmable controller [CONT SYS] A control device, normally used in industrial control applications, that employs the hardware architecture of a computer and a relay ladder diagram language. Also known as programmable logic controller. [prō'gram·ə·bəl kən'trōl·ər]

programmable counter [ELECTR] A counter that divides an input frequency by a number which can be programmed into decades of synchronous down counters; these decades, with additional decoding and control logic, give the equivalent of a divide-by-N counter system, where N can be made equal to any number. [prō'gram·ə·bəl 'kaùnt·ər]

programmable decade resistor [ELECTR] A decade box designed so that the value of its resistance can be remotely controlled by programming logic as required for the control of load, time constant, gain, and other parameters of circuits used in automatic test equipment and automatic controls. [prō'gram·ə·bəl 'de,kād ri ,zis·tər]

programmable device [COMPUT SCI] Any device whose operation is controlled by a stored program that can be changed or replaced. [prō'gram·ə·bəl di'vīs]

programmable electronic system [SYS ENG] A system based on a computer and connected to sensors or actuators for the purpose of control, protection, or monitoring. [prō'gram·ə·bəl i'lek,trän·ik ,sis·təm]

programmable logic array *See* field-programmable logic array. [prō'gram·ə·bəl ¦läj·ik ə,rā]

programmable logic controller *See* programmable controller. [prō'gram·ə·bəl ¦läj·ik kən,trōl·ər]

programmable power supply [ELEC] A power supply whose output voltage can be changed by digital control signals. [prō'gram·ə·bəl 'paù·ər sə,plī]

programmable read-only memory [COMPUT SCI] An integrated-circuit memory chip which can be programmed only once by the user after which the information stored in the chip cannot be altered. Abbreviated PROM. [prō'gram·ə·bəl ¦rēd ¦ōn·lē 'mem·rē]

program maintenance [COMPUT SCI] The updating of computer programs both by error correction and by alteration of programs to meet changing needs. ['prō·grəm 'mānt·ən·əns]

programmatic interface *See* application program interface. [,prō·grə¦mad·ik 'in·tər,fās]

programmed check [COMPUT SCI] **1.** An error-detecting operation programmed by instructions rather than built into the hardware. **2.** A computer check in which a sample problem with known answer, selected for having a program similar to that of the next problem to be run, is put through the computer. ['prō,gramd 'chek]

programmed dump [COMPUT SCI] A storage dump which results from an instruction in a computer program at a particular point in the program. ['prō,gramd 'dəmp]

programmed function key [COMPUT SCI] A key on the keyboard of a computer terminal that lacks a predefined function but can be assigned a function by a computer program. Abbreviated PF key. ['prō,gramd 'fəŋk·shən ,kē]

programmed halt [COMPUT SCI] A halt that occurs deliberately as the result of an instruction in the program. Also known as programmed stop. ['prō,gramd 'hólt]

programmed logic array [ELECTR] An array of AND/OR logic gates that provides logic functions for a given set of inputs programmed during manufacture and serves as a read-only memory. Abbreviated PLA. ['prō,gramd ¦läj·ik ə,rā]

programmed marginal check [COMPUT SCI] Computer program that varies its own voltage to check some piece of electronic computer equipment during a preventive maintenance check. ['prō,gramd 'mär·jən·əl 'chek]

programmed operators [COMPUT SCI] Computer instructions which enable subroutines to be accessed with a single programmed instruction. ['prō,gramd 'äp·ə,rād·ərz]

programmed stop *See* programmed halt. ['prō ,gramd 'stäp]

programmer [COMPUT SCI] A person who prepares sequences of instructions for a computer, without necessarily converting them into the detailed codes. ['prō,gram·ər]

programmer analyst [COMPUT SCI] A person who both writes computer programs and analyzes and designs information systems. ['prō,gram·ər 'an·əl,ist]

programmer-defined macroinstruction [COMPUT SCI] A macroinstruction which is equivalent to a set of ordinary instructions as specified by the programmer for use in a particular computer program. ['prō ,gram·ər di¦fīnd ¦ma·krō·in'strək·shən]

programming [COMPUT SCI] Preparing a detailed sequence of operating instructions for a particular problem to be run on a digital computer. Also known as computer programming. { 'prō,gram·iŋ }

programming language [COMPUT SCI] The language used by a programmer to write a program for a computer. { 'prō,gram·iŋ ,laŋ·gwij }

programming panel [CONT SYS] A device used to edit a program or insert and monitor it in a programmable controller. { 'prō,gram·iŋ ,pan·əl }

programming unit *See* manual control unit. { 'prō,gram·iŋ ,yü·nət }

program module [COMPUT SCI] A logically self-contained and discrete part of a larger computer program, for example, a subroutine or a coroutine. { 'prō·grəm ,mäj·yül }

program monitor [COMMUN] A monitor used to observe the quality of a radio or television broadcast. { 'prō·grəm 'män·əd·ər }

program parameter [COMPUT SCI] In computers, an adjustable parameter in a subroutine which can be given a different value each time the subroutine is used. { 'prō·grəm pə'ram·əd·ər }

program register [COMPUT SCI] The register in the control unit of a digital computer that stores the current instruction of the program and controls the operation of the computer during the execution of that instruction. Also known as computer control register. { 'prō·grəm ,rej·ə·stər }

program scan [CONT SYS] The span of time during which a programmable controller processor executes all the instructions of a given program. { 'prō·grəm ,skan }

program-sensitive fault [COMPUT SCI] A hardware malfunction that appears only in response to a particular sequence (or kind of sequence) of program instructions. { 'prō·grəm ¦sen·səd·iv 'fȯlt }

program specification [COMPUT SCI] A statement of the precise functions which are to be carried out by a computer program, including descriptions of the input to be processed by the program, the processing needed, and the output from the program. { 'prō·grəm ,spes·ə·fə'kā·shən }

program specific information [COMMUN] Normative data that is necessary for the demultiplexing of transport streams and the successful regeneration of programs. Abbreviated PSI. { ¦prō·grəm spə¦sif·ik 'in·fər'mā·shən }

program state [COMPUT SCI] The mode of operation of a computer during the execution of instructions in an application program. { 'prō·grəm ,stāt }

program status word [COMPUT SCI] An internal register to the central processing unit denoting the state of the computer at a moment in time. { 'prō·grəm 'stad·əs ,wərd }

program step [COMPUT SCI] In computers, some part of a program, usually one instruction. { 'prō·grəm ,step }

program stop [COMPUT SCI] An instruction built into a computer program that will automatically stop the machine under certain conditions, or upon reaching the end of processing or completing the solution of a program. Also known as halt instruction; stop instruction. { 'prō·grəm ,stäp }

program storage [COMPUT SCI] Portion of the internal storage reserved for the storage of programs, routines, and subroutines; in many systems, protection devices are used to prevent inadvertent alteration of the contents of the program storage; contrasted with temporary storage. { 'prō·grəm ,stór·ij }

program tape [COMPUT SCI] Tape containing the sequence of computer instructions for a given problem. { 'prō·grəm ,tāp }

program test [COMPUT SCI] A system of checking before running any problem in which a sample problem of the same type with a known answer is run. { 'prō·grəm ,test }

program testing time [COMPUT SCI] The machine time expended for program testing, debugging, and volume and compatibility testing. { 'prō·grəm 'test·iŋ ,tīm }

program time [COMPUT SCI] The phase of computer operation when an instruction is being interpreted so that it can be carried out. { 'prō·grəm ,tīm }

progressive overflow [COMPUT SCI] Retrieval of a randomly stored overflow record by a forward serial search from the home address. { prə'gres·iv 'ō·vər,flō }

progressive scanning [COMMUN] Scanning all lines in sequence, without interlace, so all picture elements are included during one vertical sweep of the scanning beam. Also known as sequential scanning. { prə'gres·iv 'skan·iŋ }

progressive-wave antenna *See* traveling-wave antenna. { prə'gres·iv ¦wāv an'ten·ə }

projection cathode-ray tube [ELECTR] A cathode-ray tube designed to produce an intensely bright but relatively small image that can be projected onto a large viewing screen by an optical system. { prə'jek·shən ¦kath,ōd 'rā ,tüb }

projection display [ELECTR] An electronic system in which an image is generated on a high-brightness cathode-ray tube or similar electronic image generator and then optically projected onto a larger screen. { prə'jek·shən di'splā }

projection net *See* net. { prə'jek·shən ,net }

projection plan position indicator [ELECTR] Unit in which the image of a 4-inch (10-centimeter) dark-trace cathode-ray tube is projected on a 24-inch (61-centimeter) horizontal plotting surface; the echoes appear as magenta-colored arcs on white background. { prə'jek·shən 'plan pə'zish·ən 'in·də,kād·ər }

projector [ENG ACOUS] **1.** A horn designed to project sound chiefly in one direction from a loudspeaker. **2.** An underwater acoustic transmitter. { prə'jek·tər }

PROLOG [COMPUT SCI] A programming language that is for artificial intelligence applications, and uses problem descriptions to reach solutions, based on precise rules. { 'prō,läg }

PROM *See* programmable read-only memory. { präm }

PROM burner [COMPUT SCI] A special device used to write on a programmable read-only memory (PROM). { 'präm ,bər·nər }

PROM programmer [ELECTR] A device that holds several programmable read-only memory

(PROM) chips and writes instructions and data into them by melting connections in their circuitry. { 'präm 'prō,gram·ər }

prompt [COMPUT SCI] A message or format displayed on the screen of a computer terminal that requires the user to respond in some way before processing can continue. { prämpt }

pronate [CONT SYS] To orient a robot toward a position in which the back or protected side of a manipulator faces up and is exposed. { 'prō,nāt }

prong *See* pin. { präŋ }

proof plane [ELEC] A small metal plane supported by an insulating handle and used to transfer a small fraction of the electric charge on a body to an electrometer to investigate the charge distribution on the body. { 'prüf ,plān }

proof total [COMPUT SCI] One of a group of totals which are compared with each other to check their consistency. { 'prüf ,tōd·əl }

propagated error [COMPUT SCI] An error which takes place in one operation and spreads through succeeding operations. { 'präp·ə,gād·əd 'er·ər }

propagation constant [ELECTROMAG] A rating for a line or medium along or through which a wave of a given frequency is being transmitted; it is a complex quantity; the real part is the attenuation constant in nepers per unit length, and the imaginary part is the phase constant in radians per unit length. { ,präp·ə'gā·shən ,kän·stənt }

propagation delay [ELECTR] The time required for a signal to pass through a given complete operating circuit; it is generally of the order of nanoseconds, and is of extreme importance in computer circuits. { ,präp·ə'gā·shən di,lā }

propagation loss [COMMUN] The attenuation of signals passing between two points of a transmission path. { ,präp·ə'gā·shən ,lòs }

propagation mode [ELECTROMAG] A form of propagation of electromagnetic radiation in a periodic beamguide in which the field distributions over cross sections of the beam are identical at positions separated by one period of the guide. { 'präp·ə'gā·shən ,mōd }

propagation notice [COMMUN] A forecast of propagation conditions for long-distance radio communications, broadcast at regular intervals over radio stations operated by the National Institute of Standards and Technology. { ,präp·ə'gā·shən ,nōd·əs }

propagation path [COMMUN] A path between receiver and transmitter including direct tropospheric scatter, ionospheric scatter, E-layer skip, and F_1-layer and F_2-layer skip and echo. { ,präp·ə'gā·shən ,path }

propagation time delay [COMMUN] The time required for a wave to travel between two points of a transmission path. { ,präp·ə'gā·shən 'tīm di ,lā }

propagation velocity [ELECTROMAG] Velocity of electromagnetic wave propagation in the medium under consideration. { ,präp·ə'gā·shən və ,läs·əd·ē }

property detector [COMPUT SCI] In character recognition, that electronic component of a character reader which processes the normalized signal for the purpose of extracting from it a set of characteristic properties on the basis of which the character can be subsequently identified. { 'präp·ərd·ē di,tek·tər }

property list [COMPUT SCI] A list for describing some object or concept, in which odd-numbered items name a property or attribute of a relevant class of objects, and the item following the property name is the property's value for the described objects. { 'präp·ərd·ē ,list }

proportional control [CONT SYS] Control in which the amount of corrective action is proportional to the amount of error. { prə'pȯr·shən·əl kən'trōl }

proportional ionization chamber [ELECTR] An ionization chamber in which the initial ionization current is amplified by electron multiplication in a region of high electric-field strength, as in a proportional counter; used for measuring ionization currents or charges over a period of time, rather than for counting. { prə'pȯr·shən·əl ,ī·ə·nə'zā·shən ,chām·bər }

proportional-plus-derivative control [CONT SYS] Control in which the control signal is a linear combination of the error signal and its derivative. { prə'pȯr·shən·əl ,pləs də'riv·əd·iv kən,trōl }

proportional-plus-integral control [CONT SYS] Control in which the control signal is a linear combination of the error signal and its integral. { prə'pȯr·shən·əl ,pləs 'int·ə·grəl kən,trōl }

proportional-plus-integral-plus-derivative control [CONT SYS] Control in which the control signal is a linear combination of the error signal, its integral, and its derivative. { prə'pȯr·shən·əl ,pləs 'int·ə·grəl ,pləs də'riv·əd·iv kən,trōl }

proportional-speed control *See* floating control. { prə'pȯr·shən·əl 'spēd kən,trōl }

proprietary program [COMPUT SCI] **1.** A computer program that is owned by someone, and whose use may thus be restricted in some manner or entail payment of a fee. Also known as owned program. **2.** More narrowly, a program that is exploited commercially as a separate product. { prə'prī·ə,ter·ē 'prō·grəm }

proprioceptor [CONT SYS] A device that senses the position of an arm or other computer-controlled articulated mechanism of a robot and provides feedback signals. { ,prō·prē·ə'sep·tər }

protected contour [COMMUN] A representation of the theoretical signal strength of a radio station that appears on a map as a closed polygon surrounding the station's transmitter site. The FCC defines a particular signal strength contour such as 60 dBuV/m, for certain classes of station, as the protected contour. In allocating the facilities of other radio stations, the protected contour of an existing station may not be overlapped by certain interferring contours of other stations. The protected contour coarsely represents the primary coverage area of a station, within which there is little likelihood that the signals of another station will cause interference with its reception. { prə'tek·təd 'kän·tůr }

protected format [COMPUT SCI] Parts of a computer display that cannot be altered by typing from the keyboard. { prə'tek·təd 'fȯr,mat }

protected location [COMPUT SCI] A storage cell arranged so that access to its contents is denied under certain circumstances, in order to prevent programming accidents from destroying essential programs and data. { prə'tek·təd lō'kā·shən }

protected-logic module [COMPUT SCI] A module that stores selected computer programs that must remain unaltered. { prə'tek·təd ¦läj·ik 'mäj·yül }

protected subnetwork See domain. { prə¦tek·təd səb'net,wərk }

protection code [COMPUT SCI] A component of a task descriptor that specifies the protection domain of the task, that is, the authorizations it has to perform certain actions. { prə'tek·shən ,kōd }

protection key [COMPUT SCI] An indicator, usually 1 to 6 bits in length, associated with a program and intended to grant the program access to those sections of memory which the program can use but to deny the program access to all other parts of memory. { prə'tek·shən ,kē }

protection profile [COMPUT SCI] A structure for defining the security and functionality requirements of a computing system. { prə'tek·shən ,prō·fīl }

protective device See electric protective device. { prə'tek·tiv di'vīs }

protective grounding [ELEC] Grounding of the neutral conductor of a secondary power-distribution system, and of all metal enclosures for conductors, to protect persons from dangerous currents. { prə'tek·tiv 'graùnd·iŋ }

protective relay [ELEC] A relay whose principal function is to protect service from interruption or to prevent or limit damage to apparatus. { prə'tek·tiv 'rē,lā }

protective resistance [ELECTR] Resistance used in series with a gas tube or other device to limit current flow to a safe value. { prə'tek·tiv ri'zis·təns }

protector [ELEC] Device to protect equipment or personnel from high voltages or currents. { prə'tek·tər }

protector block [ELEC] Rectangular piece of carbon with an insulated metal insert, or porcelain with a carbon insert, constituting an element of a protector; it forms a gap which will break down and provide a path to ground for voltages over 350 volts. { prə'tek·tər ,bläk }

protector gap [ELEC] A device designed to limit voltage, usually from lightning strikes, in order to protect telephone and telegraph equipment; consists of two carbon blocks with an air gap between them. { prə'tek·tər ,gap }

protector tube [ELECTR] A glow-discharge cold-cathode tube that becomes conductive at a predetermined voltage, to protect a circuit against overvoltage. { prə'tek·tər ,tüb }

Proteus See advanced signal-processing system. { 'prōd·ē·əs }

protocol [COMPUT SCI] **1.** A set of hardware and software interfaces in a terminal or computer which allows it to transmit over a communications network, and which collectively forms a communications language. **2.** See communication protocol. { 'prōd·ə,kól }

protocol-level timer [COMMUN] A time-measuring unit within a communicating device that issues high-priority interrupts which synchronize and set deadlines for protocol-related activities. { 'prōd·ə,kól ¦lev·əl 'tīm·ər }

proton microscope [ELECTR] A microscope that is similar to the electron microscope but uses protons instead of electrons as the charged particles. { 'prō,tän 'mī·krə,skōp }

prototype [ENG] A model suitable for use in complete evaluation of form, design, and performance. { 'prōd·ə,tīp }

proving [COMPUT SCI] Testing whether a computer is free of faults and capable of functioning normally, usually by having it carry out a check routine or diagnostic routine. { 'prüv·iŋ }

proximity detector [ENG] A sensing device that produces an electrical signal when approached by an object or when approaching an object. { präk'sim·əd·ē di,tek·tər }

proximity effect [ELEC] Redistribution of current in a conductor brought about by the presence of another conductor. { präk'sim·əd·ē i,fekt }

proximity-focused tube [ELECTR] A type of image tube in which electrons are rapidly accelerated across a narrow gap, 1.5 to 3.5 millimeters wide, between the photocathode and the phosphor screen, both deposited on plane-parallel optical windows. { präk'sim·əd·ē ¦fō·kəst 'tüb }

proximity sensor [CONT SYS] Any device that measures short distances within a robotic system. Also known as noncontact sensor. { präk 'sim·əd·ē 'sen·sər }

proxy server [COMPUT SCI] Software for caching and filtering Web content to reduce network traffic on intranets, and for increasing security by filtering content and restricting access. { 'präk·sē ,sər·vər }

PRR See pulse repetition rate.

PSC motor See permanent-split capacitor motor. { ¦pē¦es¦sē 'mōd·ər }

pseudoanalog display [ELECTR] An electronic display consisting of a dedicated arrangement of discrete pixels used to present analog or quantitative information. { ¦süd·ō¦an·ə,läg di'splā }

pseudocode [COMPUT SCI] In software engineering, an outline of a program written in English or the user's natural language; it is used to plan the program, and also serves as a source for test engineers doing software maintenance; it cannot be compiled. { 'süd·ō,kōd }

pseudocoloring [COMPUT SCI] A method of assigning arbitrary colors to the gray levels of a black-and-white image. It is popular in thermography (the imaging of heat), where hotter objects (with high pixel values) are assigned one color (for example, red), and cool objects (with low pixel values) are assigned another color (for example, blue), with other colors assigned to intermediate values. { ,süd·ō'kəl·ər·iŋ }

pseudoinstruction [COMPUT SCI] **1.** A symbolic representation in a compiler or interpreter. **2.** See quasi-instruction. { 'sü·dō·in,strək·shən }

pseudonoise code *See* pseudorandom noise code. { ¦süd·ō'nȯiz ¦kōd }

pseudo-operation [COMPUT SCI] An operation which is not part of the computer's operation repertoire as realized by hardware; hence, an extension of the set of machine operations. { ¦sü·dō ˌäp·ə'rā·shən }

pseudorandom noise code [COMMUN] A method of transmitting messages in the presence of interference or noise, in which each binary digit in the original message is encoded by a long series of binary digits with desirable autocorrelation properties. Also known as pseudonoise code. Abbreviated PN code. { ¦süd·ō¦ran·dəm 'nȯiz ˌkōd }

pseudorandom numbers [COMPUT SCI] Numbers produced by a definite arithmetic process, but satisfying one or more of the standard tests for randomness. { ˌsü·dō'ran·dəm 'nəm·bərz }

PSI *See* program specific information.

PSK *See* phase-shift keying.

psophometer [ENG] An instrument for measuring noise in electric circuits; when connected across a 600-ohm resistance in the circuit under study, the instrument gives a reading that by definition is equal to half of the psophometric electromotive force actually existing in the circuit. { sō'fäm·əd·ər }

psophometric electromotive force [ELECTR] The true noise voltage that exists in a circuit. { ¦säf·ə ¦me·trik i¦lek·trə¦mōd·iv 'fȯrs }

psophometric voltage [ELECTR] The noise voltage as actually measured in a circuit under specified conditions. { ¦säf·ə¦me·trik 'vōl·tij }

PSR *See* primary radar.

PSRR *See* power-supply rejection ratio.

PSTN *See* public switched telephone network.

PTD *See* posttuning drift.

PTM *See* pulse-time modulation.

p-type conductivity [ELECTR] The conductivity associated with holes in a semiconductor, which are equivalent to positive charges. { 'pē ¦tīp ˌkän,dək'tiv·əd·ē }

p-type crystal rectifier [ELECTR] Crystal rectifier in which forward current flows when the semiconductor is positive with respect to the metal. { 'pē ¦tīp 'krist·əl 'rek·təˌfī·ər }

p-type semiconductor [ELECTR] An extrinsic semiconductor in which the hole density exeeds the conduction electron density. { 'pē ¦tīp 'sem·i·kənˌdək·tər }

p^+-type semiconductor [ELECTR] A *p*-type semiconductor in which the excess mobile hole concentration is very large. { 'pē¦pləs ˌtīp 'sem·i·kənˌdək·tər }

p-type silicon [ELECTR] Silicon to which more impurity atoms of acceptor type (with valence of 3, such as boron) than of donor type (with valence of 5, such as phosphorus) have been added, with the result that the hole density exceeds the conduction electron density. { 'pē ¦tīp 'sil·ə ˌkän }

public address system *See* sound-reinforcement system. { 'pəb·lik ə'dres ˌsis·təm }

public communications service [COMMUN] Telephone or telegraph service provided for the transmission of unofficial communications for the public. { 'pəb·lik kəˌmyü·nə'kā·shənz ˌsər·vəs }

public correspondence [COMMUN] Any telecommunications which offices and stations at the disposal of the public must accept for transmission. { 'pəb·lik ˌkär·ə'spän·dəns }

public data [COMPUT SCI] Data that are open to all users, with no security measures necessary as far as reading is concerned. { 'pəb·lik 'dad·ə }

public-key algorithm [COMMUN] A cryptographic algorithm in which one key (usually the enciphering key) is made public and a different key (usually the deciphering key) is kept secret; it must not be possible to deduce the private key from the public key. { 'pəb·lik¦kē'al·gəˌrith·əm }

public network [COMMUN] A communications network that can be used by anyone, usually on a fee basis. { 'pəb·lik 'netˌwərk }

public pack [COMPUT SCI] A disk pack that can be used by any program and any application in a computer system. { 'pəb·lik 'pak }

public radio communications services [COMMUN] Land, mobile, and fixed services, the stations of which are open to public correspondence. { 'pəb·lik 'rād·ē·ō kəˌmyü·nə'kā·shənz ˌsər·və·səz }

public-safety frequency bands [COMMUN] Radio-frequency bands allocated in the United States for communication on land between base stations and mobile stations or between mobile stations by police, fire, highway, forestry, and emergency services. { 'pəb·lik ¦säf·tē 'frē·kwən·sē ˌbanz }

public-safety radio service [COMMUN] Any service of radio communication essential to either the discharge of non-Federal governmental functions relating to public safety responsibilities or the alleviation of an emergency endangering life or property, the radio transmitting facilities of which are defined as fixed, land, or mobile stations. { 'pəb·lik ¦säf·tē 'rād·ē·ō ˌsər·vəs }

public switched telephone network [COMMUN] The worldwide voice telephone network. Abbreviated PSTN. { ¦pəb·lik ˌswicht 'telˌfōn ˌnet ˌwərk }

puff *See* picofarad. { pəf }

pull-down menu [COMPUT SCI] A list of options for action that appears near the top of a display screen, usually overlaying the current contents of the screen without disrupting them, and usually in response to an indicator being pointed at an icon. { 'pu̇l ¦daun 'men·yü }

pulling [ELECTR] An effect that forces the frequency of an oscillator to change from a desired value; causes include undesired coupling to another frequency source or the influence of changes in the oscillator load impedance. { 'pu̇l·iŋ }

pulling figure [ELECTR] The total frequency change of an oscillator when the phase angle of the reflection coefficient of the load impedance varies through 360°, the absolute value of this reflection coefficient being constant at 0.20. { 'pu̇l·iŋ ˌfig·yər }

pulsating current [ELEC] Periodic direct current. { 'pəl,sād·iŋ 'kə·rənt }

pulsating electromotive force [ELEC] Sum of a direct electromotive force and an alternating electromotive force. Also known as pulsating voltage. { 'pəl,sād·iŋ i¦lek·trə¦mōd·iv 'fȯrs }

pulsating voltage *See* pulsating electromotive force. { 'pəl,sād·iŋ 'vōl·tij }

pulse amplifier [ELEC] An amplifier designed specifically to amplify electric pulses without appreciably changing their waveforms. { 'pəls ¦am·plə,fī·ər }

pulse-amplitude modulation [COMMUN] Amplitude modulation of a pulse carrier. Abbreviated PAM. { 'pəls ¦am·plə,tüd ,mäj·ə,lā·shən }

pulse-amplitude modulation-frequency modulation [COMMUN] System in which pulse-amplitude-modulated subcarriers are used to frequency-modulate a second carrier; binary digits are formed by the absence or presence of a pulse in an assigned position. { 'pəls ¦am·plə,tüd ,mäj·ə ,lā·shən 'frē·kwən·sē ,mäj·ə,lā·shən }

pulse analyzer [ELECTR] An instrument used to measure pulse widths and repetition rates, and to display on a cathode-ray screen the waveform of a pulse. { 'pəls ,an·ə,līz·ər }

pulse bandwidth [COMMUN] The bandwidth outside of which the amplitude of a pulse-frequency spectrum is below a prescribed fraction of the peak amplitude. { 'pəls 'band,width }

pulse cable [COMMUN] A communications cable, capable of transmitting pulses without unacceptable distortion. { 'pəls ,kā·bəl }

pulse carrier [COMMUN] A pulse train used as a carrier. { 'pəls ,kar·ē·ər }

pulse circuit [ELECTR] An active electrical network designed to respond to discrete pulses of current or voltage. { 'pəls ,sər·kət }

pulse code [COMMUN] A code consisting of various combinations of pulses, such as the Morse code, Baudot code, and the binary code used in computers. { 'pəls ,kōd }

pulse-coded scanning beam [NAV] **1.** A radio or radar beam which is swept over a sector of space and is accompanied by a repeated pattern of pulses that is varied to indicate the position of the beam in space. **2.** A system of ground equipment that generates such beams at microwave frequencies to furnish guidance to aircraft making microwave landings. Abbreviated PCSB. { 'pəls ¦kōd·əd 'skan·iŋ ,bēm }

pulse-code modulation [COMMUN] Modulation in which the peak-to-peak amplitude range of the signal to be transmitted is divided into a number of standard values, each having its own code; each sample of the signal is then transmitted as the code for the nearest standard amplitude. Abbreviated PCM. { 'pəls ¦kōd ,mäj·ə'lā·shən }

pulse coder *See* coder. { 'pəls ,kōd·ər }

pulse coding and correlation [COMMUN] A general technique concerning a variety of methods used to change the transmitted waveform and then decode upon its reception; pulse compression is a special form of pulse coding and correlation. { 'pəls ¦kōd·iŋ ən ,kär·ə'lā·shən }

pulse communication [COMMUN] Radio communication using pulse modulation. { 'pəls kə ,myü·nə,kā·shən }

pulse compression [ELECTR] **1.** A matched filter technique used to discriminate against signals which do not correspond to the transmitted signal. **2.** In radar, a process in which a relatively long pulse is frequency- or phase-modulated so that a properly designed receiver produces an output with a very narrow peak response much as though a very narrow pulse had been transmitted; valuable in achieving high range resolution in long transmitted pulses. { 'pəls kəm,presh·ən }

pulse-compression radar [ENG] A radar system in which the transmitted signal is linearly frequency-modulated or otherwise spread out in time to reduce the peak power that must be handled by the transmitter; signal amplitude is kept constant; the receiver uses a linear filter to compress the signal and thereby reconstitute a short pulse for the radar display. { 'pəls kəm ,presh·ən 'rā,där }

pulse counter [ELECTR] A device that indicates or records the total number of pulses received during a time interval. { 'pəls ,kaùnt·ər }

pulse decay time [COMMUN] The interval of time required for the trailing edge of a pulse to decay from 90% to 10% of the peak pulse amplitude. { 'pəls di'kā ,tīm }

pulse-delay network [ELECTR] A network consisting of two or more components such as resistors, coils, and capacitors, used to delay the passage of a pulse. { 'pəls di'lā 'net,wərk }

pulse demodulator [ELECTR] A device that recovers the modulating signal from a pulse-modulated wave. { ¦pəls dē¦mäj·ə,lād·ər }

pulse-density modulation *See* pulse-frequency modulation. { ¦pəls ,den·sət·ē ,mäj·ə'lā·shən }

pulse discriminator [ELECTR] A discriminator circuit that responds only to a pulse having a particular duration or amplitude. { 'pəls di ,skrim·ə,nād·ər }

pulsed oscillator [ELECTR] An oscillator that generates a carrier-frequency pulse or a train of carrier-frequency pulses as the result of self-generated or externally applied pulses. { 'pəlst 'äs·ə,lād·ər }

pulse droop [ELECTR] A distortion of an otherwise essentially flat-topped rectangular pulse, characterized by a decline of the pulse top. { 'pəls ,drüp }

pulsed transfer function [CONT SYS] The ratio of the z-transform of the output of a system to the z-transform of the input, when both input and output are trains of pulses. Also known as discrete transfer function; z-transfer function. { 'pəlst 'tranz·fər ,fəŋk·shən }

pulse duration [COMMUN] The time interval between the first and last instants at which the instantaneous amplitude reaches a stated fraction of the peak pulse amplitude. Also known as pulse length; pulse width (both deprecated usages). { 'pəls dù'rā·shən }

pulse-duration coder *See* coder. { 'pəls dù¦rā·shən 'kōd·ər }

pulse-duration discriminator [ELECTR] A circuit in which the sense and magnitude of the output are a function of the deviation of the pulse duration from a reference. { 'pəls dù|rā·shən di'skrim·ə,nād·ər }

pulse-duration modulation [COMMUN] Modulation of a pulse carrier wherein the value of each instantaneous sample of a modulating wave produces a pulse of proportional duration by varying the leading, trailing, or both edges of a pulse. Abbreviated PDM. Also known as pulse-length modulation; pulse-width modulation. { 'pəls dù|rā·shən ,mäj·ə,lā·shən }

pulse-duration modulation-frequency modulation [COMMUN] System in which pulse-duration-modulated subcarriers are used to frequency-modulate a second carrier. Also known as pulse-width modulation-frequency modulation. { 'pəls dù|rā·shən ,mäj·ə,lā·shən 'frē·kwən·sē ,mäj·ə,lā·shən }

pulse-forming network [ELECTR] A network used to shape the leading or trailing edge of a pulse. { 'pəls |fȯrm·iŋ 'net,wərk }

pulse-frequency modulation [COMMUN] A form of pulse-time modulation in which the pulse repetition rate is the characteristic that is varied. Abbreviated PFM. { 'pəls |frē·kwən·sē ,mäj·ə ,lā·shən }

pulse generator [ELEC] *See* impulse generator. [ELECTR] A generator that produces repetitive pulses or signal-initiated pulses. { 'pəls ,jen·ə ,rād·ər }

pulse height [ELECTR] The strength or amplitude of a pulse, measured in volts. { 'pəls ,hīt }

pulse-height discriminator [ELECTR] A circuit that produces a specified output pulse when and only when it receives an input pulse whose amplitude exceeds an assigned value. Also known as amplitude discriminator. { 'pəls ,hīt di'skrim·ə ,nād·ər }

pulse-height selector [ELECTR] A circuit that produces a specified output pulse only when it receives an input pulse whose amplitude lies between two assigned values. Also known as amplitude selector; diffractional pulse-height discriminator. { 'pəls ,hīt si'lek·tər }

pulse improvement threshold [COMMUN] In a constant-amplitude pulse-modulation system, the condition in which the peak pulse voltage is greater than twice the peak noise voltage, after selection and before nonlinear processes such as amplitude clipping and limiting. { 'pəls im |prüv·mənt 'thresh,hōld }

pulse integrator [ELECTR] An RC (resistance-capacitance) circuit which stretches in time duration a pulse applied to it. { 'pəls ,int·ə ,grād·ər }

pulse interference eliminator [ELECTR] Device which removes pulsed signals which are not precisely on the radar operating frequency. { 'pəls ,in·tər|fir·əns i,lim·ə,nād·ər }

pulse interference separator and blanker [ELECTR] Automatic interference blanker that will blank all video signals not synchronous with the radar pulse-repetition frequency. { 'pəls ,in·tər |fir·əns 'sep·ə,rād·ər ən 'blaŋk·ər }

pulse interference suppression [ELECTR] Means employed in radar, such as noting asynchronous returns or pulses clearly of unlikely widths or pulses at frequencies other than the operating frequency, to reduce confusion from pulses of other radars or pulsed deceptive countermeasures. { 'pəls ,in·tər|fir·əns sə'presh·ən }

pulse interleaving [COMMUN] A process in which pulses from two or more sources are combined in time-division multiplex for transmission over a common path. { 'pəls ,in·tər'lēv·iŋ }

pulse-interval modulation *See* pulse-spacing modulation. { 'pəls |in·tər·vəl ,mäj·ə,lā·shən }

pulse jitter [COMMUN] A relatively small variation of the pulse spacing in a pulse train; the jitter may be random or systematic, depending on its origin, and is generally not coherent with any pulse modulation imposed. { 'pəls ,jid·ər }

pulse length *See* pulse duration. { 'pəls ,leŋkth }

pulse-length modulation *See* pulse-duration modulation. { 'pəls |leŋkth ,mäj·ə,lā·shən }

pulse-link repeater [ELECTR] Arrangement of apparatus used in telephone signaling systems for receiving pulses from one E and M signaling circuit, and retransmitting corresponding pulses into another E and M signaling circuit. { 'pəls |liŋk ri'pēd·ər }

pulse-mode multiplexing [COMMUN] A type of time-division multiplexing employing pulse-amplitude modulation in which a sequence of pulses is repeatedly transmitted, and the amplitude of each pulse in the sequence is modulated by a different communication channel. { 'pəls |mōd 'məl·tə,pleks·iŋ }

pulse-modulated jamming [COMMUN] Use of jamming pulses of various widths and repetition rates. { 'pəls ,mäj·ə|lād·əd 'jam·iŋ }

pulse-modulated radar [ENG] Form of radar in which the radiation consists of a series of discrete pulses. { 'pəls ,mäj·ə|lād·əd 'rā,där }

pulse modulation [COMMUN] A system of modulation in which the amplitude, duration, position, or mere presence of discrete pulses may be so controlled as to represent the message to be communicated. { 'pəls ,mäj·ə,lā·shən }

pulse modulator [ELECTR] A device for carrying out the pulse modulation of a radio-frequency carrier signal. { 'pəls ,mäj·ə,lād·ər }

pulse-numbers modulation [COMMUN] Modulation in which a pulse carrier's pulse density per unit time varies in accordance with a modulating wave, by making systematic omissions without changing the phase or amplitude of the transmitted pulses; as an example, the omission of every other pulse could correspond to zero modulation, the reinsertion of some or all pulses then corresponds to positive modulation, and the omission of more than every other pulse corresponds to negative modulation. { 'pəls |nəm·bərz ,mäj·ə,lā·shən }

pulse operation [ELECTR] For microwave tubes, a method of operation in which the energy is delivered in pulses. { 'pəls ˌäp·əˌrā·shən }

pulse period [COMMUN] In telephony, time required for one opening and closing of the loop of a calling telephone; for example, the time required to open and close the dial pulse springs once. Also known as impulse period. { 'pəls ˌpir·ē·əd }

pulse-phase modulation *See* pulse-position modulation. { 'pəls ˌfāz ˌmäj·əˌlā·shən }

pulse-position modulation [COMMUN] Modulation of a pulse carrier wherein the value of each instantaneous sample of a modulating wave varies the position in time of a pulse relative to its unmodulated time of occurrence. Abbreviated PPM. Also known as pulse-phase modulation. { 'pəls pəˈzish·ən ˌmäj·əˌlā·shən }

pulse power [ELECTR] In radar, the average power transmitted during a pulse. While often called the radar's peak power, it is not to be confused with the instantaneous peak power in each cycle of the carrier frequency. { 'pəls ˌpaù·ər }

pulser [ELECTR] A modulator of the energy-storage type, using a pulse-forming network, to produce the pulsed voltage and current required by a microwave oscillator, such as a magnetron, in radar transmitters. { 'pəl·sər }

pulse radar [ENG] Radar in which the transmitter sends out high-power pulses that are spaced far apart in comparison with the duration of each pulse; the receiver is active for reception of echoes in the interval following each pulse. { 'pəls 'rāˌdär }

pulse-rate telemetering [ELECTR] Telemetering in which the number of pulses per unit time is proportional to the magnitude of the measured quantity. { 'pəls ˈrāt ˌtel·əˌmēd·ə·riŋ }

pulse recurrence rate *See* pulse repetition rate. { 'pəls ri'kə·rəns ˌrāt }

pulse recurrence time [COMMUN] Time elapsing between the start of one transmitted pulse and the next pulse; the reciprocal of the pulse repetition rate. { 'pəls ri'kə·rəns ˌtīm }

pulse regeneration [ELECTR] The process of restoring pulses to their original relative timings, forms, and magnitudes. { 'pəls riˌjen·əˌrā·shən }

pulse repeater [ELECTR] Device used for receiving pulses from one circuit and transmitting corresponding pulses into another circuit; it may also change the frequencies and waveforms of the pulses and perform other functions. { 'pəls riˌpēd·ər }

pulse repetition frequency *See* pulse repetition rate. { 'pəls ˌrep·əˈtish·ən ˌfrē·kwən·sē }

pulse repetition rate [ELECTR] The number of times per second that a pulse is transmitted. Abbreviated PRR. Also known as pulse recurrence rate; pulse repetition frequency (PRF). { 'pəls ˌrep·əˈtish·ən ˌrāt }

pulse rise time [COMMUN] The interval of time required for the leading edge of a pulse to rise from 10% to 90% of the peak pulse amplitude. { 'pəls 'rīz ˌtīm }

pulse scaler [ELECTR] A scaler that produces an output signal when a prescribed number of input pulses has been received. { 'pəls ˌskāl·ər }

pulse selector [ELECTR] A circuit or device for selecting the proper pulse from a sequence of telemetering pulses. { 'pəls siˌlek·tər }

pulse shaper [ELECTR] A transducer used for changing one or more characteristics of a pulse, such as a pulse regenerator or pulse stretcher. { 'pəls ˌshāp·ər }

pulse-spacing modulation [COMMUN] A form of pulse-time modulation in which the pulse spacing is varied. Also known as pulse-interval modulation. { 'pəls ˈspās·iŋ ˌmäj·əˌlā·shən }

pulse stretcher [ELECTR] A pulse shaper that produces an output pulse whose duration is greater than that of the input pulse and whose amplitude is proportional to the peak amplitude of the input pulse. { 'pəls ˌstrech·ər }

pulse subcarrier [COMMUN] One of a number of frequency-modulation carriers modulating a radio-frequency carrier, each of which is in turn pulse-modulated. { 'pəls 'səbˌkar·ē·ər }

pulse synthesizer [ELECTR] A circuit used to supply pulses that are missing from a sequence due to interference or other causes. { 'pəls ˌsin·thə ˌsīz·ər }

pulse-time modulation [COMMUN] Modulation in which the time of occurrence of some characteristic of a pulse carrier is varied from the unmodulated value; examples include pulse-duration, pulse-interval, and pulse-position modulation. Abbreviated PTM. { 'pəls ˈtīm ˌmäjəˌlā·shən }

pulse-train analysis [COMMUN] A Fourier analysis of a pulse train. { 'pəls ˈtrān əˌnal·ə·səs }

pulse transformer [ELECTR] A transformer capable of operating over a wide range of frequencies, used to transfer nonsinusoidal pulses without materially changing their waveforms. { 'pəls tranzˌfór·mər }

pulse transmitter [ELECTR] A pulse-modulated transmitter whose peak-power-output capabilities are usually large with respect to the average-power-output rating. { 'pəls tranzˌmid·ər }

pulse-type telemetering [COMMUN] Signal transmission system with pulses as a function of time, but independent of electrical magnitude; in a pulse-counting system the number of pulses per unit time corresponds to the measured variable; in pulse-width or pulse-duration types, the length of the pulse is controlled by the measured variable. { 'pəls ˈtīp ˌtel·əˌmēd·ə·riŋ }

pulse voltage *See* impulse voltage. { 'pəls ˌvōl·tij }

pulse width *See* pulse duration. { 'pəls ˌwidth }

pulse-width discriminator [ELECTR] Device that measures the pulse length of video signals and passes only those whose time duration falls into some predetermined design tolerance. { 'pəls ˈwidth di'skrim·əˌnād·ər }

pulse-width modulated static inverter [ELEC] A variation of the quasi-square-wave static inverter, operating at high frequency, in which the pulse width, and not the amplitude, of the square wave is adjusted to approximate the sine wave. { 'pəls ˈwidth ˈmäj·əˌlād·əd 'stad·ik inˌvərd·ər }

pulse-width modulation *See* pulse-duration modulation. { 'pəls ¦width ˌmäj·əˌlā·shən }

pulse-width modulation-frequency modulation *See* pulse-duration modulation-frequency modulation. { 'pəls ¦width ˌmäj·əˌlā·shən 'frē·kwən·sē ˌmäj·əˌlā·shən }

pulsing key [COMMUN] **1.** Method of passing voice frequency pulses over the line under control of a key at the original office; used with E and M supervision on intertoll dialing. **2.** System of signaling where numbered keys are depressed instead of using a dial. { 'pəls·iŋ ˌkē }

pulsing transformer [ELEC] Transformer that is designed to supply pulses of voltage or current. { 'pəls·iŋ tranzˌfȯr·mər }

pump [ELECTR] Of a parametric device, the source of alternating-current power which causes the nonlinear reactor to behave as a time-varying reactance. { pəmp }

pumped hydroelectric storage [ELEC] A method of energy storage in which excess electrical energy produced at times of low demand is used to pump water into a reservoir, and this water is released at times of high demand to operate hydroelectric generators. { 'pəmpt ¦hī·drō·iˈlek·trik 'stȯr·ij }

pumped tube [ELECTR] An electron tube that is continuously connected to evacuating equipment during operation; large pool-cathode tubes are often operated in this manner. { 'pəmpt ˌtüb }

pumping frequency [ELECTR] Frequency at which pumping is provided in a maser, quadrupole amplifier, or other amplifier requiring high-frequency excitation. { 'pəmp·iŋ ˌfrē·kwən·sē }

pump oscillator [ELECTR] Alternating-current generator that supplies pumping energy for maser and parametric amplifiers; operates at twice or some higher multiple of the signal frequency. { 'pəmp ˌäs·əˌlād·ər }

punch [COMPUT SCI] **1.** A device for making holes representing information in a medium such as cards or paper tape, in response to signals sent to it. **2.** A hole in a medium such as a card or paper tape, generally made in an array with other holes (or lack of holes) to represent information. { pənch }

punch card [COMPUT SCI] A medium by means of which data are fed into a computer in the form of rectangular holes punched in the card; once the primary data-output medium, it is now largely obsolete. Also known as card; punched card. { 'pənch ˌkärd }

punched card *See* punch card. { 'pəncht ˌkärd }

punch-through [ELECTR] An emitter-to-collector breakdown which can occur in a junction transistor with very narrow base region at sufficiently high collector voltage when the space-charge layer extends completely across the base region. { 'pənch,thrü }

punctuation bit [COMPUT SCI] A binary digit used to indicate the beginning or end of a variable-length record. { ˌpəŋk·chəˈwā·shən ˌbit }

puncture [ELEC] Disruptive discharge through insulation involving a sudden and large increase in current through the insulation due to complete failure under electrostatic stress. { 'pəŋk·chər }

puncture voltage [ELEC] The voltage at which a test specimen is electrically punctured. { 'pəŋk·chər ˌvōl·tij }

Pupin coil *See* loading coil. { pyüˈpēn ˌkȯil }

pup jack *See* tip jack. { 'pəp ˌjak }

pure procedure [COMPUT SCI] A procedure that never modifies any part of itself during execution. { 'pyůr prə¦sē·jər }

pure vanilla *See* vanilla. { 'pyůr vəˈnil·ə }

purge [COMPUT SCI] To remove data from computer storage so that space occupied by the data can be reused. { pərj }

purge date [COMPUT SCI] The date after which data are released and the storage area can be used for storing other data. { 'pərj ˌdāt }

purify [COMPUT SCI] To remove errors from data. { 'pyůr·əˌfī }

purity coil [ELECTR] A coil mounted on the neck of a color picture tube, used to produce the magnetic field needed for adjusting color purity; the direct current through the coil is adjusted to a value that makes the magnetic field orient the three individual electron beams so each strikes only its assigned color of phosphor dots. { 'pyůr·əd·ē ˌkȯil }

purity control [ELECTR] A potentiometer or rheostat used to adjust the direct current through the purity coil. { 'pyůr·əd·ē kənˌtrōl }

purity magnet [ELECTR] An adjustable arrangement of one or more permanent magnets used in place of a purity coil in a color cathode-ray. { 'pyůr·əd·ē ˌmag·nət }

purple plague [ELECTR] A compound formed by intimate contact of gold and aluminum, which appears on silicon planar devices and integrated circuits using gold leads bonded to aluminum thin-film contacts and interconnections, and which seriously degrades the reliability of semiconductor devices. { 'pər·pəl 'plāg }

push [COMPUT SCI] To add an item to a stack. { půsh }

push button [COMPUT SCI] A small area delineated on a graphical user interface whose selection by the user instructs the computer to perform a specific task. { 'půsh ˌbət·ən }

push-button dialing [ELECTR] Dialing a number by pushing buttons on the telephone rather than turning a circular wheel; each depressed button causes an oscillator to oscillate simultaneously at two different frequencies, generating a pair of audio tones which are recognized by central-office (or PBX) switching equipment as digits of a telephone number. Also known as dual-tone multifrequency dialing; tone dialing; touch call. { 'půsh ¦bət·ən 'dī·liŋ }

push-button switch [ELEC] A master switch that is operated by finger pressure on the end of an operating button. { 'půsh ¦bət·ən 'swich }

push-button tuner [ELECTR] A device that automatically tunes a radio receiver or other piece of equipment to a desired frequency when the button assigned to that frequency is pressed. { 'půsh ¦bət·ən 'tün·ər }

push-down automaton [COMPUT SCI] A nondeterministic, finite automaton with an auxiliary tape having the form of a push-down storage. { 'púsh ˌdaůn ȯ'täm·əˌtän }

push-down list [COMPUT SCI] An ordered set of data items so constructed that the next item to be retrieved is the item most recently stored; in other words, last-in, first-out (LIFO). { 'púsh ˌdaůn ˌlist }

push-down storage [COMPUT SCI] A computer storage in which each new item is placed in the first location in the storage and all the other items are moved back one location; it thus follows the principle of a push-down list. Also known as cellar; nesting storage; running accumulator. { 'púshˌdaůn ˌstȯr·ij }

pushing [COMPUT SCI] The placing of a data element at the top of a stack. { 'púsh·iŋ }

push-pull amplifier [ELECTR] A balanced amplifier employing two similar electron tubes or equivalent amplifying devices working in phase opposition. { 'púsh ¦půl 'am·pləˌfī·ər }

push-pull currents See balanced currents. { 'púsh ¦půl 'kə·rənts }

push-pull electret transducer [ELECTR] A type of transducer in which a foil electret is sandwiched between two electrodes and is specially treated or arranged so that the electrodes exert forces in opposite directions on the diaphragm, and the net force is a linear function of the applied voltage. { 'púsh ¦půl i'lek·trət tranz'dü·sər }

push-pull magnetic amplifier [ELECTR] A realization of a push-pull amplifier using magnetic amplifiers. { 'púsh ¦půl mag'ned·ik 'am·pləˌfī·ər }

push-pull oscillator [ELECTR] A balanced oscillator employing two similar electron tubes or equivalent amplifying devices in phase opposition. { 'púsh ¦půl 'äs·əˌlād·ər }

push-pull transformer [ELECTR] An audio-frequency transformer having a center-tapped winding and designed for use in a push-pull amplifier. { 'púsh ¦půl tranz'fȯr·mər }

push-pull transistor [ELECTR] **1.** A realization of a push-pull amplifier using transistors. **2.** A Darlington circuit in which the two transistors required for a push-pull amplifier exist in a single substrate. { 'púsh ¦půl tran'zis·tər }

push-pull voltages See balanced voltages. { 'púsh ¦půl 'vōl·tij·əz }

push-push amplifier [ELECTR] An amplifier employing two similar electron tubes with grids connected in phase opposition and with anodes connected in parallel to a common load, usually used as a frequency multiplier to emphasize even-order harmonics; transistors may be used in place of tubes. { 'púsh ¦púsh 'am·pləˌfī·ər }

push-to-talk circuit [ELEC] Simplex circuit in which changeover from the receive to transmit state is accomplished by depressing a single spring-return switch, and releasing the switch returns the circuit to the receive state; the push-to-talk switch is located on microphones and telephone handsets; it is most often applied to radio circuits. { 'púsh tə 'tȯlk ˌsər·kət }

push-up list [COMPUT SCI] An ordered set of data items so constructed that the next item to be retrieved will be the item that was inserted earliest in the list, resulting in a first-in, first-out (FIFO) structure. { 'púshˌəp ˌlist }

put [COMPUT SCI] A programming instruction that causes data to be written from computer storage into a file. { půt }

pyrometer [ENG] Any of a broad class of temperature-measuring devices; they were originally designed to measure high temperatures, but some are now used in any temperature range; includes radiation pyrometers, thermocouples, resistance pyrometers, and thermistors. { pī 'räm·əd·ər }

pyrone detector [ELECTR] Crystal detector in which rectification occurs between iron pyrites and copper or other metallic points. { 'pīˌrōn diˌtek·tər }

Q

Q [PHYS] A measure of the ability of a system with periodic behavior to store energy equal to 2π times the average energy stored in the system divided by the energy dissipated per cycle. Also known as Q factor; quality factor; storage factor.

QAM *See* quadrature amplitude modulation.

QBE *See* query by example.

Q factor *See* Q. { 'kyü ,fak·tər }

Q meter [ENG] A direct-reading instrument which measures the Q of an electric circuit at radio frequencies by determining the ratio of inductance to resistance, and which has also been developed to measure many other quantities. Also known as quality-factor meter. { 'kyü ,mēd·ər }

Q multiplier [ELECTR] A filter that gives a sharp response peak or a deep rejection notch at a particular frequency, equivalent to boosting the Q of a tuned circuit at that frequency. { 'kyü 'məl·tə,plī·ər }

Q point *See* quiescent operating point. { 'kyü ,point }

QPSK *See* quadrature phase-shift keying.

Q signal [COMMUN] A three-letter abbreviation starting with Q, used in the International List of Abbreviations for radiotelegraphy to represent complete sentences. [ELECTR] The quadrature component of the chrominance signal in analog color television, having a bandwidth of 0 to 0.5 megahertz; it consists of +0.48(R-Y) and +0.41(B-Y), where Y is the luminance signal, R is the red camera signal, and B is the blue camera signal. { 'kyü ,sig·nəl }

quad [ELEC] A series of four separately insulated conductors, generally twisted together in pairs. [ELECTR] A series-parallel combination of transistors; used to obtain increased reliability through double redundancy, because the failure of one transistor will not disable the entire circuit. { kwäd }

quadded cable [ELEC] Cable in which at least some of the conductors are arranged in the form of quads. { 'kwäd·əd 'kā·bəl }

quadded redundancy [COMPUT SCI] A form of redundancy in which each logic gate is quadruplicated, and the outputs of one stage are interconnected to the inputs of the succeeding stage by a connection pattern so that errors made in earlier stages are overridden in later stages, where the original correct signals are restored. { 'kwäd·əd ri'dən·dən·sē }

quad density [COMPUT SCI] A format for floppy-disk storage that holds four times as much data as would normally be contained. { 'kwäd 'den·səd·ē }

quad in-line [ELECTR] An integrated-circuit package that has two rows of staggered pins on each side, spaced closely enough together to permit 48 or more pins per package. Abbreviated QUIL. { 'kwäd ,in'līn }

quadraphonic sound system [ENG ACOUS] A system for reproducing sound by means of four loudspeakers properly situated in the listening room, usually at the four corners of a square, with each loudspeaker being fed its own identifiable segment of the program signal. Also known as four-channel sound system. { ¦kwä·drə¦fän·ik 'saund }

quadrature amplifier [ELECTR] An amplifier that shifts the phase of a signal 90°; used in an analog color television receiver to amplify the 3.58-megahertz chrominance subcarrier and shift its phase 90° for use in the Q demodulator. { 'kwä·drə·chər ,am·plə,fī·ər }

quadrature amplitude modulation [COMMUN] **1.** Quadrature modulation in which the two carrier components are amplitude-modulated. **2.** A digital modulation technique in which digital information is encoded in bit sequences of specified length and these bit sequences are represented by discrete amplitude levels of an analog carrier, by a phase shift of the analog carrier from the phase that represented the previous bit sequence by a multiple of 90°, or by both. **3.** Abbreviated QAM. { ¦kwäd·rə·chər ,am·plə,tüd ,mäj·ə'lā·shən }

quadrature component [ELEC] A vector representing an alternating quantity which is in quadrature (at 90°) with some reference vector. *See* reactive component. { 'kwä·drə·chər kəm ,pō·nənt }

quadrature current *See* reactive current. { 'kwä·drə·chər ,kə·rənt }

quadrature modulation [COMMUN] Modulation of two carrier components 90° apart in phase by separate modulating functions. { 'kwä·drə·chər ,mäj·ə'lā·shən }

quadrature partial-response keying [COMMUN] A modulation technique in which two orthogonally phased carriers are combined, each

carrier is modulated by one of the digital bit streams to one of three levels. Abbreviated QPRK. { 'kwä·drə·chər ¦pär·shəl ri'spāns ˌkē·iŋ }

quadrature phase-shift keying [COMMUN] Phase-shift keying in which four different phase angles are used, usually spaced 90° apart. Abbreviated QPSK. Also known as quadriphase; quaternary phase-shift keying. { ¦kwäd·rə·chər 'fāz,shift ˌkē·iŋ }

quadriphase See quadrature phase-shift keying. { 'kwäd·rəˌfāz }

quadruplex circuit [ELEC] Telegraph circuit designed to carry two messages in each direction at the same time. { 'kwä·drəˌpleks ˌsər·kət }

quadrupole amplifier [ELECTR] A low-noise parametric amplifier consisting of an electron-beam tube in which quadrupole fields act on the fast cyclotron wave of the electron beam to produce high amplification at frequencies in the range of 400-800 megahertz. { 'kwä·drəˌpōl 'am·plə ˌfī·ər }

quad word [COMPUT SCI] A word 16 bytes long. { 'kwäd ˌwərd }

qualified name [COMPUT SCI] A name that is further identified by associating it with additional names, usually the names of things that contain the thing being named. { 'kwäl·əˌfīd ¦nām }

qualifier [COMPUT SCI] A name that is associated with another name to give additional information about the latter and distinguish it from other things having the same name. { 'kwäl·əˌfī·ər }

quality factor See Q. { 'kwäl·əd·ē ˌfak·tər }

quality-factor meter See Q meter. { 'kwäl·əd·ē ˌfak·tər ˌmēd·ər }

quality program [COMPUT SCI] A computer program that is correct, reliable, efficient, maintainable, flexible, testable, portable, and reusable. { ¦kwäl·əd·ē 'prō·grəm }

quantity [COMPUT SCI] In computers, a positive or negative real number in the mathematical sense; the term quantity is preferred to the term number in referring to numerical data; the term number is used in the sense of natural number and reserved for "the number of digits," the "number of operations," and so forth. { 'kwän·əd·ē }

quantity of electricity See charge. { 'kwän·əd·ē əv ˌi,lek'tris·əd·ē }

quantization [COMMUN] Division of the range of values of a wave into a finite number of subranges, each of which is represented by an assigned or quantized value within the subrange. { ˌkwän·tə'zā·shən }

quantization distortion [COMMUN] Inherent distortion introduced in the process of quantization of a waveform. Also known as quantization noise; quantumization distortion; quantumization noise. { ˌkwän·tə'zā·shən di,stór·shən }

quantization level [COMMUN] Discrete value of the output designating a particular subrange of the input. { ˌkwän·tə'zā·shən ˌlev·əl }

quantization noise See quantization distortion. { ˌkwän·tə'zā·shən ˌnȯiz }

quantized electronic structure [ELECTR] A material that confines electrons in such a small space that their wave-like behavior becomes important and their properties are strongly modified by quantum-mechanical effects. { ¦kwän,tīzd i,lek¦trän·ik 'strək·chər }

quantized frequency modulation [COMMUN] Frequency modulation that involves quantization; it uses time and frequency redundancy within a voice frequency channel during each transmitted symbol, used to combat distortion due to multipath, selective fading, and noise spikes. { 'kwänˌtīzd 'frē·kwən·sē ˌmäj·əˌlā·shən }

quantized pulse modulation [COMMUN] Pulse modulation that involves quantization, such as pulse-numbers modulation and pulse-code modulation. { 'kwänˌtīzd 'pəls ˌmäj·əˌlā·shən }

quantizer [COMMUN] A processing step that intentionally reduces the precision of discrete cosine transform coefficients. [ELECTR] A device that measures the magnitude of a time-varying quantity in multiples of some fixed unit, at a specified instant or specified repetition rate, and delivers a proportional response that is usually in pulse code or digital form. { 'kwänˌtīz·ər }

quantum [COMMUN] One of the subranges of possible values of a wave which is specified by quantization and represented by a particular value within the subrange. { 'kwän·təm }

quantum computer [COMPUT SCI] A computer in which the time evolution of the state of the individual switching elements of the computer is governed by the laws of quantum mechanics. { 'kwän·təm kəm¦pyüd·ər }

quantum dot [ELECTR] A quantized electronic structure in which electrons are confined with respect to motion in all three dimensions. { ˌkwänt·əm 'dät }

quantum efficiency [ELECTR] The average number of electrons photoelectrically emitted from a photocathode per incident photon of a given wavelength in a phototube. { 'kwän·təm i,fish·ən·sē }

quantum electronics [ELECTR] The branch of electronics associated with the various energy states of matter, motions within atoms or groups of atoms, and various phenomena in crystals; examples of practical applications include the atomic hydrogen maser and the cesium atomic-beam resonator. { 'kwän·təm ˌi,lek'trän·iks }

quantum Hall effect [ELECTR] A phenomenon exhibited by certain semiconductor devices at low temperatures and high magnetic fields, whereby the Hall resistance becomes precisely equal to $(h/e^2)/n$, where h is Planck's constant, e is the electronic charge, and n is either an integer or a rational fraction. Also known as von Klitzing effect. { 'kwän·təm 'hȯl i,fekt }

quantumization distortion See quantization distortion. { ˌkwän·tə·mə'zā·shən di,stór·shən }

quantumization noise See quantization distortion. { ˌkwän·tə·mə'zā·shən ˌnȯiz }

quantum well [ELECTR] A thin layer of material (typically between 1 and 10 nanometers thick) within which the potential energy of an electron is less than outside the layer, so that the motion of the electron perpendicular to the layer is quantized. { ¦kwän·təm 'wel }

quantum well infrared photodetector [ELECTR] A detector of infrared radiation composed of numerous alternating layers of controlled thickness of gallium arsenide and aluminum gallium arsenide; the spectral response of the device can be tailored within broad limits by adjusting the aluminum-to-gallium ratio and the thicknesses of the layers during growth. Abbreviated QWIP. { ˈkwänt·əm ˌwel ˌin·frəˈred ˌfōd·ō·diˈtek·tər }

quantum well injection transit-time diode [ELECTR] An active microwave diode that employs resonant tunneling through a gallium arsenide quantum well located between two aluminum gallium arsenide barriers to inject electrons into an undoped gallium arsenide drift region. Abbreviated QWITT diode. { ˌkwän·təm ˈwel in ˌjek·shən ˈtranz·it ˌtīm ˈdī,ōd }

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quantum wire [ELECTR] A strip of conducting material about 10 nanometers or less in width and thickness that displays quantum-mechanical effects such as the Aharanov-Bohm effect and universal conductance fluctuations. { ˈkwän·təm ˈwīr }

quarternary phase-shift keying [ELECTR] Modulation of a microwave carrier with two parallel streams of nonreturn-to-zero data in such a way that the data is transmitted as 90° phase shifts of the carrier; this gives twice the message channel capacity of binary phase-shift keying in the same bandwidth. Abbreviated QPSK. { ˈkwät·əˌner·ē ˈfāz ˌshift ˌkē·iŋ }

quarter-square multiplier [COMPUT SCI] A device used to carry out function multiplication in an analog computer by implementing the algebraic identity $xy = \frac{1}{4}[(x+y)^2 - (x-y)^2]$. { ˈkwȯrd·ər ˌskwer ˈməl·təˌplī·ər }

quarter-wave [ELECTROMAG] Having an electrical length of one quarter-wavelength. { ˈkwȯrd·ər ˌwāv }

quarter-wave antenna [ELECTROMAG] An antenna whose electrical length is equal to one quarter-wavelength of the signal to be transmitted or received. { ˈkwȯrd·ər ˌwāv anˈten·ə }

quarter-wave attenuator [ELECTROMAG] Arrangement of two wire gratings, spaced an odd number of quarter-wavelengths apart in a waveguide, used to attenuate waves traveling through in one direction. { ˈkwȯrd·ər ˌwāv əˈten·yəˌwād·ər }

quarter-wave line *See* quarter-wave stub. { ˈkwȯrd·ər ˌwāv ˌlīn }

quarter-wave matching section *See* quarter-wave transformer. { ˈkwȯrd·ər ˌwāv ˈmach·iŋ ˌsek·shən }

quarter-wave stub [ELECTROMAG] A section of transmission line that is one quarter-wavelength long at the fundamental frequency being transmitted; when shorted at the far end, it has a high impedance at the fundamental frequency and all odd harmonics, and a low impedance for all even harmonics. Also known as quarter-wave line; quarter-wave transmission line. { ˈkwȯrd·ər ˌwāv ˌstəb }

quarter-wave termination [ELECTROMAG] Metal plate and a wire grating spaced about one-fourth of a wavelength apart in a waveguide, with the plate serving as the termination of the guide; waves reflected from the metal plate are canceled by waves reflected from the grating so that all energy is absorbed (none is reflected) by the quarter-wave termination. { ˈkwȯrd·ər ˌwāv tər·məˈnā·shən }

quarter-wave transformer [ELECTROMAG] A section of transmission line approximately one quarter-wavelength long, used for matching a transmission line to an antenna or load. Also known as quarter-wave matching section. { ˈkwȯrd·ər ˌwāv tranzˈfȯr·mər }

quarter-wave transmission line *See* quarter-wave stub. { ˈkwȯrd·ər ˌwāv tranzˈmish·ən ˌlīn }

quartz crystal [ELECTR] A natural or artificially grown piezoelectric crystal composed of silicon dioxide, from which thin slabs or plates are carefully cut and ground to serve as a crystal plate. { ˈkwȯrts ˌkrist·əl }

quartz-crystal filter [ELECTR] A filter which utilizes a quartz crystal; it has a small bandwidth, a high rate of cutoff, and a higher unloaded Q than can be obtained in an ordinary resonator. { ˈkwȯrts ˌkrist·əl ˈfil·tər }

quartz-crystal resonator [ELECTR] A quartz plate whose natural frequency of vibration is used to control the frequency of an oscillator. Also known as quartz resonator. { ˈkwȯrts ˌkrist·əl ˈrez·ən ˌād·ər }

quartz delay line [ELECTR] An acoustic delay line in which quartz is used as the medium of sound transmission. { ˈkwȯrts diˈlā ˌlīn }

quartz-fiber electroscope [ELECTR] Electroscope in which a gold-plated quartz fiber serves the same function as the gold leaf of a conventional electroscope. { ˈkwȯrts ˈfī·bər iˈlek·trəˌskōp }

quartz-iodine lamp [ELECTR] An electric lamp having a tungsten filament and a quartz envelope filled with iodine vapor. { ˈkwȯrts ˈī·əˌdīn ˌlamp }

quartz lamp [ELECTR] A mercury-vapor lamp having a transparent envelope made from quartz instead of glass; quartz resists heat, permitting higher currents, and passes ultraviolet rays that are absorbed by ordinary glass. { ˈkwȯrts ˈlamp }

quartz oscillator [ELECTR] An oscillator in which the frequency of the output is determined by the natural frequency of vibration of a quartz crystal. { ˈkwȯrts ˈäs·əˌlād·ər }

quartz plate *See* crystal plate. { ˈkwȯrts ˈplāt }

quartz resonator *See* quartz-crystal resonator. { ˈkwȯrts ˈrez·ənˌād·ər }

quartz strain gage [ELECTR] A device used to measure small deformations of a substance by determining the resulting voltage that develops in a quartz attached to it. { ˈkwȯrts ˈstrānˌgāj }

quasi-instruction [COMPUT SCI] An expression in a source program which resembles an instruction

in form, but which does not have a corresponding machine instruction in the object program, and is directed to the assembler or compiler. Also known as pseudoinstruction. { ¦kwä·zē in'strək·shən }

quasi-linear feedback control system [CONT SYS] Feedback control system in which the relationships between the pertinent measures of the system input and output signals are substantially linear despite the existence of nonlinear elements. { ¦kwä·zē 'lin·ē·ər 'fēd,bak kən'trōl ,sis·təm }

quasi-linear system [CONT SYS] A control system in which the relationships between the input and output signals are substantially linear despite the existence of nonlinear elements. { ¦kwä·zē 'lin·ē·ər 'sis·təm }

quasi-parallel execution [COMPUT SCI] The execution of a collection of coroutines by a single processor that can work on only one coroutine at a time; the order of execution is arbitrary and each coroutine is executed independently of the rest. { ¦kwä·zē 'par·ə,lel ,ek·sə'kyü·shən }

quasi-random code generator [COMMUN] High-speed coded information source used in the design and evaluation of wide-band communications links by providing a means of closed-loop testing. { ¦kwä·zē 'ran·dəm 'kōd ,jen·ə,rād·ər }

quasi-square-wave static inverter [ELEC] A static inverter that generates two square waves superimposed on one another to approximate an ac sine wave, using a silicon-controlled rectifier bridge and control circuit to control the pulse width and amplitude of the resulting wave, thereby achieving regulation. { ¦kwä·zē 'skwer ,wāv 'stad·ik in'vərd·ər }

quaternary phase-shift keying *See* quadrature phase-shift keying. { ¦kwät·ər,ner·ē 'fāz ,shift ,kē·iŋ }

quaternary signaling [COMMUN] An electrical communications mode in which information is passed by the presence and absence, or plus and minus variations, of four discrete levels of one parameter of the signaling medium. { 'kwät·ən ,er·ē 'sig·nə·liŋ }

qubit [COMPUT SCI] In quantum computation, a superposition of the ground state and the excited state of an elementary two-level quantum system (such as a two-level atom or a nuclear spin), corresponding to a classical bit that is either 0 (corresponding to the ground state) or 1 (corresponding to the excited state). { 'kyü·bit }

quenched spark gap [ELEC] A spark gap having provisions for rapid deionization; one form consists of many small gaps between electrodes that have relatively large mass and are good radiators of heat, the electrodes serve to cool the gaps rapidly and thereby stop conduction. { 'kwencht 'spärk ,gap }

quench frequency [ELECTR] Number of times per second that a circuit is caused to go in and out of oscillation. { 'kwench ,frē·kwən·sē }

quenching [ELECTR] **1.** The process of terminating a discharge in a gas-filled radiation-counter tube by inhibiting reignition. **2.** Reduction of the intensity of resonance radiation, resulting from deexcitation of atoms, which would otherwise have emitted this radiation, in collisions with electrons or other atoms in a gas. { 'kwench·iŋ }

quenching frequency [ELECTR] The frequency of an alternating voltage that is applied to a superregenerative detector stage to prevent sustained oscillation. { 'kwench·iŋ ,frē·kwən·sē }

quench oscillator [ELECTR] Circuit in a superregenerative receiver which produces the frequency signal. { 'kwench ,äs·ə,lād·ər }

query [COMPUT SCI] A computer instruction to interrogate a database. { 'kwir·ē }

query by example [COMPUT SCI] A software product used to search a database for information having formats or ranges of values specified by English-like statements that indicate the desired results. Abbreviated QBE. { 'kwir·ē bī ig'zam·pəl }

query language [COMPUT SCI] A generalized computer language that is used to interrogate a database. { 'kwir·ē ,laŋ·gwij }

query layer [COMPUT SCI] A program that mediates between data sources on the World Wide Web and a user's query by breaking the query into subqueries against each information source and then gathering together the results for presentation to the user. { 'kwir·ē ,lā·ər }

query program [COMPUT SCI] A computer program that allows a user to retrieve information from a database and have it displayed on a terminal or printed out. { 'kwir·ē ,prō·gram }

QUEST *See* quantized electronic structure. { kwest }

question-answering system [COMPUT SCI] An information retrieval system in which a direct answer is expected in response to a submitted query, rather than a set of references that may contain the answers. { 'kwes·chən 'an·sə·riŋ ,sis·təm }

queue [COMPUT SCI] **1.** A list of items waiting for attention in a computer system, generally ordered according to some criteria. **2.** A linear list whose elements are inserted and deleted in a first-in-first-out order. { kyü }

queued access method [COMPUT SCI] A set of precedures controlled by queues for efficient transfer of data between a computer and input-output devices. { 'kyüd 'ak,ses ,meth·əd }

queue-driven system [COMPUT SCI] A software system that uses many queues for tasks in various phases of processing. { 'kyü ¦driv·ən ,sis·təm }

queuing network model [COMPUT SCI] A model that represents a computer system by a network of devices through which customers (such as transactions, processes, or server requests) flow and queues may form at each device due to its finite service rate. { 'kyü·iŋ ,net,wərk ,mäd·əl }

quibinary [COMPUT SCI] A numeration system used in data processing, in which each decimal digit is represented by seven binary digits, a group of five which are coefficients of 8, 6, 4, 2, and 0, and a group of two which are coefficients of 1 and 0. { 'kwib·ə,ner·ē }

quick-break fuse [ELEC] A fuse designed to draw out the arc and break the circuit rapidly when the fuse wire melts, generally by separating the broken ends with a spring. { 'kwik ¦brāk 'fyüz }

quick-break switch [ELEC] A switch that breaks a circuit rapidly, independently of the rate at which the switch handle is moved, to minimize arcing. { 'kwik ¦brāk 'swich }

quick-make switch [ELEC] Switch or circuit breaker which has a high contact-closing speed, independent of the operator. { 'kwik ¦māk 'swich }

quiesce [COMPUT SCI] To prevent a computer system from starting new jobs so that the system gradually winds down as current jobs are completed, usually in preparation for a planned outage. { kwē'es }

quiescent [ELECTR] Pertaining to a circuit element which has no input signal, so that it does not perform its active function. { kwē'es·ənt }

quiescent-carrier telephony [COMMUN] A radiotelephony system in which the carrier is suppressed whenever there are no voice signals to be transmitted. { kwē'es·ənt ¦kar·ē·ər tə'lef·ə·nē }

quiescent operating point [ELECTR] The currents and voltages in an electronic circuit when the input signal is replaced by its average value, so that all currents and voltages can be approximated by series expansions around this point. Also known as Q point. { kwē,es·ənt 'äp·ə,rād·iŋ ,pȯint }

quiescent period [COMMUN] Resting period, or the period between pulse transmissions. { kwē'es·ənt ¦pir·ē·əd }

quiescent point [ELECTR] The point on the characteristic curve of an amplifier representing the conditions that exist when the input signal equals zero. { kwē'es·ənt ¦pȯint }

quiescent push-pull [ELECTR] Push-pull output stage so arranged in a radio receiver that practically no current flows when an input signal is not present. { kwē'es·ənt ¦půsh ¦půl }

quiet automatic volume control See delayed automatic gain control. { 'kwī·ət ¦ȯd·ə¦mad·ik 'väl·yəm kən,trōl }

quiet battery [ELECTR] Source of energy of special design or with added filters which is sufficiently quiet and free from interference that it may be used for speech transmission. Also known as talking battery. { 'kwī·ət 'bad·ə·rē }

quieting sensitivity [ELECTR] Minimum signal input to a frequency-modulated receiver which is required to give a specified output signal-to-noise ratio under specified conditions. { 'kwī·əd·iŋ ,sen·sə,tiv·əd·ē }

quiet tuning [ELECTR] Circuit arrangement for silencing the output of a radio receiver, except when it is accurately tuned to an incoming carrier wave. { 'kwī·ət 'tün·iŋ }

QWITT diode See quantum well injection transit-time diode. { ¦kyü¦dəb·əl,yü¦ī¦tē¦tē 'dī,ōd }

R

race condition [ELEC] An ambiguous condition occurring in control counters when one flip-flop changes to its next state before a second one has had sufficient time to latch. { 'rās kən,dish·ən }

raceway [ELEC] A channel used to hold and protect wires, cables, or busbars. Also known as electric raceway. { 'rās,wā }

rack panel [ELECTR] A panel designed for mounting on a relay rack; its width is 19 inches (48.26 centimeters), height is a multiple of 1 ¾ inches (4.445 centimeters), and the mounting notches are standardized as to size and position. { 'rak ,pan·əl }

racon See radar beacon. { 'rā,kän }

radar [ENG] A system using beamed and reflected radio-frequency energy for detecting, locating, and examining objects, measuring distance or altitude, assisting in navigation, military operations, air traffic management, and weather appraisal, and many other military and civil purposes. Timing of the return of reflected energy and examination of its nature are fundamental to all radar applications. Derived from radio detection and ranging. { 'rā,där }

radar altimeter [NAV] A radio altimeter, useful at altitudes much greater than the 5000-foot (1500-meter) limit of frequency-modulated radio altimeters, in which simple pulse-type radar equipment is used to send a pulse straight down from an aircraft and to measure its total time of travel to the surface and back to the aircraft. Also known as high-altitude radio altimeter; pulse-type altimeter. { 'rā,där al'tim·əd·ər }

radar antenna [ELECTROMAG] A device which radiates radio-frequency energy in a radar system, concentrating the transmitted power in the direction of the target, and which provides a large area to collect the echo power of the returning wave. { 'rā,där an'ten·ə }

radar antijamming [ELECTR] Measures taken to counteract radar jamming (electronic attack). { 'rā,där ,ant·i'jam·iŋ }

radar attenuation [ELECTROMAG] Ratio of the power delivered by the transmitter to the transmission line connecting it with the transmitting antenna, to the power reflected from the target which is delivered to the receiver by the transmission line connecting it with the receiving antenna. { 'rā,där ə,ten·yə'wā·shən }

radar beacon [NAV] A radar receiver-transmitter that transmits a strong coded radar signal whenever its radar receiver is triggered by an interrogating radar on an aircraft or ship; the coded beacon reply can be used by the navigator to determine his own position in terms of bearing and range from the beacon. Also known as racon; radar transponder. { 'rā,där ,bē·kən }

radar beam [ELECTROMAG] The movable beam of radio-frequency energy produced by a radar transmitting antenna; its shape is commonly defined as the loci of all points at which the power has decreased to one-half of that at the center of the beam. { 'rā,där ,bēm }

radar cell [ELECTROMAG] Volume whose dimensions are one radar pulse length by one radar beam width. { 'rā,där ,sel }

radar clutter See clutter. { 'rā,där ,kləd·ər }

radar command guidance [ENG] A missile guidance system in which radar equipment at the launching site determines the positions of both target and missile continuously, computes the missile course corrections required, and transmits these by radio to the missile as commands. { 'rā,där kə'mand ,gīd·əns }

radar constant [ELECTR] The product of the factors of radar performance equation that describe characteristics of the particular radar to which the equations are applied; these include peak power, antenna gain or aperture, beam width, pulse length, pulse repetition frequency, wavelength, polarization, and noise level of the receiver. { 'rā,där ,kän·stənt }

radar contact [ENG] Recognition and identification of an echo on a radar screen; an aircraft is said to be on radar contact when its radar echo can be seen and identified on a PPI (plan-position indicator) display. { 'rā,där ,kän,takt }

radar control [ELECTR] Guidance, direction, or employment exercised over an aircraft, guided missile, gun battery, or the like, by means of, or with the aid of, radar. { 'rā,där kən,trōl }

radar control and interface apparatus [ELECTR] That subsystem of a radar that acts on the output of the receiver to provide significant reports to the system using that radar and also to control the radar in ways appropriate to the situation; constituted of a human operator and visual display in elementary radar, and of computer operations

and data displays for human management in more modern radar. { 'rā,där kən,trōl ənd in·tər ,fās ,ap·ə,rad·əs }

radar countermeasure [ELECTR] Electronic and electromagnetic actions used against enemy radar, such as jamming and confusion reflectors. Abbreviated RCM. { 'rā,där 'kaùnt·ər,mezh·ər }

radar cross section [ELECTROMAG] In representing a radar target, a convenient expression of the incident-signal intercept area that, if the intercepted signal were reradiated isotropically, would return to the radar the same signal strength as the target actually does. { 'rā,där 'krȯs ,sek·shən }

radar data filtering [ELECTR] Quality analysis process that causes the computer to reject certain radar data and to alert personnel of mapping and surveillance consoles to the rejection. { 'rā ,där 'dad·ə ,fil·triŋ }

radar display [ELECTR] Visual presentation of the output of a radar receiver produced either on the screen of a cathode-ray tube or in computer-generated displays of symbols and notations based on that output in more automated systems. Also known as radar presentation. { 'rā ,där di,splā }

radar display formats [ELECTR] Any of a variety of visual representations of radar receiver output to assist the operator in interpreting the data, managing the radar, and making reasonable reports to the user system. Many of the formats have been given letter names, such as the A-display (or A-scope), and so on; the PPI (plan position indicator), RHI (range-height indicator), A-scope, and B-scope are among the most frequently used. Also known as display formats. { 'rā,där di,splā ,fȯr,matz }

radar distribution switchboard [ELECTR] Switching panel for connecting video, trigger, and bearing from any one of five systems, to any or all of 20 repeaters; also contains order lights, bearing cutouts, alarms, test equipment, and so forth. { 'rā,där ,dis·trə'byü·shən ,swich,bȯrd }

radar echo *See* echo. { 'rā,där ,ek·ō }

radar equation [ELECTROMAG] An equation that relates the transmitted and received powers and antenna gains of a primary radar system to the echo area and distance of the radar target. { 'rā ,där i,kwā·zhən }

radar frequency band [ELECTROMAG] A frequency band of microwave radiation in which radar operates. { 'rā,där 'frē·kwən·sē ,band }

radar image [ELECTR] The image of an object, a vehicle or an entire scene, which is produced on a radar display or in an appropriate medium. { 'rā ,där ,im·ij }

radar indicator [ELECTR] A cathode-ray tube and associated equipment used to provide a visual indication of the echo signals picked up by a radar set. { 'rā,där ,in·də,kād·ər }

radar intelligence item [ELECTR] A feature which is radar significant but which cannot be identified exactly at the moment of its appearance as homogeneous. { 'rā,där in¦tel·ə·jəns ,īd·əm }

radar jamming [ELECTR] Radiation, reradiation, or reflection of electromagnetic waves so as to impair the usefulness of radar used by the enemy. { 'rā,där ,jam·iŋ }

radar netting unit [ELECTR] Optional electronic equipment that converts the operations central of certain air defense fire distribution systems to a radar netting station. { 'rā,där ¦ned·iŋ ,yü·nət }

radar presentation *See* radar display. { 'rā,där ,prē,zen'tā·shən }

radar range [ELECTROMAG] The maximum distance at which a radar set is ordinarily effective in detecting objects. { 'rā,där ,rānj }

radar range equation [ELECTROMAG] An equation which expresses radar range in terms of transmitted power, minimum detectable signal, antenna gain, and the target's radar cross section. { 'rā,där ,rānj i,kwā·zhən }

radar receiver [ELECTR] That subsystem of a radar that is designed to amplify, enhance as appropriate with signal processing, and demodulate radar echo signals and feed them to a radar display or similar data processer. { 'rā,där ri ,sēv·ər }

radar receiver-transmitter [ELECTR] A single component having the dual functions of generating electromagnetic energy for transmission, and of receiving, demodulating, and sometimes presenting intelligence from the reflected electromagnetic energy. { 'rā,där ri ,sēv·ər tranz'mid·ər }

radar reflection [ELECTROMAG] The return of electromagnetic waves, generated by a radar installation, from an object on which the waves are incident. { 'rā,där ri,flek·shən }

radar reflection interval [ELECTROMAG] The time required for a radar pulse to travel from the source to the target and return to the source, taking the velocity of radio propagation to be equal to the velocity of light. { 'rā,där ri,flek·shən ,in·tər·vəl }

radar reflectivity [ELECTROMAG] The fraction of electromagnetic energy generated by a radar installation which is reflected by an object. { 'rā ,där ,rē,flek'tiv·əd·ē }

radar relay [ENG] **1.** Equipment for relaying the radar video and appropriate synchronizing signal to a remote location. **2.** Process or system by which radar echoes and synchronization data are transmitted from a search radar installation to a receiver at a remote point. { 'rā,där 'rē,lā }

radar repeater [ELECTR] A radar indicator used to reproduce the radar's own display at a remote position, with proper selection, the display of any one of several radar systems can be reproduced. { 'rā,där ri,pēd·ər }

radar return [NAV] The signal indication of an object which has reflected energy that was transmitted by a primary radar. Also known as radio echo. { 'rā,där ri,tərn }

radar scanning [ENG] The process or action of directing a radar beam through a space search pattern for the purpose of locating a target. { 'rā ,där ,skan·iŋ }

radarscope [ELECTR] An older term for a radar display, connoting usually the use of a cathode-ray tube serving as an oscilloscope, the face of which is the radar viewing screen. Also known as scope. { 'rā,där,skōp }

radar selector switch [ELECTR] Manual or motor-driven switch which transfers a plan-position indicator repeater from one system to another, switching video, trigger, and bearing data. { 'rā ,där si'lek·tər ,swich }

radar set [ENG] A complete assembly of radar equipment, consisting of a transmitter, antenna, receiver, and signal processor, and appropriate control and interface apparatus. The term radar alone is often used. { 'rā,där ,set }

radar signal spectrograph [ELECTR] An electronic device in the form of a scanning filter which provides a frequency analysis of the amplitude-modulated back-scattered signal. { 'rā,där ¦sig·nəl 'spek·trə,graf }

radar transmitter [ELECTR] That subsystem of a radar that converts electrical power to the radio-frequency electromagnetic signals desired, then sends them to the antenna. { 'rā,där tranz,mid·ər }

radar transponder See radar beacon. { 'rā,där tranz'pän·dər }

radar volume [ELECTROMAG] The volume in space that is irradiated by a given radar; for a continuous-wave radar it is equivalent to the antenna radiation pattern; for a pulse radar it is a function of the cross-section area of the beam of the antenna and the pulse length of the transmitted pulse. { 'rā,där ,väl·yəm }

radechon [ELECTR] A storage tube having a single electron gun and a dielectric storage medium consisting of a sheet of mica sandwiched between a continuous metal backing plate and a fine-mesh screen; used in simple delay schemes, signal-to-noise improvement, signal comparison, and conversion of signal-time bases. Also known as barrier-grid storage tube. { 'rad·ə,kän }

radial-beam tube [ELECTR] A vacuum tube in which a radial beam of electrons is rotated past circumferentially arranged anodes by an external rotating magnetic field; used chiefly as a high-speed switching tube or commutator. { 'rād·ē·əl ¦bēm ,tüb }

radial grating [ELECTROMAG] Conformal wire grating consisting of wires arranged radially in a circular frame, like the spokes of a wagon wheel, and placed inside a circular waveguide to obstruct E waves of zero order while passing the corresponding H waves. { 'rād·ē·əl 'grād·iŋ }

radial lead [ELEC] A wire lead coming from the side of a component rather than axially from the end. { 'rād·ē·əl 'lēd }

radial selector See private line arrangement. { 'rād·ē·əl si'lek·tər }

radiant reflectance [ELECTROMAG] Ratio of reflected radiant power to incident radiant power. { 'rād·ē·ənt ri'flek·təns }

radiant transmittance [ELECTROMAG] Ratio of transmitted radiant power to incident radiant power. { 'rād·ē·ənt tranz'mit·əns }

radiated interference [COMMUN] Interference which is transmitted through the atmosphere according to the laws of electromagnetic wave propagation; the term is generally considered to include the transfer of interfering energy in inductive or capacitive coupling. { 'rād·ē,ād·əd ,in·tər'fir·əns }

radiated power [ELECTROMAG] The total power emitted by a transmitting antenna. { 'rād·ē ,ād·əd 'paù·ər }

radiating curtain [ELECTROMAG] Array of dipoles in a vertical plane, positioned to reinforce each other; it is usually placed one-fourth wavelength ahead of a reflecting curtain of corresponding half-wave reflecting antennas. { 'rād·ē,ād·iŋ 'kərt·ən }

radiating element [ELECTROMAG] Basic subdivision of an antenna which in itself is capable of radiating or receiving radio-frequency energy. { 'rād·ē,ād·iŋ 'el·ə·mənt }

radiating guide [ELECTROMAG] Waveguide designed to radiate energy into free space; the waves may emerge through slots or gaps in the guide, or through horns inserted in the wall of the guide. { 'rād·ē,ād·iŋ 'gīd }

radiation angle [ELECTROMAG] The vertical angle between the line of radiation emitted by a directional antenna and the horizon. { ,rād·ē'ā·shən ,aŋ·gəl }

radiation characteristic [COMMUN] One of the identifying features of a radiating signal, such as frequency and pulse width. { ,rād·ē'ā·shən ,kar·ik·tə'ris·tik }

radiation cooling [ELECTR] Cooling of an electrode resulting from its emission of heat radiation. { ,rād·ē'ā·shən ,kül·iŋ }

radiation counter tube See counter tube. { ,rād·ē'ā·shən ¦kaùnt·ər ,tüb }

radiation efficiency [ELECTROMAG] Of an antenna, the ratio of the power radiated to the total power supplied to the antenna at a given frequency. { ,rād·ē¦ā·shən i,fish·ən·sē }

radiation-enhanced diffusion [ELEC] A mechanism for ion-beam mixing of a film and a substrate in which lattice defects that are formed by the atomic displacements produced by ion bombardment result in an increase in interdiffusion coefficients. { ,rād·ē¦ā·shən in,hanst də'fyü·zhən }

radiation field [ELECTROMAG] The electromagnetic field that breaks away from a transmitting antenna and radiates outward into space as electromagnetic waves; the other type of electromagnetic field associated with an energized antenna is the induction field. { ,rād·ē'ā·shən ,fēld }

radiation intensity [ELECTROMAG] The power radiated from an antenna per unit solid angle in a given direction. { ,rād·ē'ā·shən in,ten·səd·ē }

radiation lobe See lobe. { ,rād·ē'ā·shən ,lōb }

radiation noise See electromagnetic noise. { ,rād·ē'ā·shən ,nóiz }

radiation pattern [ELECTROMAG] Directional dependence of the radiation of an antenna. Also known as antenna pattern; directional pattern; field pattern. { ˌrād·ē'ā·shən ˌpad·ərn }

radiation thermocouple [ELEC] An infrared detector consisting of several thermocouples connected in series, arranged so that the radiation falls on half of the junctions, causing their temperature to increase so that a voltage is generated. { ˌrād·ē'ā·shən 'thər·məˌkəp·əl }

radiation zone *See* Fraunhofer region. { ˌrād·ē'ā·shən ˌzōn }

radiator [ELECTROMAG] **1.** The part of an antenna or transmission line that radiates electromagnetic waves either directly into space or against a reflector for focusing or directing. **2.** A body that emits radiant energy. { 'rād·ēˌād·ər }

radio- [ELECTROMAG] A prefix denoting the use of radiant energy, particularly radio waves. { 'rād·ē·ō }

radio [COMMUN] The transmission of signals through space by means of electromagnetic waves. [ELECTR] *See* radio receiver. { 'rād·ē·ō }

radioacoustics [COMMUN] Study of the production, transmission, and reproduction of sounds carried from one place to another by radiotelephony. { ˌrād·ē·ō·ə'küs·tiks }

radioactive fallout *See* fallout. { ˌrād·ē·ō'ak·tiv 'fólˌaůt }

radio aid to navigation [ELECTR] An aid to navigation which utilizes the propagation characteristics of radio waves to furnish navigation information. { 'rād·ē·ō 'ād tə ˌnav·ə'gā·shən }

radio altimeter [ENG] An absolute altimeter that depends on the reflection of radio waves from the earth for the determination of altitude, as in a frequency-modulated radio altimeter and a radar altimeter. Also known as electronic altimeter; reflection altimeter. { 'rād·ē·ō al'tim·əd·ər }

radio altitude *See* radar altitude. { 'rād·ē·ō 'al·təˌtüd }

radio and wire integration [COMMUN] The combining of wire circuits with radio facilities. { 'rād·ē·ō ən 'wīr ˌint·ə'grā·shən }

radio antenna *See* antenna. { 'rād·ē·ō an'ten·ə }

radio attenuation [ELECTROMAG] For one-way propagation, the ratio of the power delivered by the transmitter to the transmission line connecting it with the transmitting antenna to the power delivered to the receiver by the transmission line connecting it with the receiving antenna. { 'rād·ē·ō əˌten·yə'wā·shən }

radio aurora *See* artificial radio aurora. { 'rād·ē·ō ə'ror·ə }

radio autopilot coupler [ENG] Equipment providing means by which an electrical navigational signal operates an automatic pilot. { 'rād·ē·ō 'ód·ōˌpī·lət 'kəp·lər }

radio B battery [ELEC] A B-type battery used in a radio set, usually consisting of 15 to 30 permanently connected cells. { 'rād·ē·ō 'bē ˌbad·ə·rē }

radio beacon [NAV] A nondirectional radio transmitting station in a fixed geographic location, emitting a characteristic signal from which bearing information can be obtained by a radio direction finder on a ship or aircraft. Also known as aerophare; radiophare. { 'rād·ē·ō 'bē kən }

radio bearing [NAV] The bearing of a radio transmitter from a receiver as determined by a radio direction finder. { 'rād·ē·ōˌber·iŋ }

radio blackout [COMMUN] A fadeout that may last several hours or more at a particular frequency. Also known as blackout. { 'rād·ē·ō 'blakˌaůt }

radio broadcasting [COMMUN] Radio transmission intended for general reception. { 'rād·ē·ō 'bródˌkast·iŋ }

radio button [COMPUT SCI] In a graphical user interface, one of a group of small circles that represent a set of choices (indicated by text next to the circles) from which only one can be selected; the selected choice is indicated by a partly filled circle. { 'rād·ē·ōˌbət·ən }

radio command [ELECTR] A radio control signal to which a guided missile or other remote-controlled vehicle or device responds. { 'rād·ē·ō kəˌmand }

radio communication [COMMUN] Communication by means of radio waves. { 'rād·ē·ō kəˌmyü·nə'kā·shən }

radiocommunication service [COMMUN] A service involving the emission, transmission, or reception of radio waves for specific telecommunications purposes. { ˌrād·ē·ō·kəˌmyü·nə'kā·shən ˌsər·vəs }

radio compass *See* automatic direction finder. { 'rād·ē·ō 'kəm·pəs }

radio control [ELECTR] The control of stationary or moving objects by means of signals transmitted through space by radio. { 'rād·ē·ō kən'trōl }

radio countermeasures [ELECTR] Electrical or other techniques depriving the enemy of the benefits which would ordinarily accrue to him through the use of any technique employing the radiation of radio waves; it includes benefits derived from radar and intercept services. { 'rād·ē·ō 'kaůnt·ərˌmezh·ərz }

radio data system [COMMUN] The radio data system (RDS) signal is a low-bit-rate data stream transmitted on the 57-kHz subcarrier of an FM radio signal. Radio listeners know that radio data system through its ability to permit RDS radios to display call letters and search for stations based on their programming format. Special traffic announcements can be transmitted to RDS radios, as well as emergency alerts. { 'rād·ē·ō 'dad·əˌsis·təm }

radio detection and ranging *See* radar. { 'rād·ē·ō di'tek·shən ən 'rānj·iŋ }

radiodetermination satellite service [COMMUN] A system that employs at least two geosynchronous satellites, a central ground station, and hand-held or vehicle-mounted transceivers to enable users to determine and transmit their precise position. Abbreviated RDSS. { 'rād·ē·ōdiˌtər·məˈnā·shən 'sad·əlˌīt ˌsər·vəs }

radio direction finder [NAV] A radio aid to navigation that uses a rotatable loop or other highly

directional antenna arrangement to determine the direction of arrival of a radio signal. Abbreviated RDF. Also known as direction finder. ['rād·ē·ō di'rek·shən ,fīn·dər]

radio echo *See* radar return. ['rād·ē·ō ,ek·ō]

radio facsimile system [COMMUN] A facsimile system in which signals are transmitted by radio rather than by wire. ['rād·ē·ō fak'sim·ə·lē ,sis·təm]

radio fadeout [COMMUN] Increased absorption of radio waves passing through the lower layers of the ionosphere due to a sudden and abnormal increase in ionization in these regions; signals at receivers then fade out or disappear. ['rād·ē·ō 'fād,aut]

radio fan-marker beacon *See* fan-marker beacon. ['rād·ē·ō 'fan ,mär·kər ,bē·kən]

radio fix [COMMUN] Determination of the position of the source of radio signals by obtaining cross bearings on the transmitter with two or more radio direction finders in different locations, then computing the position by triangulation. [NAV] **1.** Determination of the position of a vessel or aircraft equipped with direction-finding equipment by ascertaining the direction of radio signals received from two or more transmitting stations of known location and then computing the position by triangulation. **2.** Determination of position of an aircraft in flight by identification of a radio beacon or by locating the intersection of two radio beams. ['rād·ē·ō ,fiks]

radio-frequency alternator [ELEC] A rotating-type alternator designed to produce high power at frequencies above power-line values but generally lower than 100,000 hertz; used chiefly for high-frequency heating. ['rād·ē·ō ¦frē·kwən·sē 'ōl·tə,nād·ər]

radio-frequency amplifier [ELECTR] An amplifier that amplifies the high-frequency signals commonly used in radio communications. ['rād·ē·ō ¦frē·kwən·sē 'am·plə,fī·ər]

radio-frequency bandwidth [COMMUN] Band of frequencies comprising 99% of the total radiated power of the signal transmission extended to include any discrete frequency on which the power is at least 0.25% of the total radiated power. ['rād·ē·ō ¦frē·kwən·sē 'band,width]

radio-frequency cable [ELECTROMAG] A cable having electric conductors separated from each other by a continuous homogeneous dielectric or by touching or interlocking spacer beads; designed primarily to conduct radio-frequency energy with low losses. Also known as RG line. ['rād·ē·ō ¦frē·kwən·sē ,kā·bəl]

radio-frequency choke [ELEC] A coil designed and used specifically to block the flow of radio-frequency current while passing lower frequencies or direct current. ['rād·ē·ō ¦frē·kwən·sē ,chōk]

radio-frequency component [COMMUN] Portion of a signal or wave which consists only of the radio-frequency alternations, and not including its audio rate of change in amplitude frequency. ['rād·ē·ō ¦frē·kwən·sē kəm,pō·nənt]

radio-frequency current [ELEC] Alternating current having a frequency higher than 10,000 hertz. ['rād·ē·ō ¦frē·kwən·sē ,kə·rənt]

radio-frequency filter [ELECTR] An electric filter which enhances signals at certain radio frequencies or attenuates signals at undesired radio frequencies. ['rād·ē·ō ¦frē·kwən·sē ,fil·tər]

radio-frequency generator [ELECTR] A generator capable of supplying sufficient radio-frequency energy at the required frequency for induction or dielectric heating. ['rād·ē·ō ¦frē·kwən·sē 'jen·ə ,rād·ər]

radio-frequency head [ENG] Unit consisting of a radar transmitter and part of a radar receiver, the two contained in a package for ready removal and installation. ['rād·ē·ō ¦frē·kwən·sē 'hed]

radio-frequency heating *See* electronic heating. ['rād·ē·ō ¦frē·kwən·sē 'hēd·iŋ]

radio-frequency interference [COMMUN] Interference from sources of energy outside a system or systems, as contrasted to electromagnetic interference generated inside systems. Abbreviated RFI. ['rād·ē·ō ¦frē·kwən·sē ,in·tər'fir·əns]

radio-frequency measurement [ELECTR] The precise measurement of frequencies above the audible range by any of various techniques, such as a calibrated oscillator with some means of comparison with the unknown frequency, a digital counting or scaling device which measures the total number of events occurring during a given time interval, or an electronic circuit for producing a direct current proportional to the frequency of its input signal. ['rād·ē·ō ¦frē·kwən·sē 'mezh·ər·mənt]

radio-frequency oscillator [ELECTR] An oscillator that generates alternating current at radio frequencies. ['rād·ē·ō ¦frē·kwən·sē 'äs·ə,lād·ər]

radio-frequency power supply [ELECTR] A high-voltage power supply in which the output of a radio-frequency oscillator is stepped up by an air-core transformer to the high voltage required for the second anode of a cathode-ray tube, then rectified to provide the required high direct-current voltage; used in some television receivers. ['rād·ē·ō ¦frē·kwən·sē 'paù·ər sə,plī]

radio-frequency pulse [COMMUN] A radio-frequency carrier that is amplitude-modulated by a pulse; the amplitude of the modulated carrier is zero before and after the pulse. Also known as radio pulse. ['rād·ē·ō ¦frē·kwən·sē ,pəls]

radio-frequency reactor [ELECTR] A reactor used in electronic circuits to pass direct current and offer high impedance at high frequencies. ['rād·ē·ō ¦frē·kwən·sē rē'ak·tər]

radio-frequency resistance *See* high-frequency resistance. ['rād·ē·ō ¦frē·kwən·sē ri'zis·təns]

radio-frequency sensor [ENG] A device that uses radio signals to determine the position of objects to be manipulated by a robotic system. ['rād·ē·ō ¦frē·kwən·sē ,sen·sər]

radio-frequency shift *See* frequency shift. ['rād·ē·ō ¦frē·kwən·sē ,shift]

radio-frequency signal generator [ELECTR] A test instrument that generates the various radio

frequencies required for alignment and servicing of electronics equipment. Also known as service oscillator. { 'rād·ē·ō ¦frē·kwən·sē 'sig·nəl ˌjen·ə ˌrād·ər }

radio-frequency spectrum *See* radio spectrum. { 'rād·ē·ō ¦frē·kwən·sē 'spek·trəm }

radio-frequency SQUID [ELECTR] A type of SQUID which has only one Josephson junction in a superconducting loop; its state is determined from radio-frequency measurements of the impedance of the ring. { 'rād·ē·ō ¦frē·kwən·sē 'skwid }

radiogoniometer [ELECTR] A goniometer used as part of a radio direction finder. { ¦rād·ē·ō ˌgō·nē'äm·əd·ər }

radiogoniometry [ENG] Science of locating a radio transmitter by means of taking bearings on the radio waves emitted by such a transmitter. { ¦rād·ē·ō,gō·nē'äm·ə·trē }

radio guidance [ELECTR] Guidance of a flight-borne missile or other vehicle from a ground station by means of radio signals. { 'rād·ē·ō 'gīd·əns }

radio homing beacon *See* homing beacon. { 'rād·ē·ō 'hōm·iŋ ˌbē·kən }

radio horizon [COMMUN] The locus of points at which direct rays from a transmitter become tangential to the surface of the earth; the distance to the radio horizon is affected by atmospheric refraction. { 'rād·ē·ō hə'rīz·ən }

radio interference *See* interference. { 'rād·ē·ō ˌin·tər'fir·əns }

radio metal locator *See* metal detector. { 'rād·ē·ō 'med·əl 'lōˌkād·ər }

radiometer [ELECTR] A receiver for detecting microwave thermal radiation and similar weak wide-band signals that resemble noise and are obscured by receiver noise; examples include the Dicke radiometer, subtraction-type radiometer, and two-receiver radiometer. Also known as microwave radiometer; radiometer-type receiver. [ENG] An instrument for measuring radiant energy; examples include the bolometer, microradiometer, and thermopile. { ˌrād·ē'äm·əd·ər }

radiometer-type receiver *See* radiometer. { ˌrād·ē'äm·əd·ər ¦tīp ri'sē·vər }

radiomicrometer *See* microradiometer. { ¦rād·ē·ō·mī'kräm·əd·ər }

radio net [COMMUN] System of radio stations operating with each other; a military net usually consists of a radio station of a superior unit and stations of all subordinate or supporting units. { 'rād·ē·ō ˌnet }

radio-paging system [COMMUN] A system consisting of personal paging receivers, radio transmitters, and an encoding device, designed to alert an individual, or group of individuals, and deliver a short message. { 'rād·ē·ō ¦pā|·iŋ ˌsis·təm }

radiophare *See* radio beacon. { 'rād·ē·ōˌfer }

radiophone *See* radiotelephone. { 'rād·ē·ōˌfōn }

radiophoto *See* facsimile. { ¦rād·ē·ō'fōd·ō }

radio pill [ELECTR] A device used in biotelemetry for monitoring the physiologic activity of an animal, such as pH values of stomach acid; an example is the Heidelberg capsule. { 'rād·ē·ō ˌpil }

radio receiver [ELECTR] A device that converts radio waves into intelligible sounds or other perceptible signals. Also known as radio; radio set; receiving set. { 'rād·ē·ō ri,sēv·ər }

radio relay satellite *See* communications satellite. { 'rād·ē·ō 'rēˌlā ˌsad·əl,īt }

radio relay system [COMMUN] A radio transmission system in which intermediate radio stations or radio repeaters receive and retransmit radio signals. Also known as relay system. { 'rād·ē·ō 'rēˌlā ˌsis·təm }

radio repeater [COMMUN] A repeater that acts as an intermediate station in transmitting radio communications signals or radio programs from one fixed station to another; serves to extend the reliable range of the originating station; a microwave repeater is an example. { 'rād·ē·ō riˌpēd·ər }

radio scanner *See* scanning radio. { 'rād·ē·ō 'skan·ər }

radio scattering *See* scattering. { 'rād·ē·ō 'skad·ə·riŋ }

radio set *See* radio transmitter. { 'rād·ē·ō ˌset }

radio shielding [ELEC] Metallic covering over all electric wiring and ignition apparatus, which is grounded at frequent intervals for the purpose of eliminating electric interference with radio communications. { 'rād·ē·ō ˌshēld·iŋ }

radio signal [COMMUN] A signal transmitted by radio. { 'rād·ē·ō ˌsig·nəl }

radio silence [COMMUN] Period during which all or certain radio equipment capable of radiation is kept inoperative. { 'rād·ē·ō 'sī·ləns }

radiosonde commutator [ELECTR] A component of a radiosonde consisting of a series of alternate electrically conducting and insulating strips, as these are scanned by a contact, the radiosonde transmits temperature and humidity signals alternately. { 'rād·ē·ōˌsänd 'käm·yəˌtād·ər }

radio spectrum [COMMUN] The entire range of frequencies in which useful radio waves can be produced, extending from the audio range to about 300,000 megahertz. Also known as radio-frequency spectrum. { 'rād·ē·ō 'spek·trəm }

radio spectrum allocation [COMMUN] The specification of the frequencies of the radio spectrum which are available for use by the various radio services. { 'rād·ē·ō ¦spek·trəm ˌal·ə'kā·shən }

radio station [COMMUN] A station equipped to engage in radio communication or radio broadcasting. { 'rād·ē·ō ˌstā·shən }

radiotelemetry [COMMUN] The reception of data at a location remote from the source of the data, using radio-frequency electromagnetic radiation as the means of transmission. { 'rād·ē·ō·tə'lem·ə·trē }

radiotelephone [COMMUN] **1.** Pertaining to telephony over radio channels. **2.** A radio transmitter and radio receiver used together for two-way telephone communication by radio. Also known as radiophone. { ¦rād·ē·ō'tel·əˌfōn }

radiotelephony [COMMUN] Two-way transmission of sounds by means of modulated radio waves,

without interconnecting wires. { ¦rād·ē·ō·tə'lef·ə·nē }

radio time signal |COMMUN| A time signal sent by radio broadcast. { 'rād·ē·ō 'tīm ˌsig·nəl }

radio tower |COMMUN| A tower, usually several hundred meters tall, either guyed or freestanding, on which a transmitting antenna is mounted to increase the range of radio transmission; in some cases, the tower itself may be the antenna. { 'rād·ē·ō ˌtaù·ər }

radio tracking |ENG| The process of keeping a radio or radar beam set on a target and determining the range of the target continuously. { 'rād·ē·ō 'trak·iŋ }

radio transmission |COMMUN| The transmission of signals through space at radio frequencies by means of radiated electromagnetic waves. { 'rād·ē·ō tranz'mish·ən }

radio transmitter |ELECTR| The equipment used for generating and amplifying a radio-frequency carrier signal, modulating the carrier signal with intelligence, and feeding the modulated carrier to an antenna for radiation into space as electromagnetic waves. Also known as radio set; transmitter. { 'rād·ē·ō 'tranz,mid·ər }

radio transponder |ELECTR| A transponder which receives and transmits radio waves. { 'rād·ē·ō tran'spän·dər }

radio tube *See* electron tube. { 'rād·ē·ō ˌtüb }

radio wave |ELECTROMAG| An electromagnetic wave produced by reversal of current in a conductor at a frequency in the range from about 10 kilohertz to about 300,000 megahertz. { 'rād·ē·ō ˌwāv }

radix *See* root. { 'rād·iks }

radix transformation |COMPUT SCI| A method of transformation that involves changing the radix or base of the original key and either discarding excess high-order digits (that is, digits in excess of the number desired in the key) or extracting some part of the transformed number. { 'rād·iks ˌtranz·fər'mā·shən }

radome |ELECTROMAG| A strong, thin shell, made from a dielectric material that is transparent to radio-frequency radiation, and used to house a radar antenna, or a space communications antenna of similar structure. { 'rāˌdōm }

RAID |COMPUT SCI| A group of hard disks that operate together to improve performance or provide fault tolerance and error recovery through data striping, mirroring, and other techniques. Derived from redundant array of inexpensive disks. { rād }

rail-fence jammer *See* continuous-wave jammer. { 'rāl ¦fens ˌjam·ər }

railing |ELECTR| Simple radar pulse jamming at high recurrence rates (50 to 150 kilohertz); it results in an image on a radar indicator resembling fence railing. { 'rāl·iŋ }

rain attenuation |COMMUN| Attenuation of radio waves when passing through moisture-bearing cloud formations or areas in which rain is falling; increases with the density of the moisture in the transmission path. { 'rān əˌten·yəˌwā·shən }

rainbow |ELECTR| Technique which applies pulse-to-pulse frequency changing to identifying and discriminating against decoys and chaff. { 'rānˌbō }

RAM *See* random-access memory. { ram }

Rambus dynamic random-access memory |COMPUT SCI| High-performance memory that can transfer data at rates of 800 megahertz and higher. Abbreviated RDRAM. { ¦ramˌbəs dī ¦nam·ik ˌran·dəm 'akˌses ˌmem·rē }

RAM disk *See* RAM drive. { 'ram ˌdisk }

RAM drive |COMPUT SCI| A portion of a computer's random-access memory (RAM) that is made to simulate a disk drive. Also known as RAM disk. { 'ram ˌdrīv }

rampage through core |COMPUT SCI| Action of a computer program that writes data in incorrect locations or otherwise alters storage locations improperly, because of a program error. { 'ram ˌpāj thrü 'kȯr }

ramp generator |ELECTR| A circuit that generates a sweep voltage which increases linearly in value during one cycle of sweep, then returns to zero suddenly to start the next cycle. { 'ramp ˌjen·ə ˌrād·ər }

RAM resident |COMPUT SCI| A program that remains stored in a computer's random-access memory (RAM) at all times. Also known as terminate and stay resident (TSR). { ¦ram 'rez·ə·dənt }

random access |COMMUN| The process of beginning to read and decode the coded bit stream at an arbitrary point. |COMPUT SCI| **1.** The ability to read or write information anywhere within a storage device in an amount of time that is constant regardless of the location of the information accessed and of the location of the information previously accessed. Also known as direct access. **2.** A process in which data are accessed in nonsequential order and possibly at irregular intervals of time. Also known as single reference. { 'ran·dəm 'akˌses }

random-access discrete address |COMMUN| Communications technique in which radio users share one wide band instead of each user getting an individual narrow band. { 'ran·dəm ¦akˌses di'skrēt ə'dres }

random-access disk file |COMPUT SCI| A file which is contained on a disk having one head per track and in which consecutive records are not necessarily in consecutive locations. { 'ran·dəm ¦akˌses 'disk ˌfīl }

random-access input/output |COMPUT SCI| A technique which minimizes seek time and overlaps with processing. { 'ran·dəm ¦akˌses 'inˌpůt 'aůtˌpůt }

random-access memory |COMPUT SCI| A data storage device having the property that the time required to access a randomly selected datum does not depend on the time of the last access or the location of the most recently accessed datum. Abbreviated RAM. Also known as direct-access memory; direct-access storage; random-access

storage; random storage; uniformly accessible storage. { 'ran·dəm ¦ak,ses 'mem·rē }

random-access programming [COMPUT SCI] Programming without regard for the time required for access to the storage positions called for in the program, in contrast to minimum-access programming. { 'ran·dəm ¦ak,ses 'prō,gram·iŋ }

random-access storage *See* random-access memory. { 'ran·dəm ¦ak,ses 'stór·ij }

randomized jitter [ELECTR] Jitter by means of noise modulation. { 'ran·də,mīzd 'jid·ər }

randomizing scheme [COMPUT SCI] A technique of distributing records among storage modules to ensure even distribution and seek time. { 'ran·də,mīz·iŋ ,skēm }

random number generator [COMPUT SCI] **1.** A mathematical program which generates a set of numbers which pass a randomness test. **2.** An analog device that generates a randomly fluctuating variable, and usually operates from an electrical noise source. { 'ran·dəm 'nəm·bər ,jen·ə,rād·ər }

random pulsing [COMMUN] Continuous, varying, pulse-repetition rate, accomplished by noise modulation or continuous frequency change. { 'ran·dəm 'pəls·iŋ }

random-sampling voltmeter [ENG] A sampling voltmeter which takes samples of an input signal at random times instead of at a constant rate; the synchronizing portions of the instrument can then be simplified or eliminated. { 'ran·dəm ¦sam·pliŋ 'vōlt,mēd·ər }

random storage *See* random-access memory. { 'ran·dəm 'stór·ij }

random superimposed coding [COMPUT SCI] A system of coding in which a set of random numbers is assigned to each concept to be encoded; with punched cards, each number corresponds to some one hole to be punched in a given field. { 'ran·dəm ¦sü·pər·im'pōzd 'kōd·iŋ }

random winding [ELEC] A coil winding in which the turns are positioned haphazardly rather than in layers. { 'ran·dəm 'wīnd·iŋ }

range [COMMUN] **1.** In printing telegraphy, that fraction of a perfect signal element through which the time of selection may be varied to occur earlier or later than the normal time of selection without causing errors while signals are being received. **2.** Upper and lower limits through which the index arm of the range-finder mechanism of a teletypewriter may be moved and still receive correct copy. [CONT SYS] **1.** The maximum distance a robot's arm or wrist can travel. Also known as reach. **2.** The volume comprising the locations to which a robot's arm or wrist can travel. [ENG] **1.** The distance capability of a radio or radar system. **2.** In radar measurement, the distance to a target measured usually by the time elapsed between the transmission of a pulse and the receipt of the target's echo. { rānj }

range-amplitude display [ELECTR] Radar display in which a time base provides the range scale from which echoes appear as deflections normal to the base. { 'rānj 'am·plə,tüd di,splā }

range arithmetic *See* interval arithmetic. { 'rānj ə¦rith·mə·tik }

range attenuation [ELECTROMAG] In radar terminology, the decrease in power density (flux density) caused by the divergence of the flux lines with distance, this decrease being in accordance with the inverse-square law. { 'rānj ə,ten·yə'wā·shən }

range-bearing display *See* B display. { 'rānj 'ber·iŋ di,splā }

range calibrator [ELECTR] **1.** A device with which the operator of a transmitter calculates the distance over which the signal will extend intelligibly. **2.** A device for adjusting radar range indications by use of known range targets or delayed signals; particularly useful in radars using analog echo timing. { 'rānj ¦kal·ə,brād·ər }

range check [COMPUT SCI] A method of checking the validity of input data by determining whether the values fall within an expected range. { 'rānj ,chek }

range comprehension [ELECTR] In a frequency-modulation sonor system, valves between the maximum and the minimum ranges. { 'rānj ,käm·pri¦hen·shən }

range delay [ELECTROMAG] A control used in radars which permits the operator to present on the radarscope only those echoes from targets which lie beyond a certain distance from the radar; by using range delay, undesired echoes from nearby targets may be eliminated while the indicator range is increased. { 'rānj di,lā }

rangefinder [COMMUN] A movable, calibrated unit of the receiving mechanism of a teletypewriter by means of which the selecting interval may be moved with respect to the start signal. [ELECTR] A device which determines the distance to an object by measuring the time it takes for a radio wave to travel to the object and return. { 'rānj,fīnd·ər }

range gate [ELECTR] A gate voltage that is used to select radar echoes from a very narrow interval of ranges. { 'rānj ¦gāt }

range gate capture [ELECTR] Electronic countermeasure technique using a spoofer radar transmitter to produce a false target echo that can make a fire-control tracking radar move off the real target and follow the false one. { 'rānj ¦gāt ,kap·chər }

range gating [ELECTR] The process of selecting, for further use, only those radar echoes that lie within a small interval of ranges. { 'rānj ,gād·iŋ }

range-height indicator display [ELECTR] A radar display showing the distance between a reference point, usually the radar, and a target, along with the vertical distance between a horizontal reference plane, usually containing the radar, and the target. Abbreviated RHI. { 'rānj 'hīt 'in·də ,kād·ər di,splā }

range-imaging sensor [ENG] A robotic device that makes precise measurements, by using the principles of algebra, trigonometry, and geometry, of the distance from a robot's end effector to various parts of an object, in order to form an image of the object. { 'rānj ¦im·i·j·iŋ ,sen·sər }

range mark offset [ELECTR] Displacement of range mark on a type B indicator. { 'rānj ¦märk ˌȯf·set }

range of a loop [COMPUT SCI] The set of instructions contained between the opening and closing statements of a do loop. { 'rānj əv ə 'lüp }

range rate [ELECTR] The rate at which the distance from the measuring equipment to the target or signal source that is being tracked is changing with respect to time. { 'rānj ˌrāt }

range ring [ELECTR] Accurate, adjustable ranging mark on a plan position indicator, such marks at set range intervals are displayed as concentric rings as the display is generated. { 'rānj ˌriŋ }

range selection [ELECTR] Control on a radar indicator for selection of range scale. { 'rānj si ˌlek·shən }

range sensing [ENG] The precise measurement of the distance of a device from a robot's end effector. { 'rānj ˌsens·iŋ }

range step [ELECTR] Vertical displacement on M-indicator sweep to measure range. { 'rānj ˌstep }

range strobe [ELECTROMAG] An index mark which may be displayed on various types of radar indicators to assist in the determination of the exact range of a target. { 'rānj ˌströb }

range sweep [ELECTR] A sweep intended primarily for measurement of range. { 'rānj ˌswēp }

range-tracking element [ELECTR] An element in a radar set that measures range and its time derivative, by means of which a range gate is actuated slightly before the predicted instant of signal reception. { 'rānj ¦trak·iŋ ˌel·ə·mənt }

range unit [ELECTR] Radar system component used for control and indication (usually counters) of range measurements. { 'rānj ˌyü·nət }

range zero [ELECTR] Alignment of start sweep trace with zero range. { 'rānj ˌzir·ō }

ranging oscillator [ELECTR] Oscillator circuit containing an LC (inductor-capacitor) resonant combination in the cathode circuit, usually used in radar equipment to provide range marks. { 'rānj·iŋ 'äs·əˌlād·ər }

rapid access loop [COMPUT SCI] A small section of storage, particularly in drum, tape, or disk storage units, which has much faster access than the remainder of the storage. { 'rap·əd ¦akˌses ˌlüp }

rapid memory *See* rapid storage. { 'rap·əd 'mem·rē }

rapid selector [COMPUT SCI] A device which scans codes recorded on microfilm; microimages of the documents associated with the codes may also be recorded on the film. { 'rap·əd siˈlek·tər }

rapid storage [COMPUT SCI] In computers, storage with a very short access time; rapid access is generally gained by limiting storage capacity. Also known as high-speed storage; rapid memory. { 'rap·əd 'stȯr·ij }

rare-earth-doped fiber amplifier [COMMUN] An optical fiber amplifier whose fiber core is lightly doped with trivalent rare-earth ions, which absorb light at certain pump wavelengths and emit it at some signal wavelength through stimulated emission. { ¦rār ˌərth ˌdōpt ˌfī·bər 'am·pləˌfī·ər }

raster [ELECTR] A predetermined pattern of scanning lines that provides substantially uniform coverage of an area; in video the raster is seen as closely spaced parallel lines, most evident when there is no picture. { 'ras·tər }

raster graphics [COMPUT SCI] A computer graphics coding technique which codes each picture element of the picture area in digital form. Also known as bit-mapped graphics. { 'ras·tər ¦graf·iks }

rasterization [COMPUT SCI] The conversion of graphics objects composed of vectors or line segments into dots for transmission to raster graphics displays and to dot matrix and laser printers. { ˌras·tə·rə'zā·shən }

raster scanning [ELECTR] Radar scan very similar to electron-beam scanning in an ordinary television set; horizontal sector scan that changes in elevation. { 'ras·tər ¦skan·iŋ }

rate action *See* derivative action. { 'rāt ˌak·shən }

rated speed [COMPUT SCI] The maximum operating speed that can be sustained by a data-processing device or communications line, not allowing for periodic pauses for various reasons such as carriage return on a printer. { 'rād·əd 'spēd }

rate effect [ELECTR] The phenomenon of a *pnpn* device switching to a high-conduction mode when anode voltage is applied suddenly or when high-frequency transients exist. { 'rāt iˌfekt }

rate feedback [ELECTR] The return of a signal, proportional to the rate of change of the output of a device, from the output to the input. { 'rāt 'fēdˌbak }

rate-grown transistor [ELECTR] A junction transistor in which both impurities (such as gallium and antimony) are placed in the melt at the same time and the temperature is suddenly raised and lowered to produce the alternate *p*-type and *n*-type layers of rate-grown junctions. Also known as graded-junction transistor. { 'rāt ¦grōn tran 'zis·tər }

rate multiplier [COMPUT SCI] An integrator in which the quantity to be integrated is held in a register and is added to the number standing in an accumulator in response to pulses which arrive at a constant rate. { 'rāt ˌməl·təˌplī·ər }

rate servomechanism *See* velocity servomechanism. { 'rāt ¦sər·vō'mek·əˌniz·əm }

rate test [COMPUT SCI] A test that verifies that the time constants of the integrators are correct; used in analog computers. { 'rāt ˌtest }

rate transmitter [ELECTR] A transmitter in a missile being launched, used with a ground receiver to indicate the rate of speed increase. { 'rāt tranzˌmid·ər }

ratio arm circuit [ELEC] Two adjacent arms of a Wheatstone bridge, designed so they can be set to provide a variety of indicated resistance ratios. { 'rā·shō ¦ärm ˌsər·kət }

ratio-balance relay *See* percentage differential relay. { 'rā·shō ¦bal·əns ˌrēˌlā }

ratio control system [CONT SYS] Control system in which two process variables are kept at a fixed ratio, regardless of the variation of either of the

variables, as when flow rates in two separate fluid conduits are held at a fixed ratio. { 'rā·shō kən'trōl ˌsis·təm }

ratio detector |ELECTR| A frequency-modulation detector circuit that uses two diodes and requires no limiter at its input; the audio output is determined by the ratio of two developed intermediate-frequency voltages whose relative amplitudes are a function of frequency. { 'rā·shō di'tek·tər }

ratio deviation *See* modulation index. { 'rā·shō ˌdē·vē'ā·shən }

ratio-differential relay *See* percentage differential relay. { 'rā·shō ˌdif·ə'ren·chəl 'rēˌlā }

ratio meter |ENG| A meter that measures the quotient of two electrical quantities; the deflection of the meter pointer is proportional to the ratio of the currents flowing through two coils. { 'rā·shō ˌmēd·ər }

rationalized units |ELEC| A system of electrical units, such as occurs in the International System, in which the factor of 4π is removed from the field equations and appears instead in the explicit expressions for the fields of a point charge and current element. { 'rash·ən·əlˌīzd 'yü·nəts }

ratio of transformation |ELEC| Ratio of the secondary voltage of a transformer to the primary voltage under no-load conditions, or the corresponding ratio of currents in a current transformer. { 'rā·shō əv ˌtranz·fər'mā·shən }

ratio of transformer |ELEC| Ratio of the number of turns in one winding of a transformer to the number of turns in the other, unless otherwise specified. { 'rā·shō əv tranz'fȯr·mər }

ratio resistor |ELEC| One of the resistors in a Wheatstone or Kelvin bridge whose resistances appear in a pair of ratios which are equal in a balanced bridge. { 'rā·shō riˌzis·tər }

rat race |ELECTR| A hybrid network in the form of a ring in microwave circuitry. { 'rat ˌrās }

Rayleigh video |ELECTR| Referring to the video and its particular probability density produced by an amplitude detector (demodulato) when a Gaussian radio noise is incident to it. { 'rā·lē ¦vid·ē·ō }

ray path |COMMUN| Geometric path between signal transmitting and receiving locations. { 'rā ˌpath }

ray tracing |COMPUT SCI| The creation of reflections, refractions, and shadows in a graphics image by following a series of rays from a light source and determining the effect of light on each pixel in the image. { 'rā ˌtrās·iŋ }

R-C amplifier *See* resistance-capacitance coupled amplifier. { ¦är¦sē 'am·pləˌfī·ər }

R-C circuit *See* resistance-capacitance circuit. { ¦är¦sē 'sər·kət }

R-C constant *See* resistance-capacitance constant. { ¦är¦sē 'kän·stənt }

R-C coupled amplifier *See* resistance-capacitance coupled amplifier. { ¦är¦sē ¦kəp·əld 'am·pləˌfī·ər }

R-C coupling *See* resistance coupling. { ¦är¦sē 'kəp·liŋ }

RCM *See* radar countermeasure.

R-C network *See* resistance-capacitance network. { ¦är¦sē 'netˌwərk }

R-C oscillator *See* resistance-capacitance oscillator. { ¦är¦sē 'äs·əˌlād·ər }

R-DAT system *See* rotary digital audio tape system. { 'är ˌdat ˌsis·təm *or* ¦är ¦dē¦ā'tē ˌsis·təm }

RDF *See* radio direction finder.

R-display |ELECTR| A radar display format in which only the display around a target of interest is expanded in range in an A-display format to improve the accuracy of range estimation and to permit closer examination of the target signal. Also known as R-indicator; R-scan; R-scope. { 'är diˌsplā }

RDRAM *See* Rambus dynamic random-access memory. { ¦är¦dē'ram }

RDS *See* radio data system.

RDSS *See* radiodetermination satellite service.

reach *See* range. { rēch }

reactance |ELEC| The imaginary part of the impedance of an alternating-current circuit. { rē'ak·təns }

reactance amplifier *See* parametric amplifier. { rē'ak·təns 'am·pləˌfī·ər }

reactance drop |ELEC| The component of the phasor representing the voltage drop across a component or conductor of an alternating-current circuit which is perpendicular to the current. { rē'ak·təns ˌdräp }

reactance frequency multiplier |ELECTR| Frequency multiplier whose essential element is a nonlinear reactor. { rē'ak·təns 'frē·kwən·sē 'məl·təˌplī·ər }

reactance grounded |ELEC| Grounded through a reactance. { rē'ak·təns ˌgraůn·dəd }

reactance relay |ELEC| Form of impedance relay, the operation of which is a function of the reactance of a circuit. { rē'ak·təns ˌrēˌlā }

reactance tube |ELECTR| Vacuum tube operated in a way that it presents almost a pure reactance to the circuit. { rē'ak·təns ˌtüb }

reactance-tube modulator |ELECTR| An electron-tube circuit, used to produce phase or frequency modulation, in which the reactance is varied in accordance with the instantaneous amplitude of the modulating voltage. { rē'ak·təns ¦tüb 'mäj·əˌlād·ər }

reaction *See* positive feedback. { rē'ak·shən }

reaction motor |ELEC| A synchronous motor whose rotor contains salient poles but which has no windings and no permanent magnets. { rē'ak·shən ˌmōd·ər }

reactive |ELEC| Pertaining to either inductive or capacitance reactance; a reactive circuit has a high value of reactance in comparison with resistance. { rē'ak·tiv }

reactive component |ELEC| In the phasor representation of quantities in an alternating-current circuit, the component of current, voltage, or apparent power which does not contribute power and which results from inductive or capacitive

reactance in the circuit, namely, the reactive current, reactive voltage, or reactive power. Also known as idle component; quadrature component; wattless component. { rē'ak·tiv kəm'pō·nənt }

reactive current [ELEC] In the phasor representation of alternating current, the component of the current perpendicular to the voltage, which contributes no power but increases the power losses of the system. Also known as idle current; quadrature current; wattless current. { rē'ak·tiv 'kə·rənt }

reactive factor [ELEC] The ratio of reactive power to apparent power. { rē'ak·tiv ,fak·tər }

reactive ion etching [ELECTR] A directed chemical etching process used in integrated circuit fabrication in which chemically active ions are accelerated along electric field lines to meet a substrate perpendicular to its surface. { rē'ak·tiv 'ī ,ən ,ech·iŋ }

reactive load [ELEC] A load having inductive or capacitive reactance. { rē'ak·tiv 'lōd }

reactive power [ELEC] The power value obtained by multiplying together the effective value of current in amperes, the effective value of voltage in volts, and the sine of the angular phase difference between current and voltage. Also known as wattless power. { rē'ak·tiv 'paù·ər }

reactive voltage [ELEC] In the phasor representation of alternating current, the voltage component that is perpendicular to the current. { rē'ak·tiv 'vōl·tij }

reactive volt-ampere *See* volt-ampere reactive. { rē'ak·tiv 'vōlt 'am,pir }

reactive volt-ampere hour *See* var hour. { rē'ak·tiv 'vōlt 'am,pir 'aù·ər }

reactive volt-ampere meter *See* varmeter. { rē'ak·tiv 'vōlt 'am,pir ,mēd·ər }

reactor [ELEC] A device that introduces either inductive or capacitive reactance into a circuit, such as a coil or capacitor. Also known as electric reactor. { rē'ak·tər }

read [COMPUT SCI] **1.** To acquire information, usually from some form of storage in a computer. **2.** To convert magnetic spots, characters, or punched holes into electrical impulses. [ELECTR] To generate an output corresponding to the pattern stored in a charge storage tube. { rēd }

read-around number *See* read-around ratio. { 'rēd ə,raùnd ,nəm·bər }

read-around ratio [COMPUT SCI] The number of times that a particular bit in electrostatic storage may be read without seriously affecting nearby bits. Also known as read-around number. { 'rēd ə,raùnd ,rā·shō }

read-back check *See* echo check. { 'rēd ,bak ,chek }

Read diode [ELECTR] A high-frequency semiconductor diode consisting of an avalanching *pn* junction, biased to fields of several hundred thousand volts per centimeter, at one end of a high-resistance carrier serving as a drift space for the charge carriers. { 'rēd ,dī,ōd }

reader [COMPUT SCI] A device that converts information from one form to another, as from punched paper tape to magnetic tape. { 'rēd·ər }

reader-interpreter [COMPUT SCI] A service routine that reads an input string, stores programs and data on random-access storage for later processing, identifies the control information contained in the input string, and stores this control information separately in the appropriate control lists. { 'rēd·ər in'tər·prəd·ər }

read error [COMPUT SCI] A condition in which the content of a storage device cannot be electronically identified. { 'rēd ,er·ər }

read head [COMPUT SCI] A device that converts digital information stored on a magnetic tape, drum, or disk into electrical signals usable by the computer arithmetic unit. { 'rēd ,hed }

read-in [COMPUT SCI] To sense information contained in some source and transmit this information to an internal storage. { 'rēd ¦in }

readiness review [COMPUT SCI] An on-site examination of the adequacy of preparations for effective utilization upon installation of a computer, and to identify any necessary corrective actions. { 'red·i·nəs ri,vyü }

reading rate [COMPUT SCI] Number of characters, words, or fields sensed by an input sensing device per unit of time. { 'rēd·iŋ ,rāt }

read-in program [COMPUT SCI] Computer program that can be put into a computer in a simple binary form and allows other programs to be read into the computer in more complex forms. { 'rēd ,in ,prō·gram }

read-only memory [COMPUT SCI] A device for storing data in permanent, or nonerasable, form, usually an optical, static electronic, or magnetic device allowing extremely rapid access to data. Abbreviated ROM. Also known as nonerasable storage; read-only storage. { 'rēd ¦ōn·lē 'mem·rē }

read-only storage *See* read-only memory. { 'rēd ¦ōn·lē 'stōr·ij }

read-only terminal [COMPUT SCI] A peripheral device, such as a printer, that can only receive signals. { 'rēd ¦ōn·lē 'tər·mən·əl }

readout [COMPUT SCI] **1.** The presentation of output information by means of lights a display, printout, or other methods. **2.** To sense information contained in some computer internal storage and transmit this information to a storage external to the computer. { 'rēd,aùt }

readout station [COMMUN] A recording or receiving radio station at which data are received. { 'rēd,aùt ,stā·shən }

read screen [COMPUT SCI] In optical character recognition (OCR), the transparent component part of most character readers through which appears the input document to be recognized. { 'rēd ,skrēn }

read time [COMPUT SCI] The time interval between the instant at which information is called for from storage and the instant at which delivery is completed in a computer. { 'rēd ,tīm }

read-while-writing [COMPUT SCI] The reading of a record or group of records into storage from tape at the same time another record or group of

records is written from storage to tape. { 'rēd ˌwīl 'rīd·iŋ }

read/write channel [COMPUT SCI] A path along which information is transmitted between the central processing unit of a computer and an input, output, or storage unit under the control of the computer. { 'rēd 'rīt ˌchan·əl }

read/write check indicator [COMPUT SCI] A device incorporated in certain computers to indicate upon interrogation whether or not an error was made in reading or writing; the machine can be made to stop, retry the operation, or follow a special subroutine, depending upon the result of the interrogation. { 'rēd 'rīt 'chek ˌin·dəˌkād·ər }

read/write comb [COMPUT SCI] The set of arms mounted with magnetic heads that reach between the disks of a disk storage device to read and record information. { 'rēd 'rīt ˌkōm }

read/write head [COMPUT SCI] A magnetic head that both senses and records data. Also known as combined head. { 'rēd 'rīt ˌhed }

read/write memory [COMPUT SCI] A computer storage in which data may be stored or retrieved at comparable intervals. { 'rēd 'rīt ˌmem·rē }

read/write random-access memory [COMPUT SCI] A random access memory in which data can be written into memory as well as read out of memory. { 'rēd 'rīt 'ran·dəm 'akˌses ˌmem·rē }

ready-to-receive signal [COMMUN] Signal sent back to a facsimile transmitter to indicate that a facsimile receiver is ready to accept the transmission. { 'red·ē tə ri'sēv ˌsig·nəl }

real data type [COMPUT SCI] A scalar data type which contains a normalized fraction (mantissa) and an exponent (characteristic) and is used to represent floating-point data, usually decimal. { 'rēl 'dad·ə ˌtīp }

realizability [CONT SYS] Property of a transfer function that can be realized by a network that has only resistances, capacitances, inductances, and ideal transformers. { ˌrē·əˌlīz·ə'bil·əd·ē }

real power [ELEC] The component of apparent power that represents true work; expressed in watts, it is equal to volt-amperes multiplied by the power factor. { 'rēl ˌpaù·ər }

real-space-transfer transistor [ELECTR] A transistor that utilizes the effect of the increase in electron energy and temperature in high electric fields. { ˌrēl ˌspās 'tranz·fər tranˌzis·tər }

real storage [COMPUT SCI] Actual physical storage of data and instructions. { 'rēl 'stȯr·ij }

real-time [COMPUT SCI] Pertaining to a data-processing system that controls an ongoing process and delivers its outputs (or controls its inputs) not later than the time when these are needed for effective control; for instance, airline reservations booking and chemical processes control. { 'rēl ˌtīm }

real-time clock [COMPUT SCI] A pulse generator which operates at precise time intervals to determine time intervals between events and initiate specific elements of processing. { 'rēl ˌtīm 'kläk }

real-time control system [COMPUT SCI] A computer system which controls an operation in real time, such as a rocket flight. { 'rēl ˌtīm kən'trōl ˌsis·təm }

real-time operation [COMPUT SCI] **1.** Of a computer or system, an operation or other response in which programmed responses to an event are essentially simultaneous with the event itself. **2.** An operation in which information obtained from a physical process is processed to influence or control the physical process. { 'rēl ˌtīm ˌäp·əˈrā·shən }

real-time processing [COMPUT SCI] The handling of input data at a rate sufficient to ensure that the instructions generated by the computer will influence the operation under control at the required time. { 'rēl ˌtīm 'präˌses·iŋ }

real-time programming [COMPUT SCI] Programming for a situation in which results of computations will be used immediately to influence the course of ongoing physical events. { 'rēl ˌtīm 'prōˌgram·iŋ }

real-time system [COMPUT SCI] A system in which the computer is required to perform its tasks within the time restraints of some process or simultaneously with the system it is assisting. { 'rēl ˌtīm 'sis·təm }

rear-projection [ELECTR] Pertaining to video system in which the picture is projected on a ground-glass screen for viewing from the opposite side of the screen. { 'rir prə'jek·shən }

reasonableness [COMPUT SCI] A measure of the extent to which data processed by a computer falls within an acceptable allowance for errors, as determined by quantitative tests. { 'rēz·nə·bəl·nəs }

reboot [COMPUT SCI] To reload systems software into a computer so that it makes a new start. { rē'büt }

rebroadcast [COMMUN] Repetition of a radio or television program at a later time. { rē'brȯdˌkast }

recall factor [COMPUT SCI] A measure of the efficiency of an information retrieval system, equal to the number of retrieved relevant documents divided by the total number of relevant documents in the file. { 'rēˌkȯl ˌfak·tər }

received power [ELECTROMAG] **1.** The total power received at an antenna from a signal, such as a radar target signal. **2.** In a mobile communications system, the root-mean-square value of power delivered to a load which properly terminates an isotropic reference antenna. { ri'sēvd 'paù·ər }

receive-only [COMMUN] A teleprinter which has no keyboard, and thus can receive but not transmit. Abbreviated RO. { ri'sēv 'ōn·lē }

receiver [ELECTR] The complete equipment required for receiving modulated radio waves and converting them into the original intelligence, such as into sounds or pictures, or converting to desired useful information as in a radar receiver. { ri'sē·vər }

receiver bandwidth [ELECTR] Spread, in frequency, between the halfpower points on the receiver response curve. { ri'sē·vər 'bandˌwidth }

receiver gating [ELECTR] Application of operating voltages to one or more stages of a receiver

only during that part of a cycle of operation when reception is desired. { ri'sē·vər ˌgād·iŋ }

receiver incremental tuning [ELECTR] Control feature to permit receiver tuning (of a transceiver) up to 3 kilohertz to either side of the transmitter frequency. { ri'sē·vər ˌin·krəˌment·əl 'tün·iŋ }

receiver lockout system *See* lockout. { ri'sē·vər 'läkˌaut ˌsis·təm }

receiver noise threshold [ELECTR] External noise appearing at the front end of a receiver, plus the noise added by the receiver itself, whichdetermines a noise threshold that has to be exceeded by the minimum discernible signal. { ri'sē·vər 'nȯiz ˌthreshˌhōld }

receiver radiation [ELECTROMAG] Radiation of interfering electromagnetic fields by the oscillator of a receiver. { ri'sē·vər ˌrād·ē'ā·shən }

receiver synchro *See* synchro receiver. { ri'sē·vər 'siŋ·krō }

receiving antenna [ELECTROMAG] An antenna used to convert electromagnetic waves to modulated radio-frequency currents. { ri'sēv·iŋ anˌten·ə }

receiving area [ELECTROMAG] The factor by which the power density must be multiplied to obtain the received power of an antenna, equal to the gain of the antenna times the square of the wavelength divided by 4π. { ri'sēv·iŋ ˌer·ē·ə }

receiving loop loss [COMMUN] In telephones, that part of the repetition equivalent assignable to the station set, subscriber line, and battery supply circuit that are on the receiving end. { ri'sēv·iŋ ˌlüp ˌlȯs }

receiving set *See* radio receiver. { ri'sēv·iŋ ˌset }

receiving tube [ELECTR] A low-voltage and low-power vacuum tube used in radio receivers, computers, and sensitive control and measuring equipment. { ri'sēv·iŋ ˌtüb }

receptacle *See* outlet. { ri'sep·tə·kəl }

reception [COMMUN] The conversion of modulated electromagnetic waves or electric signals, transmitted through the air or over wires or cables, into the original intelligence, or into desired useful information (as in radar), by means of antennas and electronic equipment. { ri'sep·shən }

recharge [ELEC] To restore a cell or battery to a charged condition by sending a current through it in a direction opposite to that of the discharging current. { rē'chärj }

rechargeable battery *See* storage battery. { rē'chär·jə·bəl'bad·ə·rē }

reciprocal ferrite switch [ELECTROMAG] A ferrite switch that can be inserted in a waveguide to switch an input signal to either of two output waveguides; switching is done by a Faraday rotator when acted on by an external magnetic field. { ri'sip·rə·kəl 'feˌrīt ˌswich }

reciprocal impedance [ELEC] Two impedances Z_1 and Z_2 are said to be reciprocal impedances with respect to an impedance Z (invariably a resistance) if they are so related as to satisfy the equation $Z_1 Z_2 = Z^2$. { ri'sip·rə·kəl im'pēd·əns }

reciprocal ohm *See* siemens. { ri'sip·rə·kəl 'ōm }

reciprocal ohm centimeter *See* roc. { ri'sip·rə·kəl 'ōm 'sent·iˌmēd·ər }

reciprocal ohm meter *See* rom. { ri'sip·rə·kəl 'ōm ˌmēd·ər }

reciprocal transducer [ELECTR] Transducer which satisfies the principle of reciprocity. { ri'sip·rə·kəl tranz'dü·sər }

reciprocation [ELECTR] In electronics, a process of deriving a reciprocal impedance from a given impedance, or finding a reciprocal network for a given network. { riˌsip·rə'kā·shən }

reciprocity calibration [ENG ACOUS] A measurement of the projector loss and hydrophone loss of a reversible transducer by means of the reciprocity theorem and comparisons with the known transmission loss of an electric network, without knowing the actual value of either the electric power or the acoustic power. { ˌres·ə'präs·əd·ē ˌkal·əˌbrā·shən }

reciprocity theorem Also known as principle of reciprocity. [ELEC] **1.** The electric potentials V_1 and V_2 produced at some arbitrary point, due to charge distributions having total charges of q_1 and q_2 respectively, are such that $q_1 V_2 = q_2 V_1$. **2.** In an electric network consisting of linear passive impedances, the ratio of the electromotive force introduced in any branch to the current in any other branch is equal in magnitude and phase to the ratio that results if the positions of electromotive force and current are exchanged. [ELECTROMAG] Given two loop antennas, a and b, then $I_{ab}/V_a = I_{ba}/V_b$, where I_{ab} denotes the current received in b when a is used as transmitter, and V_a denotes the voltage applied in a; I_{ba} and V_b are the corresponding quantities when b is the transmitter, a the receiver; it is assumed that the frequency and impedances remain unchanged. [ENG ACOUS] The sensitivity of a reversible electroacoustic transducer when used as a microphone divided by the sensitivity when used as a source of sound is independent of the type and construction of the transducer. { ˌres·ə'präs·əd·ē ˌthir·əm }

reclaimer [COMPUT SCI] A device that performs dynamic storage allocation, periodically searching memory to locate cells whose contents are no longer useful for computation, and making them available for other uses. { rē'klām·ər }

reclosing relay [ELEC] Form of voltage, current, power, or other type of relay which functions to reclose a circuit. { 'rēˌklōz·iŋ 'rēˌlā }

recognition [COMPUT SCI] The act or process of identifying (or associating) an input with one of a set of possible known alternatives, as in character recognition and pattern recognition. { ˌrek·ig'nish·ən }

recognition gate [COMPUT SCI] A logic circuit used to select devices identified by a binary address code. Also known as decoding gate. { ˌrek·ig'nish·ənˌgāt }

recoil implantation [ELECTR] A mechanism for ion-beam mixing of a film and a substrate in which atoms are driven from the film into the substrate as a result of direct collisions with incident ions. { 'rēˌkȯil ˌim·plan'tā·shən }

recombination coefficient [ELECTR] The rate of recombination of positive ions with electrons or

negative ions in a gas, per unit volume, divided by the product of the number of positive ions per unit volume and the number of electrons or negative ions per unit volume. { ˌrē,käm·bə'nā·shən ˌkō·iˌfish·ənt }

recombination electroluminescence *See* injection electroluminescence. { ˌrē,käm·bə'nā·shən iˌlek·trōˌlü·mə'nes·əns }

recombination velocity [ELECTR] On a semiconductor surface, the ratio of the normal component of the electron (or hole) current density at the surface to the excess electron (or hole) charge density at the surface. { ˌrē,käm·bə'nā·shən və ˌläs·əd·ē }

reconditioned carrier reception [ELECTR] Method of reception in which the carrier is separated from the sidebands to eliminate amplitude variations and noise, and is then added at an increased level to the sideband, to obtain a relatively undistorted output. { ˌrē·kən'dish·ənd 'kar·ē·ər riˌsep·shən }

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reconstitution [COMPUT SCI] The conversion of tokens back to the keywords they represent in a programming language, before generation of the output of an interpreted program. { rēˌkän·stə'tü·shən }

recontrol time *See* deionization time. { ˌrē·kən 'trōl ˌtīm }

record [COMPUT SCI] A group of adjacent data items in a computer system, manipulated as a unit. Also known as entity. { 'rek·ərd }

record block *See* physical record. { 'rek·ərd ˌbläk }

record density *See* bit density; character density. { 'rek·ərd ˌden·səd·ē }

recorder *See* recording instrument. { ri'kȯrd·ər }

record gap [COMPUT SCI] An area in a storage medium, such as magnetic tape or disk, which is devoid of information; it delimits records, and, on tape, allows the tape to stop and start between records without loss of data. Also known as interrecord gap (IRG). { 'rek·ərd ˌgap }

record head *See* recording head. { ri'kȯrd ˌhed }

recording-completing trunk [ELEC] Trunk for extending a connection from a local line to a toll operator, used for recording the call and for completing the toll connection. { ri'kȯrd·iŋ kəm'plēd·iŋ ˌtrəŋk }

recording density [COMPUT SCI] The amount of data that can be stored in a unit length of magnetic tape, usually expressed in bits per inch or characters per inch. { ri'kȯrd·iŋ ˌden·səd·ē }

recording head [ELECTR] A magnetic head used only for recording. Also known as record head. { ri'kȯrd·iŋ ˌhed }

recording instrument [ENG] An instrument that makes a graphic or acoustic record of one or more variable quantities. Also known as recorder. { ri'kȯrd·iŋ ˌin·strə·mənt }

recording lamp [ELECTR] A lamp whose intensity can be varied at an audio-frequency rate, for exposing variable-density sound tracks on motion-picture film and for exposing paper or film in photographic facsimile recording. { ri'kȯrd·iŋ ˌlamp }

recording level [ELECTR] Amplifier output level required to secure a satisfactory recording. { ri'kȯrd·iŋ ˌlev·əl }

recording noise [ELECTR] Noise that is introduced during a recording process. { ri'kȯrd·iŋ ˌnȯiz }

recording spot *See* picture element. { ri'kȯrd·iŋ ˌspät }

recording storage tube [ELECTR] Type of cathode-ray tube in which the electric equivalent of an image can be stored as an electrostatic charge pattern on a storage surface; there is no visual display, but the stored information can be read out at any later time as an electric output signal. { ri'kȯrd·iŋ 'stȯr·ij ˌtüb }

recording trunk [ELEC] Trunk extending from a local central office or private branch exchange to a toll office, which is used only for communications with toll operators and not for completing toll connections. { ri'kȯrd·iŋ ˌtrəŋk }

record layout [COMPUT SCI] A form showing how fields are positioned within a record, usually with information about each field. { 'rek·ərd ˌlāˌaůt }

record length [COMPUT SCI] The number of characters required for all the information in a record. { 'rek·ərd ˌleŋkth }

record locking [COMPUT SCI] Action of a computer system that makes a record that is being processed by one user unavailable to other users, to prevent more than one user from attempting to update the same information simultaneously. { 'rek·ərd ˌläk·iŋ }

record mark [COMPUT SCI] A symbol that signals a record's beginning or end. { 'rek·ərd ˌmärk }

record variable [COMPUT SCI] A group of related but dissimilar data items that can be worked on as a single unit. Also known as structured variable. { 'rek·ərd ˌver·ē·ə·bəl }

recovery interrupt [COMPUT SCI] A type of interruption of program execution which provides the computer with access to subroutines to handle an error and, if successful, to continue with the program execution. { ri'kəv·ə·rē 'int·əˌrəpt }

recovery routine [COMPUT SCI] A computer routine that attempts to resolve automatically conditions created by errors, without causing the computer system to shut down or otherwise do serious damage. { ri'kəv·ə·rē rüˌtēn }

recovery system [COMPUT SCI] A system for recognizing a malfunction in a database management system, reporting it, reconstructing the damaged part of the database, and resuming processing. { ri'kəv·ə·rē ˌsis·təm }

recovery time [ELECTR] **1.** The time required for the control electrode of a gas tube to regain control after anode-current interruption. **2.** The time required for a fired TR (transmit-receive) or pre-TR tube to deionize to such a level that the attenuation of a low-level radio-frequency

signal transmitted through the tube is decreased to a specified value. **3.** The time required for a fired ATR (anti-transmit-receive) tube to deionize to such a level that the normalized conductance and susceptance of the tube in its mount are within specified ranges. **4.** The interval required, after a sudden decrease in input signal amplitude to a system or component, to attain a specified percentage (usually 63%) of the ultimate change in amplification or attenuation due to this decrease. **5.** The time required for a radar receiver to recover to half sensitivity after the end of the transmitted pulse, so it can effectively receive a return echo; a consequence of duplexed operation. { ri'kəv·ə·rē ,tīm }

rectangular pulse [ELECTR] A pulse in which the wave amplitude suddenly changes from zero to another value at which it remains constant for a short period of time, and then suddenly changes back to zero. { rek'taŋ·gyə·lər 'pəls }

rectangular scanning [ELECTR] Two-dimensional sector scanning in which a slow sector scanning in one direction is superimposed on a rapid sector scanning in a perpendicular direction. { rek'taŋ·gyə·lər 'skan·iŋ }

rectangular scanning [ELECTR] Two-dimensional sector scanning in which a slow sector scanning in one direction is superimposed on a rapid sector scanning in a perpendicular direction. { rek'taŋ·gyə·lər 'skan·iŋ }

rectangular wave [ELECTR] A periodic wave that alternately and suddenly changes from one to the other of two fixed values. Also known as rectangular wave train. { rek'taŋ·gyə·lər 'wāv }

rectangular waveguide [ELECTROMAG] A waveguide having a rectangular cross section. { rek'taŋ·gyə·lər 'wāv,gīd }

rectangular wave train See rectangular wave. { rek'taŋ·gyə·lər 'wāv ,trān }

Rectenna [ELECTR] A device that converts microwave energy in direct-current power; consists of a number of small dipoles, each having its own diode rectifier network, which are connected to direct-current buses. { rek'ten·ə }

rectification [ELEC] The process of converting an alternating current to a unidirectional current. { ,rek·tə·fə'kā·shən }

rectification factor [ELECTR] Quotient of the change in average current of an electrode by the change in amplitude of the alternating sinusoidal voltage applied to the same electrode, the direct voltages of this and other electrodes being maintained constant. { ,rek·tə·fə'kā·shən ,fak·tər }

rectified value [ELEC] For an alternating quantity, the average of all the positive (or negative) values of the quantity during an integral number of periods. { 'rek·tə,fīd 'val·yü }

rectifier [ELEC] A nonlinear circuit component that allows more current to flow in one direction than the other; ideally, it allows current to flow in one direction unimpeded but allows no current to flow in the other direction. { 'rek·tə,fī·ər }

rectifier filter [ELECTR] An electric filter used in smoothing out the voltage fluctuation of an electron tube rectifier, and generally placed between the rectifier's output and the load resistance. { 'rek·tə,fī·ər ,fil·tər }

rectifier instrument [ENG] Combination of an instrument sensitive to direct current and a rectifying device whereby alternating current (or voltages) may be rectified for measurement. { 'rek·tə,fī·ər ,in·strə·mənt }

rectifier rating [ELECTR] A performance rating for a semiconductor rectifier, usually on the basis of the root-mean-square value of sinusoidal voltage that it can withstand in the reverse direction and the average current density that it will pass in the forward direction. { 'rek·tə,fī·ər ,rād·iŋ }

rectifier stack [ELECTR] A dry-disk rectifier made up of layers or stacks of disks of individual rectifiers, as in a selenium rectifier or copper-oxide rectifier. { 'rek·tə,fī·ər ,stak }

rectifier transformer [ELECTR] Transformer whose secondary supplies energy to the main anodes of a rectifier. { 'rek·tə,fī·ər tranz'fȯr·mər }

rectilinear scanning [ELECTR] Process of scanning an area in a predetermined sequence of narrow parallel strips. { ,rek·tə'lin·ē·ər 'skan·iŋ }

recuperability [COMMUN] Ability to continue to operate after a partial or complete loss of the primary communications facility resulting from sabotage, enemy attack, or other disaster. { rē ,küp·rə'bil·əd·ē }

recurrence rate See repetition rate. { ri'kər·əns ,rāt }

recursion [COMPUT SCI] A technique in which an apparently circular process is used to perform an iterative process. { ri'kər·zhən }

recursive filter [ELECTR] A digital filter that has feedback; that is, its output depends not only on present and past input values but on past output values as well. { ri,kər·siv 'fil·tər }

recursive macro call [COMPUT SCI] A call to a macroinstruction already called when used in conjunction with conditional assembly. { ri'kər·siv ,mak·rō ,kȯl }

recursive procedure [COMPUT SCI] A method of calculating a function by deriving values of it which become more accurate at each step; recursive procedures are explicitly outlawed in most systems with the exception of a few which use languages such as ALGOL and LISP. { ri'kər·siv prə'sē·jər }

recursive subroutine [COMPUT SCI] A reentrant subroutine whose partial results are stacked, with a processor stack pointer advancing and retracting as the subroutine is called and completed. { ri'kər·siv 'səb·rü,tēn }

recycling [ELECTR] Returning to an original condition, as to 0 or 1 in a counting circuit. { rē'sīk·liŋ }

redefine [COMPUT SCI] A procedure used in certain programming languages to specify different utilizations of the same storage area at different times. { ,rē·di'fīn }

redistribution [ELECTR] The alteration of charges on an area of a storage surface by secondary electrons from any other area of the surface in a charge storage tube or television camera tube. { rē,dis·trə'byü·shən }

redox cell [ELEC] Cell designed to convert the energy of reactants to electrical energy; an intermediate reductant, in the form of liquid electrolyte, reacts at the anode in a conventional manner; it is then regenerated by reaction with a primary fuel. { 'rē,däks ,sel }

red-tape operation *See* bookkeeping operation. { 'red ¦tāp ,äp·ə,rā·shən }

reduced instruction set computer [COMPUT SCI] A computer in which the compiler and hardware are interlocked, and the compiler takes over some of the hardware functions of conventional computers and translates high-level-language programs directly into low-level machine code. Abbreviated RISC. { ri¦düst in'strək·shən ,set kəm'pyüd·ər }

reduced-order controller [CONT SYS] A control algorithm in which certain modes of the structure to be controlled are ignored, to enable control commands to be computed with sufficient rapidity. { ri'düst ¦ȯr·dər kən'trōl·ər }

reduced telemetry [COMMUN] Raw telemetry data transformed into a usable form. { ri'düst tə'lem·ə·trē }

reduction [COMPUT SCI] Any process by which data are condensed, such as changing the encoding to eliminate redundancy, extracting significant details from the data and eliminating the rest, or choosing every second or third out of the totality of available points. { ri'dək·shən }

reduction rule [COMPUT SCI] The principal computation rule in the lambda calculus; it states that an operator-operand combination of the form $(\lambda x M A)$ may be transformed into the expression $S^x_A M$, obtained by substituting the lambda expression A for all instances of x in M, provided there are no conflicts of variable names. Also known as beta rule. { ri'dək·shən ,rül }

reductive grammar [COMPUT SCI] A set of syntactic rules for the analysis of strings to determine whether the strings exist in a language. { ri'dək·tiv 'gram·ər }

redundancy [COMMUN] In the transmission of information, the fraction of the gross information content of a message which can be eliminated without loss of essential information. [COMPUT SCI] Any deliberate duplication or partial duplication of circuitry or information to decrease the probability of a system or communication failure. { ri'dən·dən·sē }

redundancy bit [COMPUT SCI] A bit which carries no information but which is added to the information-carrying bits of a character or stream of characters to determine their accuracy. { ri'dən·dən·sē ,bit }

redundancy check [COMPUT SCI] A forbidden-combination check that uses redundant digits called check digits to detect errors made by a computer. { ri'dən·dən·sē ,chek }

redundant array of inexpensive disks *See* RAID. { ri,dən·dənt ə¦rā əv ,in·ik,spen·siv 'disks }

redundant character [COMPUT SCI] A character specifically added to a group of characters to ensure conformity with certain rules which can be used to detect computer malfunction. { ri'dən·dənt 'kar·ik·tər }

redundant code [COMMUN] A code which uses more signal elements than are needed to represent the information it transmits. { ri'dən·dənt 'kōd }

redundant digit [COMPUT SCI] Digit that is not necessary for an actual computation but serves to reveal a malfunction in a digital computer. { ri'dən·dənt 'dij·it }

redundant system *See* duplexed system. { ri'dən·dənt ,sis·təm }

reed frequency meter *See* vibrating-reed frequency meter. { 'rēd 'frē·kwən·sē ,mēd·ər }

Reed-Solomon code [COMMUN] A linear, block-based error-correcting code with wide-ranging applications, which is based on the mathematics of finite fields. { ¦rēd 'säl·ə·mən ,kōd }

reel number [COMPUT SCI] A number identifying a reel of magnetic tape in a file containing more than one reel and indicating the order in which the reel is to be used. Also known as reel sequence number. { 'rēl ,nəm·bər }

reel sequence number *See* reel number. { 'rēl 'sē·kwəns ,nəm·bər }

reenterable [COMPUT SCI] The attribute that describes a program or routine which can be shared by several tasks concurrently. { rē'en·trə·bəl }

reentrant code *See* reentrant program. { rē'en·trənt ,kōd }

reentrant program [COMPUT SCI] A subprogram in a time-sharing or multiprogramming system that can be shared by a number of users, and can therefore be applied to a given user program, interrupted, and applied to some other user program, and then reentered at the point of interruption of the original user program. Also known as reentrant code. { rē'en·trənt ,prō,gram }

reentrant winding [ELEC] Armature winding that returns to its starting point, thus forming a closed circuit. { rē'en·trənt ,wīnd·iŋ }

reentry point [COMPUT SCI] The instruction in a computer program at which execution is resumed after the program has jumped to another place. { rē'en·trē ,point }

reentry system *See* turnaround system. { rē'en·trē ,sis·təm }

reference address *See* address constant. { 'ref·rəns 'ad,res }

reference block [COMPUT SCI] A block with a computer program governing a numerically controlled machine which has enough data to allow resumption of the program following an interruption. { 'ref·rəns ,bläk }

reference burst *See* color burst. { 'ref·rəns ,bərst }

reference frequency [COMMUN] Frequency having a fixed and specified position with respect to the assigned frequency. { 'ref·rəns frē·kwən·sē }

reference level [ENG ACOUS] The level used as a basis of comparison when designating the level of an audio-frequency signal in decibels or volume units. Also known as reference signal level. { 'ref·rəns ,lev·əl }

reference listing [COMPUT SCI] A list printed by a compiler showing the instructions in the machine language program which it generates. { 'ref·rəns ,list·iŋ }

reference mark [ELECTR] One of the marks used in a design of a printed circuit, giving scale dimensions and indicating the edges of the circuit board. { 'ref·rəns ,märk }

reference monitor [COMPUT SCI] A means of checking that a particular user is allowed access to a specified object in a computing system. Also known as access-control mechanism; reference validation mechanism. { 'ref·rəns ,män·əd·ər }

reference noise [ELECTR] The power level used as a basis of comparison when designating noise power expressed in decibels above reference noise (dBrn); the reference usually used is 10^{-12} watt (−90 decibels above 1 milliwatt; dBm) at 1000 hertz. { 'ref·rəns ,nóiz }

reference record [COMPUT SCI] Output of a compiler that lists the operations and their positions in the final specific routine and contains information describing the segmentation and storage allocation of the routine. { 'ref·rəns ,rek·ərd }

reference signal level *See* reference level. { 'ref·rəns 'sig·nəl ,lev·əl }

reference supply [ELECTR] A source of stable and constant voltage, such as a Zener diode, used in analog computers, regulated power supplies, and a variety of other circuits for comparison with a varying voltage. { 'ref·rəns sə,plī }

reference tone [ENG] Stable tone of known frequency continuously recorded on one track of multitrack signal recordings and intermittently recorded on signal track recordings by the collection equipment operators for subsequent use by the data analysts as a frequency reference. { 'ref·rəns ,tōn }

reference validation mechanism *See* reference monitor. { 'ref·rəns ,val·ə'dā·shən ,mek·ə,niz·əm }

reference voltage [ELEC] An alternating-current voltage used for comparison, usually to identify an in-phase or out-of-phase condition in an ac circuit. { 'ref·rəns ,vōl·tij }

reference white [COMMUN] **1.** In a scene viewed by video camera, the color of light from a nonselective diffuse reflector that is lighted by the normal illumination of the scene. **2.** The color by which this color is simulated on a video screen or other display device. { 'ref·rəns ,wīt }

reference white level [ELECTR] In television, the level at the point of observation corresponding to the specified maximum excursion of the picture signal in the white direction. { 'ref·rəns 'wīt ,lev·əl }

reflectance [COMPUT SCI] In optical character recognition, the relative brightness of the inked area that forms the printed or handwritten character; distinguished from background reflectance and brightness. { ri'flek·təns }

reflected binary [COMPUT SCI] A particular form of Gray code which is constructed according to the following rule: Let the first 2^N code patterns be given, for any N greater than 1; the next 2^N code patterns are derived by changing the $(N + 1)$-th bit from the right from 0 to 1 and repeating the original 2^N patterns in reverse order in the N rightmost positions. Also known as reflected code. { ri'flek·təd 'bī,ner·ē }

reflected code *See* reflected binary. { ri'flek·təd 'kōd }

reflected impedance [ELEC] **1.** Impedance value that appears to exist across the primary of a transformer due to current flowing in the secondary. **2.** Impedance which appears at the input terminals as a result of the characteristics of the impedance at the output terminals. { ri'flek·təd im'pēd·əns }

reflected resistance [ELEC] Resistance value that appears to exist across the primary of a transformer when a resistive load is across the secondary. { ri'flek·təd ri'zis·təns }

reflecting antenna [ELECTROMAG] An antenna used to achieve greater directivity or desired radiation patterns, in which a dipole, slot, or horn radiates toward a larger reflector which shapes the radiated wave to produce the desired pattern; the reflector may consist of one or two plane sheets, a parabolic or paraboloidal sheet, or a paraboloidal horn. { ri'flek·tiŋ an'ten·ə }

reflecting curtain [ELECTROMAG] A vertical array of half-wave reflecting antennas, generally used one quarter-wavelength behind a radiating curtain of dipoles to form a high-gain antenna. { ri'flek·tiŋ 'kərt·ən }

reflecting electrode [ELECTR] Tabular outer electrode or the repeller plate in a microwave oscillator tube, corresponding in construction but not in function to the plate of an ordinary triode, used for generating extremely high frequencies. { ri'flek·tiŋ i'lek,trōd }

reflecting galvanometer *See* mirror galvanometer. { ri'flek·tiŋ ,gal·və'näm·əd·ər }

reflecting grating [ELECTROMAG] Arrangement of wires placed in a waveguide to reflect one desired wave while allowing one or more other waves to pass freely. { ri'flek·tiŋ 'grād·iŋ }

reflection altimeter *See* radio altimeter. { ri'flek·shən al'tim·əd·ər }

reflection factor [ELEC] Ratio of the load current that is delivered to a particular load when the impedances are mismatched to that delivered under conditions of matched impedances. Also known as mismatch factor; reflectance; transition factor. { ri'flek·shən ,fak·tər }

reflection lobes [ELECTROMAG] Three-dimensional sections of the radiation pattern of a directional antenna, such as a radar antenna, which results from reflection of radiation from the earth's surface. { ri'flek·shən ,lōbz }

reflection loss [ELEC] **1.** Reciprocal of the ratio, expressed in decibels, of the scalar values of the

volt-amperes delivered to the load to the volt-amperes that would be delivered to a load of the same impedance as the source. **2.** Apparent transmission loss of a line which results from a portion of the energy being reflected toward the source due to a discontinuity in the transmission line. { ri'flek·shən ˌlós }

reflective binary code *See* reflected binary. { ri'flek·tiv 'bī,ner·ē 'kōd }

reflective code *See* Gray code. { ri'flek·tiv 'kōd }

reflective spot [COMPUT SCI] A piece of metallic foil that is embedded in a magnetic tape to indicate the end of a reel. { ri'flek·tiv ˌspät }

reflector [ELECTROMAG] **1.** A single rod, system of rods, metal screen, or metal sheet used behind an antenna to increase its directivity. **2.** A metal sheet or screen used as a mirror to change the direction of a microwave radio beam. { ri'flek·tər }

reflector characteristic [ELECTR] A chart of power output and frequency deviation of a reflex klystron as a function of reflector voltage. { ri'flek·tər ˌkar·ik·tə'ris·tik }

reflector microphone [ENG ACOUS] A highly directional microphone which has a surface that reflects the rays of impinging sound from a given direction to a common point at which a microphone is located, and the sound waves in the speech-frequency range are in phase at the microphone. { ri'flek·tər ˌmī·krəˌfōn }

reflector voltage [ELECTR] Voltage between the reflector electrode and the cathode in a reflex klystron. { ri'flek·tər ˌvōl·tij }

reflex baffle [ENG ACOUS] A loudspeaker baffle in which a portion of the radiation from the rear of the diaphragm is propagated forward after controlled shift of phase or other modification, to increase the overall radiation in some portion of the audio-frequency spectrum. Also known as vented baffle. { 'rēˌfleks ˌbaf·əl }

reflex bunching [ELECTR] The bunching that occurs in an electron stream which has been made to reverse its direction in the drift space. { 'rēˌfleks ˌbənch·iŋ }

reflex circuit [ELECTR] A circuit in which the signal is amplified twice by the same amplifier tube or tubes, once as an intermediate-frequency signal before detection and once as an audio-frequency signal after detection. { 'rēˌfleks ˌsər·kət }

reflexive processing [COMPUT SCI] Information processing in which two or more computers connected by communications channels run identical programs and take the same actions at the same time, so that users in different locations can work on the same programs at the same time. { ri'flek·siv 'präˌses·iŋ }

reflex klystron [ELECTR] A single-cavity klystron in which the electron beam is reflected back through the cavity resonator by a repelling electrode having a negative voltage; used as a microwave oscillator. Also known as reflex oscillator. { 'rēˌfleks 'klīˌsträn }

reflex oscillator *See* reflex klystron. { 'rēˌfleks 'äs·əˌlād·ər }

reformat [COMPUT SCI] To change the arrangement of data in a storage device. { rē'fȯr·mat }

refraction [COMMUN] That property of earth's atmosphere that, due to its density profile, causes radio waves to propagate generally with a downward curve, sometimes rivaling the curvature of the earth; in radar height estimation, corrections for estimated refraction must be made. [ELECTROMAG] The change in direction of lines of force of an electric or magnetic field at a boundary between media with different permittivities or permeabilities. { ri'frak·shən }

refraction loss [ELECTROMAG] Portion of the transmission loss that is due to refraction resulting from nonuniformity of the medium. { ri'frak·shən ˌlós }

refractive constant *See* index of refraction. { ri'frak·tiv 'kän·stənt }

refractive index *See* index of refraction. { ri'frak·tiv ˌinˌdeks }

refresh [COMPUT SCI] A process of periodically replacing data to prevent the data from decaying, as on a cathode-ray-tube display or in a dynamic random-access memory. { ri'fresh }

regenerate [ELECTR] **1.** To restore pulses to their original shape. **2.** To restore stored information to its original form in a storage tube in order to counteract fading and disturbances. { rē'jen·əˌrāt }

regeneration [CONT SYS] *See* positive feedback. [ELECTR] Replacement or restoration of charges in a charge storage tube to overcome decay effects, including loss of charge by reading. { rēˌjen·ə'rā·shən }

regenerative amplifier [ELECTR] An amplifier that uses positive feedback to give increased gain and selectivity. { rē'jen·rəd·iv 'am·pləˌfī·ər }

regenerative braking [ELEC] A system of dynamic braking in which the electric drive motors are used as generators and return the kinetic energy of the motor armature and load to the electric supply system. { rē'jen·rəd·iv 'brāk·iŋ }

regenerative clipper [ELECTR] A type of monostable multivibrator which is a modification of a Schmitt trigger; used for pulse generation. { rē'jen·rəd·iv 'klip·ər }

regenerative detector [ELECTR] A vacuum-tube detector circuit in which radio-frequency energy is fed back from the anode circuit to the grid circuit to give positive feedback at the carrier frequency, thereby increasing the amplification and sensitivity of the circuit. { rē'jen·rəd·iv di'tek·tər }

regenerative divider [ELECTR] Frequency divider which employs modulation, amplification, and selective feedback to produce the output wave. { rē'jen·rəd·iv di'vīd·ər }

regenerative feedback *See* positive feedback. { rē'jen·rəd·iv 'fēdˌbak }

regenerative fuel cell [ELEC] A fuel cell in which the reaction product is processed to regenerate the reactants. { rē'jen·rəd·iv 'fyülˌsel }

regenerative read [COMPUT SCI] A read operation in which the data are automatically written back

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device. { rē'fȯr·mat }
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into the locations from which they are taken. { rē'jen·rəd·iv 'rēd }

regenerative receiver [ELECTR] A radio receiver that uses a regenerative detector. { rē'jen·rəd·iv ri'sē·vər }

regenerative repeater [COMMUN] A repeater that performs pulse regeneration to restore the original shape of a pulse signal used in teletypewriter and other code circuits. { rē'jen·rəd·iv ri'pēd·ər }

regenerator [ELECTR] **1.** A circuit that repeatedly supplies current to a display or memory device to prevent data from decaying. **2.** *See* repeater. { rē'jen·əˌrād·ər }

region [COMPUT SCI] A group of machine addresses which refer to a base address. { 'rē·jən }

regional address [COMPUT SCI] An address of a machine instruction within a series of consecutive addresses, for example, R18 and R19 are specific addresses in an R region of N consecutive addresses, where all addresses must be named. { 'rēj·ən·əl ə'dres }

regional center [COMMUN] A long-distance telephone office which has the highest rank in routing of telephone calls. { 'rēj·ən·əl 'sen·tər }

register [COMMUN] **1.** The accurate matching or superimposition of two or more images, such as the three color images on the screen of a color display. Also known as registration. **2.** The alignment of positions relative to a specified reference or coordinate, such as hole alignments in punched cards, or positioning of images in an optical character recognition device. **3.** Part of an automatic switching telephone system that receives and stores the dialing pulses that control the further operations necessary in establishing a telephone connection. [COMPUT SCI] The computer hardware for storing one machine word. { 'rej·ə·stər }

register capacity [COMPUT SCI] The upper and lower limits of the numbers which may be processed in a register. { 'rej·ə·stər kə'pas·əd·ē }

register circuit [ELECTR] A switching circuit with memory elements that can store from a few to millions of bits of coded information; when needed, the information can be taken from the circuit in the same code as the input, or in a different code. { 'rej·ə·stərˌsər·kət }

register control [CONT SYS] Automatic control of the position of a printed design with respect to reference marks or some other part of the design, as in photoelectric register control. { 'rej·ə·stər kənˌtrōl }

register length [COMPUT SCI] The number of digits, characters, or bits, which a register can store. { 'rej·ə·stər ˌleŋkth }

register-level compatibility [COMPUT SCI] Property of hardware components that are totally compatible, having registers with the same type, size, and names. { ˌrej·ə·stər ˌlev·əl kəmˌpad·ə'bil·əd·ē }

register-sender [COMMUN] A unit that generates and recognizes the supervisory signals to make connection to a circuit switching unit. { 'rej·ə·stər 'sen·dər }

register variable [COMPUT SCI] A variable in a computer program that is assigned to a register in the central processing unit instead of to a location in main storage. { 'rej·ə·stərˌver·ē·ə·bəl }

registration *See* register. { ˌrej·ə'strā·shən }

registration mark [COMPUT SCI] In character recognition, a preprinted indication of the relative position and direction of various elements of the source document to be recognized. { ˌrej·ə'strā·shən ˌmärk }

regular [ELECTROMAG] In a definite direction; not diffused or scattered, when applied to reflection, refraction, or transmission. { 'reg·yə·lər }

regular expression [COMPUT SCI] A formal description of a language acceptable by a finite automaton or for the behavior of a sequential switching circuit. { 'reg·yə·lər ik'spresh·ən }

regulated power supply [ELEC] A power supply containing means for maintaining essentially constant output voltage or output current under changing load conditions. { 'reg·yəˌlād·əd 'paù·ər səˌplī }

regulating system *See* automatic control system. { 'reg·yəˌlād·iŋ ˌsis·təm }

regulating transformer [ELEC] Transformer having one or more windings excited from the system circuit or a separate source and one or more windings connected in series with the system circuit for adjusting the voltage or the phase relation or both in steps, usually without interrupting the load. { 'reg·yəˌlād·iŋ tranzˌfȯr·mər }

regulating winding [ELEC] Of a transformer, a supplementary winding connected in series with one of the main windings to change the ratio of transformation or the phase relation, or both, between circuits. { 'reg·yəˌlād·iŋ ˌwīnd·iŋ }

regulation [CONT SYS] The process of holding constant a quantity such as speed, temperature, voltage, or position by means of an electronic or other system that automatically corrects errors by feeding back into the system the condition being regulated; regulation thus is based on feedback, whereas control is not. [ELEC] The change in output voltage that occurs between no load and full load in a transformer, generator, or other source. [ELECTR] The difference between the maximum and minimum tube voltage drops within a specified range of anode current in a gas tube. { ˌreg·yə'lā·shən }

regulation of constant-current transformer [ELEC] Maximum departure of the secondary current from its rated value expressed in percent of the rated secondary current, with rated primary voltage and frequency applied. { ˌreg·yə'lā·shən əv ˌkän·stənt ˌkə·rənt tranz'fȯr·mər }

regulator [CONT SYS] A device that maintains a desired quantity at a predetermined value or varies it according to a predetermined plan. { 'reg·yəˌlād·ər }

regulator problem *See* linear regulator problem. { 'reg·yəˌlād·ər ˌpräb·ləm }

reimbursed time [COMPUT SCI] The machine time which is loaned or rented to another office, agency, or organization, either on a reimbursable or reciprocal basis. { 'rē·əmˌbərst 'tīm }

Reinartz crystal oscillator [ELECTR] Crystal-controlled vacuum-tube oscillator in which the crystal current is kept low by placing a resonant circuit in the cathode lead tuned to half the crystal frequency; the resulting regeneration at the crystal frequency improves efficiency without the danger of uncontrollable oscillation at other frequencies. { 'rīn,ärts 'krist·əl 'äs·ə,lād·ər }

reinitialize [COMPUT SCI] To return a computer program to the condition it was in at the start of processing, so that nothing remains from previous executions of the program. { ¦rē·i'nish·əl ,īz }

reinserter *See* direct-current restorer. { ¦rē·ən 'sərd·ər }

reinsertion of carrier [ELECTR] Combining a locally generated carrier signal in a receiver with an incoming signal of the suppressed carrier type. { ¦rē·ən'sər·shən əv 'kar·ē·ər }

rejection band [ELECTROMAG] The band of frequencies below the cutoff frequency in a uniconductor waveguide. Also known as stop band. { ri'jek·shən ,band }

rejector *See* trap. { ri'jek·tər }

rejector circuit *See* band-stop filter. { ri'jek·tər ,sər·kət }

rejector impedance *See* dynamic impedance. { ri'jek·tər im,pēd·əns }

relation [COMPUT SCI] A two-dimensional table in which data are arranged in a relational data structure. { ri'lā·shən }

relational algebraic language [COMPUT SCI] A low-level procedural language for carrying out fundamental algebraic operations on a database of relations. { ri'lā·shən·əl 'al·jə,brā·ik ,laŋ·gwij }

relational calculus language [COMPUT SCI] A higher-level nonprocedural language for operating on a database of relations, containing statements that can be mapped to the fundamental algebraic operations on the database. { ri'lā·shən·əl 'kal·kyə·ləs ,laŋ·gwij }

relational capability [COMPUT SCI] Property of two or more data files that can be joined together for viewing, editing, or creation of reports. { ri ¦lā·shən·əl ,kāp·ə'bil·əd·ē }

relational database *See* relational system. { ri'lā·shən·əl 'dad·ə,bās }

relational data structure [COMPUT SCI] A type of data structure in which data are represented as tables in which no entry contains more than one value. { ri'lā·shən·əl 'dad·ə ,strək·chər }

relationally complete [COMPUT SCI] Property of a programming language that provides for the construction of all relations derivable from some set of base relations by the application of the primitive algebraic operations. { ri'lā·shən·əl·ē kəm'plēt }

relational operator [COMPUT SCI] An operator that indicates whether one quantity is equal to, greater than, or less than another. { ri'lā·shən·əl 'äp·ə,rād·ər }

relational spreadsheet [COMPUT SCI] A spreadsheet whose data are stored in a central database and are copied from the database into the spreadsheet when the spreadsheet is called up. { ri¦lā·shən·əl 'spred,shēt }

relational system [COMPUT SCI] A database management system in which a relational data structure is used. Also known as relational database. { ri'lā·shən·əl ,sis·təm }

relative address [COMPUT SCI] The numerical difference between a desired address and a known reference address. { 'rel·əd·iv ə'dres }

relative attenuation [ELECTR] The ratio of the peak output voltage of an electric filter to the voltage at the frequency being considered. { 'rel·əd·iv ə,ten·yə'wā·shən }

relative bandwidth [ELECTR] For an electric filter, the ratio of the bandwidth being considered to a specified reference bandwidth, such as the bandwidth between frequencies at which there is an attenuation of 3 decibels. { 'rel·əd·iv 'ban ,width }

relative byte address [COMPUT SCI] A relative address expressed as the number of bytes from a point of reference to the desired address. { 'rel·ə·tiv 'bīt ,ad,res }

relative coding [COMPUT SCI] A form of computer programming in which the address part of an instruction indicates not the desired address but the difference between the location of the instruction and the desired address. { 'rel·əd·iv 'kōd·iŋ }

relative dielectric constant *See* dielectric constant. { 'rel·əd·iv ¦dī·i'lek·trik 'kän·stənt }

relative gain [ELECTROMAG] The gain of an antenna in a given direction when the reference antenna is a half-wave, loss-free dipole isolated in space whose equatorial plane contains the given direction. { 'rel·əd·iv ¦gān }

relative interference effect [ENG ACOUS] Of a single-frequency electric wave in an electroacoustic system, the ratio, usually expressed in decibels, of the amplitude of a wave of specified reference frequency to that of the wave in question when the two waves are equal in interference effects. { 'rel·əd·iv ,in·tər'fir·əns i,fekt }

relative permittivity *See* dielectric constant. { 'rel·əd·iv ,pər·mə'tiv·əd·ē }

relative power gain [ELECTROMAG] Of one transmitting or receiving antenna over another, the measured ratio of the signal power one produces at the receiver input terminals to that produced by the other, the transmitting power level remaining fixed. { 'rel·əd·iv 'paù·ər ,gān }

relative resistance [ELEC] The ratio of the resistance of a piece of a material to the resistance of a piece of specified material, such as annealed copper, having the same dimensions and temperature. { 'rel·əd·iv ri'zis·təns }

relative response [ELECTR] In a transducer, the amount (in decibels) by which the response under some particular condition exceeds the response under a reference condition. { 'rel·əd·iv ri'späns }

relative triple precision [COMPUT SCI] The retention of three times as many digits of a quantity as the computer normally handles; for example, a computer whose basic word consists

of 10 decimal digits is called upon to handle 30 decimal digit quantities. { 'rel·əd·iv 'trip·əl prə'sizh·ən }

relative vector [COMPUT SCI] In computer graphics, a vector whose end points are given in relative coordinates. { 'rel·əd·iv 'vek·tər }

relaxation circuit [ELECTR] Circuit arrangement, usually of vacuum tubes, reactances, and resistances, which has two states or conditions, one, both, or neither of which may be stable; the transient voltage produced by passing from one to the other, or the voltage in a state of rest, can be used in other circuits. { ˌrē,lak'sā·shən ˌsər·kət }

relaxation inverter [ELECTR] An inverter that uses a relaxation oscillator circuit to convert direct-current power to alternating-current. { ˌrē ˌlak'sā·shən in,vərd·ər }

relaxation oscillator [ELECTR] An oscillator whose fundamental frequency is determined by the time of charging or discharging a capacitor or coil through a resistor, producing waveforms that may be rectangular or sawtooth. { ˌrē ˌlak'sā·shən ˌäs·ə,lād·ər }

relay [COMMUN] A microwave or other radio system used for passing a signal from one radio communication link to another. [ELEC] A device that is operated by a variation in the conditions in one electric circuit and serves to make or break one or more connections in the same or another electric circuit. Also known as electric relay. { 'rē,lā }

relay center [COMMUN] A switching center in which messages are automatically routed according to data contained in the messages or message headers. { 'rē,lā ˌsen·tər }

relay contact [ELEC] One of the pair of contacts that are closed or opened by the movement of the armature of a relay. { 'rē,lā ˌkän,takt }

relay control system [CONT SYS] A control system in which the error signal must reach a certain value before the controller reacts to it, so that the control action is discontinuous in amplitude. { 'rē,lā kən'trōl ˌsis·təm }

relay satellite *See* communications satellite. { 'rē ˌlā ˌsad·əl,īt }

relay selector [ELEC] Relay circuit associated with a selector, consisting of a magnetic impulse counter, for registering digits and holding a circuit. { 'rē,lā si,lek·tər }

relay station *See* repeater station. { 'rē,lā ˌstā·shən }

relay system [COMMUN] *See* radio relay system. [ELEC] Dial-switching equipment that does not use mechanical switches, but is made up principally of relays. { 'rē,lā ˌsis·təm }

reliability [ENG] The probability that a component part, equipment, or system, including computer hardware and software, will satisfactorily perform its intended function under given circumstances, such as environmental conditions, limitations as to operating time, and frequency and thoroughness of maintenance for a specified period of time. { ri,lī·ə'bil·əd·ē }

relieving anode [ELECTR] Of a pool-cathode tube, an auxiliary anode which provides an alternative conducting path for reducing the current to another electrode. { ri'lēv·iŋ ˌan,ōd }

relocatable code [COMPUT SCI] A code generated by an assembler or compiler, and in which all memory references needing relocation are either specially marked or relative to the current program-counter reading. { ¦rē·lō¦kād·ə·bəl 'kōd }

relocatable emulator [COMPUT SCI] An emulator which does not require a stand-alone machine but executes in a multiprogramming environment. { ¦rē·lō¦kād·ə·bəl 'em·yəˌlād·ər }

relocatable program [COMPUT SCI] A program coded in such a way that it may be located and executed in any part of memory. { ¦rē·lō¦kād·ə·bəl 'prōˌgram }

relocate [COMPUT SCI] To establish or change the location of a program routine while adjusting or modifying the address references within the instructions to correctly indicate the new locations. { rē'lōˌkāt }

relocating loader [COMPUT SCI] A loader in which some of the addresses in the program to be loaded are expressed relative to the start of the program rather than in absolute form. { ¦rē·lō ¦kād·iŋ 'lōd·ər }

relocation hardware [COMPUT SCI] Equipment in a multiprogramming system which allows a computer program to be run in any available space in memory. { ˌrē·lō'kā·shən ˌhärd,wer }

relocation register [COMPUT SCI] A hardware element that holds a constant to be added to the address of each memory location in a computer program running in a multiprogramming system, as determined by the location of the area in memory assigned to the program. { ˌrē·lō'kā·shən ˌrej·ə·stər }

reluctance microphone *See* magnetic microphone. { ri'lək·təns ˌmī·krəˌfōn }

reluctance motor [ELEC] A synchronous motor, similar in construction to an induction motor, in which the member carrying the secondary circuit has salient poles but no direct-current excitation; it starts as an induction motor but operates normally at synchronous speed. { ri'lək·təns ˌmōd·ər }

reluctance pressure transducer [ENG] Pressure-measurement transducer in which pressure changes activate equivalent magnetic-property changes. { ri'lək·təns 'presh·ər tranzˌdü·sər }

remedial maintenance *See* corrective maintenance. { ri'mēd·ē·əl 'mānt·ən·əns }

remember condition [ELECTR] Condition of a flip-flop circuit in which no change takes place between a given internal state and the next state. { ri'mem·bər kənˌdish·ən }

remodulator [ELECTR] A circuit that converts amplitude modulation to audio frequency-shift modulation for transmission of data signals over a radio channel. Also known as converter. { rē'mäj·əˌlād·ər }

remote access [COMPUT SCI] Ability to gain entry to a computer system from a location some distance away. { ri'mōt 'akˌses }

remote batch computing [COMPUT SCI] The running of programs, usually during nonprime hours,

or whenever the demands of real-time or time-sharing computing slacken sufficiently to allow less pressing programs to be run. { ri'mōt 'bach kəm,pyüd·iŋ }

remote batch processing [COMPUT SCI] Batch processing in which an input device is located at a distance from the main installation and has access to a computer through a communication link. { ri'mōt 'bach ,prä,ses·iŋ }

remote calculator [COMPUT SCI] A keyboard device that can be connected to the central processing unit of a distant computer over an ordinary telephone channel, enabling the user to present programs to the computer. { ri'mōt 'kal·kyə ,lād·ər }

remote communications software [COMPUT SCI] Software that allows a microcomputer to control or duplicate the operation of another microcomputer at a distant location, using the standard telephone system. { ri¦mōt kə,myü·nə'kā·shənz 'söf,wer }

remote computing system [COMPUT SCI] A data-processing system that has terminals distant from the central processing unit, from which users can communicate with the central processing unit and compile, debug, test, and execute programs. { ri'mōt kəm'pyüd·iŋ ,sis·təm }

remote computing system exchange [COMPUT SCI] A device that handles communications between the central processing unit and remote consoles of a remote computing system, and enables several remote consoles to operate at the same time without interfering with each other. { ri'mōt kəm'pyüd·iŋ ,sis·təm iks,chānj }

remote computing system language [COMPUT SCI] A computer language used for communications between the central processing unit and remote consoles of a remote computer system, generally incorporating a procedure-oriented language such as FORTRAN, but also containing operating statements, such as instructions to debug or execute programs. { ri'mōt kəm'pyüd·iŋ ,sis·təm ,laŋ·gwij }

remote computing system log [COMPUT SCI] A record of the volumes of data transmitted and of the frequency of various types of events during the operation of remote consoles in a remote computing system. { ri'mōt kəm'pyüd·iŋ ,sis·təm ,läg }

remote console [COMPUT SCI] A terminal in a remote computing system that has facilities for communicating with, and exerting control over, the central processing unit, and which may have any of various types of display units, printers, and data entry devices for direct communication with the central processing unit. { ri'mōt 'kän,sōl }

remote control [CONT SYS] Control of a quantity which is separated by an appreciable distance from the controlling quantity; examples include telemetering, telephone, and television. { ri'mōt kən'trōl }

remote-cutoff tube *See* variable-mu tube. { ri'mōt ¦kəd,óf ,tüb }

remote debugging [COMPUT SCI] **1.** The testing and correction of computer programs at a remote console of a remote computing system. **2.** *See* remote testing. { ri'mōt dē'bəg·iŋ }

remote indicator [ELECTR] **1.** An indicator located at a distance from the data-gathering sensing element, with data being transmitted to the indicator mechanically, electrically over wires, or by means of light, radio, or sound waves. **2.** *See* repeater. { ri'mōt 'in·də,kād·ər }

remote inquiry [COMPUT SCI] Interrogation of the content of an automatic data-processing equipment storage unit from a device remotely displaced from the storage unit site. { ri'mōt 'in ,kwə·rē }

remote manipulator [ENG] A mechanical, electromechanical, or hydromechanical device that enables a person, directly controlling the device through handles or switches, to perform manual operations while separated from the site of the work. Also known as manipulator; teleoperator. { ri'mōt mə'nip·yə,lād·ər }

remote metering *See* telemetering. { ri'mōt 'mēd·ə·riŋ }

remote pickup [COMMUN] Picking up a radio or television program at a remote location and relaying it to the studio or transmitter over wire lines or a radio link. { ri'mōt 'pik,əp }

remote plan position indicator *See* plan position indicator repeater. { ri'mōt ¦plan pə¦zish·ən 'in·də,kād·ər }

remote sensing [ELEC] Sensing, by a power supply, of voltage directly at the load, so that variations in the load lead drop do not affect load regulation. { ri 'mōt 'sens·iŋ }

remote subscriber [COMMUN] Subscriber to a network that does not have direct access to the switching center, but has access to the circuit through a facility such as a base message center. { ri'mōt səb'skrīb·ər }

remote terminal [COMPUT SCI] A computer terminal which is located away from the central processing unit of a data-processing system, at a location convenient to a user of the system. { ri'mōt 'tər·mən·əl }

remote testing [COMPUT SCI] A method of testing and correcting computer programs; programmers do not go to the computer center but provide detailed instructions to be carried out by computer operators along with the programs and associated test data. Also known as remote debugging. { ri'mōt 'test·iŋ }

removable medium [COMPUT SCI] A data storage medium, such as magnetic tape or floppy disk, that can be physically removed from the unit that reads and writes on it. { ri'müv·ə·bəl 'mē·dē·əm }

removable plugboard *See* detachable plugboard. { ri'müv·ə·bəl 'pləg,bōrd }

REM statement [COMPUT SCI] A statement in a computer program that consists of remarks or comments that document the program, and contains no executable code. { 'rem ,stāt·mənt }

repeatability [CONT SYS] The ability of a robot to reposition itself at a location to which it is directed or at which it is commanded to stop. { ri,pēd·ə'bil·əd·ē }

repeat accuracy [CONT SYS] The variations in the actual position of a robot manipulator from one cycle to the next when the manipulator is commanded to repeatedly return to the same point or position. { ri'pēt 'ak·yə·rə·sē }

repeater [ELEC] *See* repeating coil. [ELECTR] **1.** An amplifier or other device that receives weak signals and delivers corresponding stronger signals with or without reshaping of waveforms; may be either a one-way or two-way repeater. Also known as regenerator. **2.** An indicator that shows the same information as is shown on a master indicator. Also known as remote indicator. { ri'pēd·ər }

repeater jammer [ELECTR] A jammer that intercepts an enemy radar signal and reradiates the signal after modifying it to incorporate erroneous data on azimuth, range, or number of targets. { ri'pēd·ər ˌjam·ər }

repeater station [COMMUN] A station containing one or more repeaters. Also known as relay station. { ri'pēd·ər ˌstā·shən }

repeating coil [ELEC] A transformer used to provide inductive coupling between two sections of a telephone line when a direct connection is undesirable. Also known as repeater. { ri 'pēd·iŋ ˌkȯil }

repeating-coil bridge cord [ELEC] In telephony, a method of connecting the common office battery to the cord circuits by connecting the battery to the midpoints of a repeating coil, bridged across the cord circuit. { ri'pēd·iŋ ¦kȯil 'brij ˌkȯrd }

repeat key [COMPUT SCI] A key on a typewriter or computer keyboard that, when depressed at the same time as a character key, causes repeated printing or generation of the character until one of the keys is released. { ri'pēt ˌkē }

repeat operator [COMPUT SCI] A pseudo instruction using two arguments, a count p and an increment n: the word immediately following the instruction is repeated p times, with the values 0, n, $2n$, . . . , $(p-1)n$ added to the successive words. { ri'pēt ˌäp·ə,rād·ər }

repeller [ELECTR] An electrode whose primary function is to reverse the direction of an electron stream in an electron tube. Also known as reflector. { ri'pel·ər }

repetition equivalent [COMMUN] In a complete telephone connection, a measure of the grade of transmission experienced by the subscribers using the connection; it includes the combined effects of volume, distortion, noise, and all other subscriber reactions and usages. { ˌrep·ə'tish·ən i'kwiv·ə·lənt }

repetition frequency *See* repetition rate. { ˌrep·ə'tish·ən ˌfrē·kwən·sē }

repetition instruction [COMPUT SCI] An instruction that causes one or more other instructions to be repeated a specified number of times, usually with systematic address modification occurring between repetitions. { ˌrep·ə'tish·ən inˌstrək·shən }

repetition rate [COMMUN] The rate at which recurrent signals are produced or transmitted. Also known as recurrence rate; repetition frequency. { ˌrep·ə'tish·ən ˌrāt }

repetitive addressing [COMPUT SCI] A system used on some computers in which, under certain conditions, an instruction is written without giving the address of the operand, and the operand address is automatically that of the location addressed by the last previous instruction. { rə'ped·əd·iv ə'dres·iŋ }

repetitive analog computer [COMPUT SCI] An analog computer which repeatedly carries out the solution of a problem at a rapid rate (10 to 60 times a second) while an operator may vary parameters in the problem. { rə'ped·əd·iv 'an·əˌlȯg kəm'pyüd·ər }

repetitive statement [COMPUT SCI] A statement in a computer program that is repeatedly executed for a specified number of times or for as long as a specified condition holds true. { ri'ped·əd·iv 'stāt·mənt }

repetitive unit [COMPUT SCI] A type of circuit which appears more than once in a computer. { rə'ped·əd·iv yü·nət }

reply [COMMUN] A radio-frequency signal or combination of signals transmitted by a transponder in response to an interrogation. Also known as response. { ri'plī }

report [COMPUT SCI] An output document prepared by a data-processing system. { ri'pȯrt }

report generator [COMPUT SCI] A routine which produces a complete data-processing report, given only a description of the desired content and format, plus certain information concerning the input file. Also known as report writer. { ri'pȯrt ˌjen·əˌrād·ər }

reporting time interval [COMMUN] The time for transmission of data or a report from the originating terminal to the end receiver. { ri'pȯrd·iŋ 'tīm ˌin·tər·vəl }

report program [COMPUT SCI] A program that prints out an analysis of a file of records, usually arranged by keys, each analysis or total being produced when a key change takes place. { ri'pȯrt ˌprōˌgram }

report program generator [COMPUT SCI] A nonprocedural programming language that provides a convenient method of producing a wide variety of reports. Abbreviated RPG. { ri'pȯrt ¦prōˌgram ˌjen·əˌrād·ər }

report writer *See* report generator. { ri'pȯrt ˌrīd·ər }

representation condition [COMPUT SCI] The condition that, if one software entity is less than another entity in terms of a selected attribute, then any software metric for that attribute must associate a smaller number to the first entity than it does to the second entity. { ˌrep·rə·zen'tā·shən kənˌdish·ən }

representative calculating time [COMPUT SCI] The time required to perform a specified operation or series of operations. { ¦rep·ri¦zen·təd·iv 'kal·kyəˌlād·iŋ ˌtīm }

reproduce head *See* playback head. { ¦rē·prə¦düs ˌhed }

reproducing system *See* sound-reproducing system. { ¦rē·prə¦düs·iŋ ˌsis·təm }

reproduction speed [COMMUN] Area of copy recorded per unit time in facsimile transmission. { ¦rē·prə¦dək·shən ˌspēd }

repulsion-induction motor [ELEC] A repulsion motor that has a squirrel-cage winding in the rotor in addition to the repulsion-motor winding. { ri'pəl·shən in'dək·shən ˌmōd·ər }

repulsion motor [ELEC] An alternating-current motor having stator windings connected directly to the source of ac power and rotor windings connected to a commutator; brushes on the commutator are short-circuited and are positioned to produce the rotating magnetic field required for starting and running. { ri'pəl·shən ˌmōd·ər }

repulsion-start induction motor [ELEC] An alternating-current motor that starts as a repulsion motor; at a predetermined speed the commutator bars are short-circuited to give the equivalent of a squirrel-cage winding for operation as an induction motor with constant-speed characteristics. { ri'pəl·shən ¦stärt in'dək·shən ˌmōd·ər }

request/grant logic [COMPUT SCI] Logic circuitry which, in effect, selects the interrupt line with highest priority. { ri'kwest 'grant ˌläj·ik }

request repeat system [COMMUN] System using an error-detecting code, and so arranged that a signal detected as being in error automatically initiates a request for retransmission. { ri'kwest ri¦pēt ˌsis·təm }

reradiation [COMMUN] Undesirable radiation of signals generated locally in a radio receiver, causing interference or revealing the location of the receiver. { rēˌrā·dē'ā·shən }

rerun [COMPUT SCI] To run a program or a portion of it again on a computer. Also known as rollback. { 'rēˌrən }

rerun point [COMPUT SCI] A location in a program from which the program may be started anew after an interruption of the computer run. { 'rē ˌrən ˌpȯint }

rerun routine [COMPUT SCI] A routine designed to be used in the wake of a computer malfunction or a coding or operating mistake to reconstitute a routine from the last previous rerun point. { 'rē ˌrən ˌrüˌtēn }

rescap [ELEC] A capacitor and resistor assembly manufactured as a packaged encapsulated circuit. Also known as capacitor-resistor unit; capristor; packaged circuit; resistor-capacitor unit. { 'resˌkap }

rescue dump [COMPUT SCI] The copying of the entire contents of a computer memory into auxiliary storage devices, carried out periodically during the course of a computer program so that in case of a machine failure the program can be reconstituted at the last point at which this operation was executed. { 'resˌkyü ˌdəmp }

reserve [COMPUT SCI] To assign portions of a computer memory and of input/output and storage devices to a specific computer program in a multiprogramming system. { ri'zərv }

reserve battery [ELEC] A battery which is inert until an operation is performed which brings all the cell components into the proper state and location to become active. { ri'zərv 'bad·ə·rē }

reserved word [COMPUT SCI] A word which cannot be used in a programming language to represent an item of data because it has some particular significance to the compiler, or which can be used only in a particular context. { ri'zərvd 'wərd }

reset *See* clear. { 'rēˌset }

reset action [CONT SYS] Floating action in which the final control element is moved at a speed proportional to the extent of proportional-position action. { 'rēˌset ˌak·shən }

reset condition [ELECTR] Condition of a flip-flop circuit in which the internal state of the flip-flop is reset to zero. { 'rēˌset kənˌdish·ən }

reset cycle [COMPUT SCI] The return of a cycle index counter to its initial value. { 'rēˌset ˌsī·kəl }

reset input [COMPUT SCI] The act of resetting the original conditions of a problem after a program is run on an analog computer. { 'rēˌset 'inˌpůt }

reset mode [COMPUT SCI] The phase of operation of an analog computer during which the required initial conditions are entered into the system and the computing units are inoperative. Also known as initial condition mode. { 'rēˌset ˌmōd }

reset pulse [ELECTR] **1.** A drive pulse that tends to reset a magnetic cell in the storage section of a digital computer. **2.** A pulse used to reset an electronic counter to zero or to some predetermined position. { 'rēˌset ˌpəls }

resettability [ELECTR] The ability of the tuning element of an oscillator to retune the oscillator to the same operating frequency for the same set of input conditions. { riˌsed·ə'bil·əd·ē }

resident executive [COMPUT SCI] The portion of the executive routine that is permanently stored in a computer's main memory. Also known as resident monitor. { 'rez·ə·dənt ig'zek·yəd·iv }

resident module *See* resident routine. { 'rez·ə·dənt 'mä·jəl }

resident monitor *See* resident executive. { 'rez·ə·dənt 'män·əd·ər }

resident routine [COMPUT SCI] Any computer routine which is stored permanently in the memory, such as the resident executive. Also known as resident module. { 'rez·ə·dənt rü'tēn }

residual charge [ELEC] The charge remaining on the plates of a capacitor after initial discharge. { rə'zij·ə·wəl 'chärj }

residual current [ELECTR] Current flowing through a thermionic diode when there is no anode voltage, due to the velocity of the electrons emitted by the heated cathode. { rə'zij·ə·wəl ¦kə·rənt }

residual error rate *See* undetected error rate. { rə'zij·ə·wəl 'er·ər ˌrāt }

residual modulation *See* carrier noise. { rə'zij·ə·wəl ˌmäj·ə'lā·shən }

residual voltage [ELEC] Vector sum of the voltages to ground of the several phase wires of an electric supply circuit. { rə'zij·ə·wəl 'vōl·tij }

residue check *See* modulo N check. { 'rez·əˌdü ˌchek }

residue system [COMPUT SCI] A number system in which each digit position corresponds to a different radix, all pairs of radices are relatively prime, and the value of a digit with radix *r* for

an integer A is equal to the remainder when A is divided by r. { 'rez·ə,dü ,sis·təm }

resilience [COMPUT SCI] The ability of computer software to be used for long periods of time. { rə'zil·yəns }

resistance [ELEC] **1.** The opposition that a device or material offers to the flow of direct current, equal to the voltage drop across the element divided by the current through the element. Also known as electrical resistance. **2.** In an alternating-current circuit, the real part of the complex impedance. { ri'zis·təns }

resistance box [ELEC] A box containing a number of precision resistors connected to panel terminals or contacts so that a desired resistance value can be obtained by withdrawing plugs (as in a post-office bridge) or by setting multicontact switches. { ri'zis·təns ,bäks }

resistance bridge *See* Wheatstone bridge. { ri'zis·təns ,brij }

resistance-capacitance circuit [ELEC] A circuit which has a resistance and a capacitance in series, and in which inductance is negligible. Abbreviated R-C circuit. { ri'zis·təns kə'pas·əd·əns ,sər·kət }

resistance-capacitance constant [ELEC] Time constant of a resistive-capacitive circuit, equal in seconds to the resistance value in ohms multiplied by the capacitance value in farads. Abbreviated R-C constant. { ri'zis·təns kə'pas·əd·əns ,kän·stənt }

resistance-capacitance coupled amplifier [ELECTR] An amplifier in which a capacitor provides a path for signal currents from one stage to the next, with resistors connected from each side of the capacitor to the power supply or to ground; it can amplify alternating-current signals but cannot handle small changes in direct currents. Also known as R-C amplifier; R-C coupled amplifier; resistance-coupled amplifier. { ri'zis·təns kə'pas·əd·əns |kəp·əld 'am·plə,fī·ər }

resistance-capacitance network [ELEC] Circuit containing resistances and capacitances arranged in a particular manner to perform a specific function. Abbreviated R-C network. { ri'zis·təns kə'pas·əd·əns 'net,wərk }

resistance-capacitance oscillator [ELECTR] Oscillator in which the frequency is determined by resistance and capacitance elements. Abbreviated R-C oscillator. { ri'zis·təns kə'pas·əd·əns 'äs·ə,lād·ər }

resistance commutation [ELEC] Commutation of an electric rotating machine in which brushes with relatively high resistance span at least one commutator segment, in order to achieve a linear variation of current with time, and thereby minimize self-inductive voltage in the coils. { ri'zis·təns ,kam·yə'tā·shən }

resistance-coupled amplifier *See* resistance-capacitance coupled amplifier. { ri'zis·təns |kəp·əld 'am·plə,fī·ər }

resistance coupling [ELECTR] Coupling in which resistors are used as the input and output impedances of the circuits being coupled; a coupling capacitor is generally used between the resistors to transfer the signal from one stage to the next. Also known as R-C coupling; resistance-capacitance coupling; resistive coupling. { ri'zis·təns ,kəp·liŋ }

resistance drop [ELEC] The voltage drop occurring between two points on a conductor due to the flow of current through the resistance of the conductor; multiplying the resistance in ohms by the current in amperes gives the voltage drop in volts. Also known as IR drop. { ri'zis·təns ,dräp }

resistance element [ELEC] An element of resistive material in the form of a grid, ribbon, or wire, used singly or built into groups to form a resistor for heating purposes, as in an electric soldering iron. { ri'zis·təns ,el·ə·mənt }

resistance grounding [ELEC] Electrical grounding in which lines are connected to ground by a resistive (totally dissipative) impedance. { ri'zis·təns ,graùnd·iŋ }

resistance heating [ELEC] The generation of heat by electric conductors carrying current; degree of heating is proportional to the electrical resistance of the conductor; used in electrical home appliances, home or space heating, and heating ovens and furnaces. { ri'zis·təns ,hēd·iŋ }

resistance lamp [ELEC] Electric lamp used to prevent the current in a circuit from exceeding a desired limit. { ri'zis·təns ,lamp }

resistance loss [ELEC] Power loss due to current flowing through resistance; its value in watts is equal to the resistance in ohms multiplied by the square of the current in amperes. { ri'zis·təns ,lós }

resistance material [ELEC] Material having sufficiently high resistance per unit length or volume to permit its use in the construction of resistors. { ri'zis·təns mə'tir·ē·əl }

resistance measurement [ELEC] The quantitative determination of that property of an electrically conductive material, component, or circuit called electrical resistance. { ri'zis·təns ,mezh·ər·mənt }

resistance meter [ENG] Any instrument which measures electrical resistance. Also known as electrical resistance meter. { ri'zis·təns ,mēd·ər }

resistance noise *See* thermal noise. { ri'zis·təns ,nòiz }

resistance-start motor [ELEC] A split-phase motor having a resistance connected in series with

the auxiliary winding; the auxiliary circuit is opened when the motor attains a predetermined speed. { ri'zis·təns ¦stärt ˌmōd·ər }

resistance strain gage [ELECTR] A strain gage consisting of a strip of material that is cemented to the part under test and that changes in resistance with elongation or compression. { ri'zis·təns 'strān ˌgāj }

resistive coupling *See* resistance coupling. { ri 'zis·tiv 'kəp·liŋ }

resistive load [ELEC] A load whose total reactance is zero, so that the alternating current is in phase with the terminal voltage. Also known as nonreactive load. { ri'zis·tiv 'lōd }

resistive superconducting fault-current limiter [ELEC] A fault-current limiter in which a superconductor is directly connected in series to the line to be protected and is immersed in a coolant which is chilled by a refrigerant, and the connection from the line at room temperature to the superconductor is provided by special current leads, which are designed to minimize the heat transfer to the coolant. { ri¦zis·tiv ¦sü·pər·kən ˌdək·tiŋ 'fōlt, kər·ənt ˌlim·əd·ər }

resistive unbalance [ELEC] Unequal resistance in the two wires of a transmission line. { ri'zis·tiv ən'bal·əns }

resistivity *See* electrical resistivity. { ˌrē,zis'tiv·əd·ē }

resistor [ELEC] A device designed to have a definite amount of resistance; used in circuits to limit current flow or to provide a voltage drop. Also known as electrical resistor. { ri'zis·tər }

resistor-capacitor-transistor logic [ELECTR] A resistor-transistor logic with the addition of capacitors that are used to enhance switching speed. { ri'zis·tər kə'pas·əd·ər tran'zis·tər ˌläj·ik }

resistor-capacitor unit *See* rescap. { ri'zis·tər kə'pas·əd·ər ˌyü·nət }

resistor color code [ELEC] Code adopted by the Electronic Industries Association to mark the values of resistance on resistors in a readily recognizable manner; the first color represents the first significant figure of the resistor value, the second color the second significant figure, and the third color represents the number of zeros following the first two figures; a fourth color is sometimes added to indicate the tolerance of the resistor. { ri'zis·tər 'kəl·ər ˌkōd }

resistor core [ELEC] Insulating support on which a resistor element is wound or otherwise placed. { ri'zis·tər ˌkór }

resistor element [ELEC] That portion of a resistor which possesses the property of electric resistance. { ri'zis·tər ˌel·ə·mənt }

resistor network [ELEC] An electrical network consisting entirely of resistances. { ri'zis·tər 'net,wərk }

resistor termination [ELECTR] A thick-film conductor pad overlapping and contacting a thick-film resistor area. { ri'zis·tər ˌtər·mə'nā·shən }

resistor-transistor logic [ELECTR] One of the simplest logic circuits, having several resistors, a transistor, and a diode. Abbreviated RTL. { ri'zis·tər tran'zis·tər ˌläj·ik }

resnatron [ELECTR] A microwave-beam tetrode containing cavity resonators, used chiefly for generating large amounts of continuous power at high frequencies. { 'rez·nəˌträn }

resolution [CONT SYS] The smallest increment in distance that can be distinguished and acted upon by an automatic control system. [ELECTR] In television, the maximum number of lines that can be discerned on the screen at a distance equal to screen height. [ELECTROMAG] In radar, the minimum separation between two targets or features thereof, in angle, range, cross range, or range rate, at which they can be distinguished on a radar display or in the data processing. Also known as resolving power. { ˌrez·ə'lü·shən }

resolution chart *See* test pattern. { ˌrez·ə'lü·shən ˌchärt }

resolution error [COMPUT SCI] An error of an analog computing unit that results from its inability to respond to changes of less than a given magnitude. { ˌrez·ə'lü·shən ˌer·ər }

resolution factor [COMPUT SCI] In information retrieval, the ratio obtained in dividing the total number of documents retrieved (whether relevant or not to the user's needs) by the total number of documents available in the file. { ˌrez·ə'lü·shən ˌfak·tər }

resolution wedge [COMMUN] On a video test pattern, a group of gradually converging lines used to measure resolution. { ˌrez·ə'lü·shən ˌwej }

resolve motion-rate control [CONT SYS] A form of robotic control in which the controlled variables are the velocity vectors of the end points of a manipulator, and the angular velocities of the joints are determined to obtain the desired results. { ri'zolv 'mō·shən ¦rāt kənˌtrōl }

resolver [ELEC] A synchro or other device whose rotor is mechanically driven to translate rotor angle into electrical information corresponding to the sine and cosine of rotor angle; used for interchanging rectangular and polar coordinates. Also known as sine-cosine generator; synchro resolver. [ELECTR] **1.** A synchro or other device whose input is the angular position of an object, such as the rotor of an electric machine, and whose output is electric signals, usually proportional to the sine and cosine of an angle, and often in digital form; used to interchange rectangular and polar coordinates, and in servomechanisms to report the orientation of controlled objects. Also known as angular resolver. **2.** A device that accepts a single vector-valued analog input and produces for output either analog or digital signals proportional to two or three orthogonal components of the vector. Also known as vector resolver. { ri'zäl·vər }

resolving cell [ELECTROMAG] In radar, volume in space whose diameter is the product of slant range and beam width, and whose length is the pulse length. { ri'zälv·iŋ ˌsel }

resolving power [ELECTROMAG] *See* resolution. { ri'zälv·iŋ ˌpaù·ər }

resolving time [COMPUT SCI] In computers, the shortest permissible period between trigger

pulses for reliable operation of a binary cell. [ENG] Minimum time interval, between events, that can be detected, resolving time may refer to an electronic circuit, to a mechanical recording device, or to a counter tube. { ri'zälv·iŋ ˌtīm }

resonance [ELEC] A phenomenon exhibited by an alternating-current circuit in which there are relatively large currents near certain frequencies, and a relatively unimpeded oscillation of energy from a potential to a kinetic form; a special case of the physics definition. { 'rez·ən·əns }

resonance bridge [ELEC] A four-arm alternating-current bridge used to measure inductance, capacitance, or frequency; the inductor and the capacitor, which may be either in series or in parallel, are tuned to resonance at the frequency of the source before the bridge is balanced. { 'rez·ən·əns ˌbrij }

resonance curve [ELEC] Graphical representation illustrating the manner in which a tuned circuit responds to the various frequencies in and near the resonant frequency. { 'rez·ən·əns ˌkərv }

resonance method [ELEC] A method of determining the impedance of a circuit element, in which resonance frequency of a resonant circuit containing the element is measured. { 'rez·ən·əns ˌmeth·əd }

resonance transformer [ELEC] A high-voltage transformer in which the secondary circuit is tuned to the frequency of the power supply. [ELECTR] An electrostatic particle accelerator, used principally for acceleration of electrons, in which the high-voltage terminal oscillates between voltages which are equal in magnitude and opposite in sign. { 'rez·ən·əns tranzˌfôr·mər }

resonant antenna [ELECTROMAG] An antenna for which there is a sharp peak in the power radiated or intercepted by the antenna at a certain frequency, at which electric currents in the antenna form a standing-wave pattern. { 'res·ən·ənt an 'ten·ə }

resonant capacitor [ELEC] A tubular capacitor that is wound to have inductance in series with its capacitance. { 'res·ən·ənt kə'pas·əd·ər }

resonant cavity *See* cavity resonator. { 'res·ən·ənt 'kav·əd·ē }

resonant chamber *See* cavity resonator. { 'res·ən·ənt 'chām·bər }

resonant circuit [ELEC] A circuit that contains inductance, capacitance, and resistance of such values as to give resonance at an operating frequency. { 'res·ən·ənt 'sər·kət }

resonant coupling [ELEC] Coupling between two circuits that reaches a sharp peak at a certain frequency. { 'res·ən·ənt 'kəp·liŋ }

resonant diaphragm [ELECTROMAG] A diaphragm, in waveguide technique, so proportioned as to introduce no reactive impedance at the design frequency. { 'res·ən·ənt 'dī·əˌfram }

resonant element *See* cavity resonator. { 'res·ən·ənt 'el·ə·mənt }

resonant gate transistor [ELECTR] Surface field-effect transistor incorporating a cantilevered beam which resonates at a specific frequency to provide high-Q-frequency discrimination. { 'res·ən·ənt 'gāt tranˌzis·tər }

resonant helix [ELECTROMAG] An inner helical conductor in certain types of transmission lines and resonant cavities, which carries currents with the same frequency as the rest of the line or cavity. { 'res·ən·ənt 'hē·liks }

resonant iris [ELECTROMAG] A resonant window in a circular waveguide; it resembles an optical iris. { 'res·ən·ənt 'ī·rəs }

resonant line [ELECTROMAG] A transmission line having values of distributed inductance and distributed capacitance so as to make the line resonant at the frequency it is handling. { 'res·ən·ənt 'līn }

resonant-line oscillator [ELECTR] Oscillator in which one or more sections of transmission lines are employed as resonant elements. { 'res·ən·ənt ˌlīn 'äs·əˌlād·ər }

resonant-line tuner [ELECTR] A device in which resonant lines are used to tune the antenna, radio-frequency amplifier, or radio-frequency oscillator circuits; tuning is achieved by moving shorting contacts that change the electrical lengths of the lines. { 'res·ən·ənt ˌlīn 'tün·ər }

resonant-mode power supply [ELECTR] An electronic power supply in which the current and voltage waveforms are shaped to sinusoids by a small inductor and capacitor inserted in the current path. { ˌrez·ən·ənt ˌmōd 'pȧù·ər səˌplī }

resonant-reed relay [ELEC] A reed relay in which the reed switch closes only when the required frequency is applied to the operating coil, to make one of the reeds vibrate until its amplitude is sufficient to make contact with the other reed; used in selective paging systems. { 'res·ən·ənt ˌrēd 'rēˌlā }

resonant resistance [ELEC] Resistance value to which a resonant circuit is equivalent. { 'res·ən·ənt ri'zis·təns }

resonant voltage step-up [ELEC] Ability of an inductor and a capacitor in a series resonant circuit to deliver a voltage several times greater than the input voltage of the circuit. { 'res·ən·ənt ˌvōl·tij 'stepˌəp }

resonant wavelength [ELECTROMAG] The wavelength in free space of electromagnetic radiation having a frequency equal to a natural resonance frequency of a cavity resonator. { 'res·ən·ənt 'wāvˌleŋkth }

resonant window [ELECTROMAG] A parallel combination of inductive and capacitive diaphragms, used in a waveguide structure to provide transmission at the resonant frequency and reflection at other frequencies. { 'res·ən·ənt 'winˌdō }

resonate [ELEC] To bring to resonance, as by tuning. { 'rez·ənˌāt }

resonating cavity [ELECTROMAG] Short piece of waveguide of adjustable length, terminated at either or both ends by a metal piston, an iris diaphragm, or some other wave-reflecting device; it is used as a filter, as a means of coupling between guides of different diameters, and as impedance networks corresponding to those used in radio circuits. { 'rez·ənˌād·iŋ 'kav·əd·ē }

resonator grid [ELECTR] Grid that is attached to a cavity resonator in velocity-modulated tubes to provide coupling between the resonator and the electron beam. { 'rez·ən,ād·ər ,grid }

responder [ELECTR] The transmitter section, including the appropriate encoder, of a radar transponder. { ri'spän·dər }

responder beacon [ELECTR] The radar beacon that serves to emit the signals of the responder in a transponder. { ri'spän·dər ,bē·kən }

response [COMMUN] *See* reply. [CONT SYS] A quantitative expression of the output of a device or system as a function of the input. Also known as system response. { ri'späns }

response characteristic [CONT SYS] The response as a function of an independent variable, such as direction or frequency, often presented in graphical form. { ri'späns ,kar·ik·tə,ris·tik }

response time [COMPUT SCI] The delay experienced in time sharing between request and answer, a delay which increases when the number of users on the system increases. [CONT SYS] The time required for the output of a control system or element to reach a specified fraction of its new value after application of a step input or disturbance. [ELEC] The time it takes for the pointer of an electrical or electronic instrument to come to rest at a new value, after the quantity it measures has been abruptly changed. { ri'späns ,tīm }

responsor [ELECTR] The receiving section of an interrogator-responsor. { ri'spän·sər }

restart [COMPUT SCI] To go back to a specific planned point in a routine, usually in the case of machine malfunction, for the purpose of rerunning the portion of the routine in which the error occurred; the length of time between restart points in a given routine should be a function of the mean free error time of the machine itself. { 'rē,stärt }

resting frequency *See* carrier frequency. { 'rest·iŋ ,frē·kwən·sē }

restore [COMPUT SCI] In computers, to regenerate, to return a cycle index or variable address to its initial value, or to store again. [ELECTR] Periodic charge regeneration of volatile computer storage systems. { ri'stȯr }

restorer *See* direct-current restorer. { ri'stȯr·ər }

restorer pulses [ELECTR] In computers, pairs of complement pulses, applied to restore the coupling-capacitor charge in an alternating-current flip-flop. { ri'stȯr·ər ,pəls·əz }

restoring logic [ELECTR] Circuitry designed so that even with an imperfect input pulse a standard output occurs at the exit of each successive logic gate. { ri'stȯr·iŋ ,läj·ik }

rest potential [ELEC] Residual potential difference remaining between an electrode and an electrolyte after the electrode has become polarized. { 'rest pə,ten·chəl }

restricted function [COMPUT SCI] A function of the operating system that cannot be used by application programs. { ri'strik·təd ,fəŋk·shən }

retarding-field oscillator [ELECTR] An oscillator employing an electron tube in which the electrons oscillate back and forth through a grid that is maintained positive with respect to both the cathode and anode; the field in the region of the grid exerts a retarding effect through the grid in either direction. Also known as positive-grid oscillator. { ri'tärd·iŋ ,fēld 'äs·ə ,lād·ər }

retard transmitter [ELECTR] Transmitter in which a delay period is introduced between the time of actuation and the time of transmission. { ,ri'tärd tranz,mid·ər }

retention period [COMPUT SCI] The length of time that data must be kept on a reel of magnetic tape before it can be destroyed. { ri'ten·chən ,pir·ē·əd }

retention time [ELECTR] The maximum time between writing into a storage tube and obtaining an acceptable output by reading. Also known as storage time. { ri'ten·chən ,tīm }

retina [COMPUT SCI] In optical character recognition, a scanning device. { 'ret·ən·ə }

retina character reader [COMPUT SCI] A character reader that operates in the manner of the human retina in recognizing identical letters in different type fonts. { 'ret·ən·ə 'kar·ik·tər ,rēd·ər }

retrace *See* flyback. { 'rē,trās }

retrace blanking [ELECTR] Blanking a video display during vertical retrace intervals to prevent retrace lines from showing on the screen. { 'rē ,trās ,blaŋk·iŋ }

retrace line [ELECTR] The line traced by the electron beam in a cathode-ray tube in going from the end of one line or field to the start of the next line or field. Also known as return line. { 'rē,trās ,līn }

retransmission unit [ELECTR] Control unit used at an intermediate station for feeding one radio receiver-transmitter unit for two-way communication. { ¦rē·tranz'mish·ən ,yü·nət }

retrieve [COMPUT SCI] To find and select specific information. { ri'trēv }

retroaction *See* positive feedback. { ¦re·trō'ak·shən }

retrofit [ENG] A modification of equipment to incorporate changes made in later production of similar equipment; it may be done in the factory or field. Derived from retroactive refit. { 're·trō ,fit }

retry [COMPUT SCI] When a central processing unit error is detected during execution of an instruction, the computer will execute this instruction unless a register was altered by the operation. { 'rē,trī }

return [COMPUT SCI] **1.** To return control from a subroutine to the calling program. **2.** To go back to a planned point in a computer program and rerun a portion of the program, usually when an error is detected; rerun points are usually not more than 5 minutes apart. [ELECTR] *See* echo. { ri'tərn }

return address [COMPUT SCI] The address in storage to which a computer program is directed upon completion of a subroutine. { ri'tərn 'ad ,res }

return busy tone [COMMUN] A signal returned to the register-sender that, in turn, returns a busy

indication to the calling station. { ri'tərn 'biz·ē ˌtōn }

return code [COMPUT SCI] An indicator that is issued by a computer upon completion of a subroutine or function, or of the entire program, that indicates the result of the processing and, in particular, whether the processing was successful or ended abnormally because of an error. { ri'tərn ˌkōd }

return interval [ELECTR] Interval corresponding to the direction of sweep not used for delineation. { ri'tərn ˌin·tər·vəl }

return jump [COMPUT SCI] A jump instruction in a subroutine which passes control to the first statement in the program which follows the instruction called the subroutine. { ri'tərn ˌjəmp }

return key [COMPUT SCI] A key on a typewriter or a computer keyboard that, when depressed, causes a print mechanism or cursor to move to the beginning of the next line. { ri'tərn ˌkē }

return line *See* retrace line. { ri'tərn ˌlīn }

return loss [COMMUN] **1.** The difference between the power incident upon a discontinuity in a transmission system and the power reflected from the discontinuity. **2.** The ratio in decibels of the power incident upon a discontinuity to the power reflected from the discontinuity. { ri'tərn ˌlôs }

return to zero mode [COMPUT SCI] Computer readout mode in which the signal returns to zero between each bit indication. { ri'tərn tə 'zir·ō ˌmōd }

return trace *See* flyback. { ri'tərn ˌtrās }

return wire [ELEC] The ground wire, common wire, or negative wire of a direct-current power circuit. { ri'tərn ˌwīr }

reusable [COMPUT SCI] Of a program, capable of being used by several tasks without having to be reloaded; it is a generic term, including reenterable and serially reusable. { rē'yü·zə·bəl }

reverse bias [ELECTR] A bias voltage applied to a diode or a semiconductor junction with polarity such that little or no current flows; the opposite of forward bias. { ri'vərs 'bī·əs }

reverse-blocking tetrode thyristor *See* silicon controlled switch. { ri'vərs ¦bläk·iŋ 'teˌtrōd thī'ris·tər }

reverse-blocking triode thyristor *See* silicon controlled rectifier. { ri'vərs ¦bläk·iŋ 'trīˌōd thī'ris·tər }

reverse code dictionary [COMPUT SCI] Alphabetic or alphanumeric arrangement of codes associated with their corresponding English words or terms. { ri'vərs ¦kōd 'dik·shəˌner·ē }

reverse current [ELECTR] Small value of direct current that flows when a semiconductor diode has reverse bias. { ri'vərs 'kə·rənt }

reverse-current protection [ELEC] A device which senses when there is a reversal in the normal direction of current in an electric power system, indicating an abnormal condition of the system, and which initiates appropriate action to prevent damage to the system. { ri'vərs ¦kə·rənt prəˌtek·shən }

reverse-current relay [ELEC] Relay that operates whenever current flows in the reverse direction. { ri'vərs ¦kə·rənt 'rēˌlā }

reverse direction *See* inverse direction. { ri'vərs di'rek·shən }

reverse-direction flow [COMPUT SCI] A logical path that runs upward or to the left on a flowchart. { ri'vərs di¦rek·shən ˌflō }

reverse feedback *See* negative feedback. { ri'vərs 'fēdˌbak }

reverse key [ELEC] Key used in a circuit to reverse the polarity of that circuit. { ri'vərs 'kē }

reverse Polish notation [COMPUT SCI] The version of Polish notation, used in some calculators, in which operators follow the operators with which they are associated. Abbreviated RPN. Also known as postfix notation; suffix notation. { ri'vərs 'pō·lish nō'tā·shən }

reverse power [ELEC] Transmission of electric energy through a circuit in a direction opposite to the usual direction. { ri'vərs 'paù·ər }

reverse video [COMPUT SCI] An electronic display mode in which the normal properties of the display are reversed; for example, normally white characters on a black background will appear as black characters on a white background. Also known as inverse video. { ri'vərs 'vid·ē·ō }

reverse voltage [ELEC] In the case of two opposing voltages, voltage of that polarity which produces the smaller current. { ri'vərs 'vōl·tij }

reversible booster [ELEC] Booster capable of adding to and subtracting from the voltage of a circuit. { ri'vər·sə·bəl 'büs·tər }

reversible capacitance [ELECTR] Limit, as the amplitude of an applied sinusoidal capacitor voltage approaches zero, of the ratio of the amplitude of the resulting in-phase fundamental-frequency component of transferred charge to the amplitude of the applied voltage, for a given constant bias voltage superimposed on the sinusoidal voltage. { ri'vər·sə·bəl kə'pas·əd·əns }

reversible counter [COMPUT SCI] A counter which stores a number whose value can be decreased or increased in response to the appropriate control signal. { ri'vər·sə·bəl 'kaùnt·ər }

reversible motor [ELEC] A motor in which the direction of rotation can be reversed by means of a switch that changes motor connections when the motor is stopped. { ri'vər·sə·bəl 'mōd·ər }

reversible transducer [ELECTR] Transducer whose loss is independent of transmission direction. { ri'vər·sə·bəl tranz'düs·ər }

reversing motor [ELEC] A motor for which the direction of rotation can be reversed by changing electric connections or by other means while the motor is running at full speed; the motor will then come to a stop, reverse, and attain full speed in the opposite direction. { ri'vərs·iŋ ˌmōd·ər }

reversing switch [ELEC] A switch intended to reverse the connections of one part of a circuit. { ri'vərs·iŋ ˌswich }

revolute-coordinate robot *See* jointed-arm robot. { 'rev·ə,lüt kō'ȯrd·ən·ət 'rō,bät }

rewind [ELECTR] **1.** The components on a magnetic tape recorder that serve to return the tape to the supply reel at high speed. **2.** To return a magnetic tape to its starting position. { 'rē,wīnd }

rewrite [COMPUT SCI] The process of restoring a storage device to its state prior to reading; used when the information-storing state may be destroyed by reading. { 'rē,rīt }

RFI *See* radio-frequency interference.

RGB monitor [COMPUT SCI] A video display screen that requires separate red, green, and blue signals from a computer or other source. { ¦är ¦jē¦bē 'män·əd·ər }

RG line *See* radio-frequency cable. { ¦är'jē ,līn }

rheostat [ELEC] A resistor constructed so that its resistance value may be changed without interrupting the circuit to which it is connected. Also known as variable resistor. { 'rē·ə,stat }

rheostatic control [ELEC] A method of controlling the speed of electric motors that involves varying the resistance or reactance in the armature or field circuit; used in motors that drive elevators. { ¦rē·ə¦stad·ik kən'trōl }

rheostriction *See* pinch effect. { 'rē·ə,strik·shən }

rheotaxial growth [ENG] A chemical vapor deposition technique for producing silicon diodes and transistors on a fluid layer having high surface mobility. { ¦rē·ə¦tak·sē·əl 'grōth }

RHI display *See* range-height indicator display. { ¦är¦āch'ī di,splā }

rhombic antenna [ELECTROMAG] A horizontal antenna having four conductors forming a diamond or rhombus; usually fed at one apex and terminated with a resistance or impedance at the opposite apex. Also known as diamond antenna. { 'räm·bik an'ten·ə }

rhumbatron *See* cavity resonator. { 'rəm·bə,trän }

ribbon cable [ELEC] A cable made of normal, round, insulated wires arranged side by side and fastened together by a cohesion process to form a flexible ribbon. { 'rib·ən ,kā·bəl }

ribbon conductor [ELEC] A thin, flat piece of metal suitable for carrying electric current. { 'rib·ən kən,dək·tər }

ribbon microphone [ENG ACOUS] A microphone whose electric output results from the motion of a thin metal ribbon mounted between the poles of a permanent magnet and driven directly by sound waves; it is velocity-actuated if open to sound waves on both sides, and pressure-actuated if open to sound waves on only one side. { 'rib·ən 'mī·krə,fōn }

Rice neutralization [ELECTR] Development of voltage in the grid circuit of a vacuum tube in order to nullify or cancel feedback through the tube. { 'rīs ,nü·trə·lə'zā·shən }

Rice neutralizing circuit [ELECTR] Radio-frequency amplifier circuit that neutralizes the grid-to-plate capacitance of an amplifier tube. { 'rīs 'nü·trə,līz·iŋ ,sər·kət }

Rice video [ELECTR] Referring to the video and its particular probability density produced by an amplitude detector (demodulator) when the Gaussian radio noise and a signal of a known and constant amplitude are together incident to it. { 'rīs ¦vid·ē·ō }

Richardson-Dushman equation [ELECTR] An equation for the current density of electrons that leave a heated conductor in thermionic emission. Also known as Dushman equation. { 'rich·ərd·sən 'dəsh·mən i,kwā·zhən }

Richardson effect *See* thermionic emission. { 'rich·ərd·sən i,fekt }

Richardson plot [ELECTR] A graph of $\log (I/T^2)$ against $1/T$, where I is the current density of electrons leaving a heated conductor in thermionic emission, and T is the temperature of the conductor; according to the Richardson-Dushman equation, this is a straight line. { 'rich·ərd·sən ,plät }

ridge waveguide [ELECTROMAG] A circular or rectangular waveguide having one or more longitudinal internal ridges that serve primarily to increase transmission bandwidth by lowering the cutoff frequency. { 'rij 'wāv,gīd }

Rieke diagram [ELECTR] A chart showing contours of constant power output and constant frequency for a microwave oscillator, drawn on a Smith chart or other polar diagram whose coordinates represent the components of the complex reflection coefficient at the oscillator load. { 'rē·kə ,dī·ə,gram }

right-hand taper [ELEC] Taper in which there is greater resistance in the clockwise half of the operating range of a rheostat or potentiometer (looking from the shaft end) than in the counterclockwise half. { 'rīt ¦hand 'tā·pər }

right-justify [COMPUT SCI] To shift the contents of a register so that the right or least significant digit is at some specified position. { 'rīt 'jəs·tə,fī }

right value [COMPUT SCI] The actual data content of a symbolic variable in a computer program; it is one of two components of the symbolic variable, the other being the memory address. Abbreviated rvalue. { 'rīt 'val·yü }

rigid copper coaxial line [ELECTROMAG] A coaxial cable in which the central conductor and outer conductor are formed by joining rigid pieces of copper. { 'rij·id 'käp·ər kō'ak·sē·əl ,līn }

rigid insulation [ELEC] Electrical insulation that is part of a rigid structure, and must provide mechanical strength and stability of form as well as a dielectric barrier; mica, glass, porcelain, and thermosetting resins are the principal materials used. { 'rij·id ,in·sə'lā·shən }

R-indicator *See* R-display. { 'är ,in·də,kād·ər }

ring [COMPUT SCI] A cyclic arrangement of data elements, usually including a specified entry pointer. { riŋ }

ring-around [COMMUN] **1.** Improper routing of a call back through a switching center already trying to complete the same call, thus tying up the trunks by repeating the cycle. **2.** Oscillation of a repeater caused by leakage of the transmitter signal into the receiver. { 'riŋ ə,raund }

ring bus [ELEC] A substation switching arrangement that may consist of four, six, or more

breakers connected in a closed loop, with the same number of connection points. { 'riŋ ˌbas }

ring circuit [ELECTROMAG] In waveguide practice, a hybrid T junction having the physical configuration of a ring with radial branches. { 'riŋ ˌsər·kət }

ring counter [ELECTR] A loop of binary scalers or other bistable units so connected that only one scaler is in a specified state at any given time, as input signals are counted, the position of the one specified state moves in an ordered sequence around the loop. { 'riŋ ˌkaůnt·ər }

ring data structure [COMPUT SCI] Stored data that is organized by a chain of pointers so that the last pointer is directed back to the beginning of the chain. { 'riŋ 'dad·ə ˌstrək·chər }

ring discharge [ELECTR] A ring-shaped discharge generated by a high-frequency oscillating electromagnetic field produced by an external coil. Also known as toroidal discharge. { ˈriŋ 'dis ˌchārj }

ring head [ELECTR] A recording and playback head in a magnetic recording system which has the form of a ring with a gap at one point, and on which the coils are wound. { 'riŋ ˌhed }

ringing [COMMUN] The production of an audible or visible signal at a station or switchboard by means of an alternating or pulsating current. [CONT SYS] An oscillatory transient occurring in the output of a system as a result of a sudden change in input. { 'riŋ·iŋ }

ringing circuit [ELECTR] A circuit which has a capacitance in parallel with a resistance and inductance, with the whole in parallel with a second resistance; it is highly underdamped and is supplied with a step or pulse input. { 'riŋ·iŋ ˌsər·kət }

ring modulator [ELECTR] A modulator in which four diode elements are connected in series to form a ring around which current flows readily in one direction; input and output connections are made to the four nodal points of the ring; used as a balanced modulator, demodulator, or phase detector. { 'riŋ 'mäj·əˌlād·ər }

ring network [COMMUN] A communications network in which the nodes can be considered to be on a circle, about which messages must be routed. Also known as loop network. { 'riŋ 'net ˌwərk }

ring power transmission line [ELEC] A power transmission line that is closed upon itself to form a ring; provides two paths between the power station and any customer, and enables a faulty section of the line to be disconnected without interrupting service to customers. { 'riŋ 'paů·ər tranz'mish·ən ˌlīn }

ring shift *See* cyclic shift. { 'riŋ ˌshift }

ring structure [COMPUT SCI] A chained file organization such that the end of the chain points to its beginning. { 'riŋ ˌstrək·chər }

ring time [ELECTR] The length of time in microseconds required for a pulse of energy transmitted into an echo box to die out; a measurement of the performance of radar. { 'riŋ ˌtīm }

ripple [ELEC] The alternating-current component in the output of a direct-current power supply, arising within the power supply from incomplete filtering or from commutator action in a dc generator. { 'rip·əl }

ripple-carry adder [COMPUT SCI] A device for addition of two n-bit binary numbers, formed by connecting n full adders in cascade, with the carry output of each full adder feeding the carry input of the following full adder. { 'rip·əl ˌkar·ē ˌad·ər }

ripple filter [ELECTR] A low-pass filter designed to reduce ripple while freely passing the direct current obtained from a rectifier or direct-current generator. Also known as smoothing circuit, smoothing filter. { 'rip·əl ˌfil·tər }

ripple voltage [ELEC] The alternating component of the unidirectional voltage from a rectifier or generator used as a source of direct-current power. { 'rip·əl ˌvōl·tij }

RISC *See* reduced instruction set computer. { risk }

rise time [CONT SYS] The time it takes for the output of a system to change from a specified small percentage (usually 5 or 10) of its steady-state increment to a specified large percentage (usually 90 or 95). [ELEC] The time for the pointer of an electrical instrument to make 90% of the change to its final value when electric power suddenly is applied from a source whose impedance is high enough that it does not affect damping. { 'rīz ˌtīm }

rising-sun magnetron [ELECTR] A multicavity magnetron in which resonators having two different resonant frequencies are arranged alternately for the purpose of mode separation; the cavities appear as alternating long and short radial slots around the perimeter of the anode structure, resembling the rays of the sun. { 'rīz·iŋ ˌsən 'mag·nəˌträn }

Rivest-Shamir-Adleman algorithm [COMMUN] A public-key algorithm whose strength is based on the fact that factoring large composite prime numbers into their prime factors involves an overwhelming amount of computation. Abbreviated RSA algorithm. { ri'vest shə'mir 'ad·əl·mən ˌal·gəˌrith·əm }

RLL code *See* run-length-limited code. { ˌär|el'el ˌkōd }

rms value *See* root-mean-square value. { ˌär|em 'es ˌval·ü }

RO *See* receive-only.

robot [CONT SYS] A mechanical device that can be programmed to perform a variety of tasks of manipulation and locomotion under automatic control. { 'rōˌbät }

robust program [COMPUT SCI] **1.** A computer program using an iterative process that converges rapidly to the solution being sought. **2.** A computer program that performs well even under unusual conditions. { ˌrō·bəst 'prō·grəm }

roc [ELEC] A unit of electrical conductivity equal to the conductivity of a material in which an electric field of 1 volt per centimeter gives rise to a current density of 1 ampere per square centimeter. Derived from reciprocal ohm centimeter. { räk }

Rochelle-electric *See* ferroelectric. { rō'shel·i,lek·trik }

rocket antenna [ELECTROMAG] An antenna carried on a rocket, to receive signals controlling the rocket or to transmit measurements made by instruments aboard the rocket. { 'räk·ət an ˌten·ə }

rocky point effect [ELECTR] Transient but violent discharges between electrodes in high-voltage transmitting tubes. { 'räk·ē ˌpȯint iˌfekt }

rod gap [ELEC] **1.** A device that is usually formed of two ½-square-inch (3-square-centimeter) rods, one grounded and the other connected to the line conductor, but may also have the shape of rings or horns, used to limit the magnitude of transient overvoltages on an electrical system as a result of lightning strikes. **2.** Spark gap in which the electrodes are two coaxial rods, with ends between which the discharge takes place, cut perpendicularly to the axis. { 'räd ˌgap }

rod thermistor [ELECTR] A type of thermistor that has high resistance, long time constant, and moderate power dissipation; it is extruded as a long vertical rod 0.250–2.0 inches (0.63–5.1 centimeters) long and 0.050–0.110 inch (0.13–0.28 centimeter) in diameter, of oxide-binder mix and sintered; ends are coated with conducting paste and leads are wrapped on the coated area. { 'räd thərˈmis·tər }

roentgen current [ELEC] An electric current arising from the motion of polarization charges, as in the rotation of a dielectric in a charged capacitor. { 'rent·gən ˌkər·ənt }

Roget's spiral [ELEC] A spiral wire, suspended vertically with the lower end in mercury, that is made to go through a cycle in which an electric current passing through the wire produces mutual attraction between the coils, causing the wire to lift out of the mercury and breaking the current; the spiral then expands under its own weight, so that the lower end drops back into the mercury and the current is reestablished. { rō ˌzhāz 'spī·rəl }

role indicator [COMPUT SCI] In information retrieval, a code assigned to a key word to indicate its part of speech, nature, or function. { 'rōl ˌin·dəˌkād·ər }

rollback *See* rerun. { 'rōlˌbak }

roll in [COMPUT SCI] To restore to main memory a section of program or data that had previously been rolled out. { 'rōl ˌin }

rolling transposition [ELEC] Transposition in which the conductors of an open wire circuit are physically rotated in a substantially helical manner; with two wires, a complete transposition is usually executed in two consecutive spans. { 'rōl·iŋ ˌtranz·pəˈzish·ən }

roll-off [ELECTR] Gradually increasing loss or attenuation with increase or decrease of frequency beyond the substantially flat portion of the amplitude-frequency response characteristic of a system or transducer. { 'rōl ˌȯf }

roll out [COMPUT SCI] **1.** To make available additional main memory for one task by copying another task onto auxiliary storage. **2.** To read a computer register or counter by adding a one to each digit column simultaneously until all have returned to zero, with a signal being generated at the instant a column returns to zero. { 'rōl ˌaůt }

rollover [COMPUT SCI] A keyboard feature that allows more than one key to be depressed simultaneously, enabling the keys to be depressed more rapidly in sequence. { 'rōlˌō·vər }

roll your own *See* user program. { 'rōl yər 'ōn }

rom [ELEC] A unit of electrical conductivity, equal to the conductivity of a material in which an electric field of 1 volt per meter gives rise to a current density of 1 ampere per square meter. Derived from reciprocal ohm meter. { räm }

ROMable code [COMPUT SCI] A computer program developed to be stored permanently in a read-only memory (ROM). { 'räm·ə·bəl 'kōd }

roof filter [ELECTR] Low-pass filter used in carrier telephone systems to limit the frequency response of the equipment to frequencies needed for normal transmission, thereby blocking unwanted higher frequencies induced in the circuit by external sources; improves runaround crosstalk suppression and minimizes high-frequency singing. { 'rüf ˌfil·tər }

room noise [COMMUN] Ambient noise in a telephone station. { 'rüm ˌnȯiz }

room power [ELECTR] The electric power that is fed to the machinery in a computer room after passing through a power distribution unit, motor-generator set, or other conditioning and isolating device. { 'rüm ˌpaů·ər }

root [COMPUT SCI] The origin or most fundamental point of a tree diagram. Also known as base. { rüt }

root component *See* root symbol. { 'rüt kəm 'pō·nənt }

root directory [COMPUT SCI] The starting point in a hierarchical file system, where the system operates when it is first started. { 'rüt dīˌrek·trē }

root locus plot [CONT SYS] A plot in the complex plane of values at which the loop transfer function of a feedback control system is a negative number. { 'rüt ˈlō·kəs ˌplät }

root-mean-square current *See* effective current. { 'rüt ˌmēn 'skwer 'kə·rənt }

root-mean-square value [PHYS] The square root of the time average of the square of a quantity; for a periodic quantity, such as a sine wave used for audio measurements, the average is taken over one complete cycle. Abbreviated rms value. Also known as effective value. { 'rüt ˌmēn 'skwer 'val·yü }

root segment [COMPUT SCI] The master or controlling segment of an overlay structure which always resides in the main memory of a computer. { 'rüt ˌseg·mənt }

root sum square [COMMUN] A method of combining the power of multiple signals by taking the square root of the sum of the squares of all the signals. Abbreviated RSS. { 'rüt ˌsəm 'skwər }

root-sum-square value [PHYS] The square root of the sum of the squares of a series of related values; commonly used to express total harmonic distortion. { 'rüt ˌsəm 'skwər 'val·yü }

root symbol [COMPUT SCI] An element of a formal language, generally unique, that is not derivable

from other language elements. Also known as root component. { 'rüt ˌsim·bəl }

root task [COMPUT SCI] The initial program on a parallel machine from which one or more child processes branch out in the fork-join model. { 'rüt ˌtask }

rope-lay conductor [ELEC] Cable composed of a central core surrounded by one or more layers of helically laid groups of wires. { 'rōp ¦lā kən ˌdək·tər }

Rosenberg crossed-field generator [ELEC] A type of dynamoelectric amplifier which is self-regulating and can operate while the rotor varies in speed, the current never rising above a certain value. { 'rōz·ənˌbərg ¦krȯst ¦fēld 'jen·əˌrād·ər }

rosin joint [ELEC] A soldered joint in which one of the wires is surrounded by an almost invisible film of insulating rosin, making the joint intermittently or continuously open even though it looks good. { 'räz·ən ˌjȯint }

rotary amplifier *See* rotating magnetic amplifier. { 'rōd·ə·rē 'am·pləˌfī·ər }

rotary beam [ELECTROMAG] Short-wave antenna system highly directional in azimuth and altitude, mounted in such a manner that it can be rotated to any desired position, either manually or by an electric motor drive. { 'rōd·ə·rē 'bēm }

rotary converter *See* dynamotor. { 'rōd·ə·rē kən'vərd·ər }

rotary coupler *See* rotating joint. { 'rōd·ə·rē 'kəp·lər }

rotary digital audio tape system [ELECTR] A digital audio tape system that uses the helical-scan technology developed for video systems, with a rotating drum containing two metal-in-gap heads. Abbreviated R-DAT system. { ¦rōd·ə·rē ˌdij·əd·əl ˌȯd·ē·ō 'tāp ˌsis·təm }

rotary gap *See* rotary spark gap. { 'rōd·ə·rē 'gap }

rotary joint *See* rotating joint. { 'rōd·ə·rē 'jȯint }

rotary phase converter [ELEC] Machine which converts power from an alternating-current system of one or more phases to an alternating-current system of a different number of phases, but of the same frequency. { 'rōd·ə·rē 'fāz kənˌvərd·ər }

rotary power source [ELEC] An uninterruptible power system in which a battery driven dc motor mechanically drives an ac generator in the event of a power outage. { 'rōd·ə·rē 'paù·ərˌsȯrs }

rotary spark gap [ELEC] A spark gap in which sparks occur between one or more fixed electrodes and a number of electrodes projecting outward from the circumference of a motor-driven metal disk. Also known as rotary gap. { 'rōd·ə·rē 'spärkˌgap }

rotary stepping relay *See* stepping relay. { 'rōd·ə·rē 'step·iŋˌrē·lā }

rotary stepping switch *See* stepping relay. { 'rōd·ə·rē 'step·iŋˌswich }

rotary switch [ELEC] A switch that is operated by rotating its shaft. { 'rōd·ə·rē 'swich }

rotary system [COMMUN] A telephone switching system that uses unidirectional, rotary switches that carry ten sets of brushes (wipers), only one of which is tripped as part of the control and selection process. { 'rōd·ə·rē 'sis·təm }

rotary transformer [ELEC] A rotating machine used to transform direct-current power from one voltage to another. { 'rōd·ə·rē tranz'fȯr·mər }

rotary-vane attenuator [ELECTROMAG] Device designed to introduce attenuation into a waveguide circuit by varying the angular position of a resistive material in the guide. { 'rōd·ə·rē ¦vān ə'ten·yəˌwād·ər }

rotary voltmeter [ENG] Type of electrostatic voltmeter used for measuring high voltages. { 'rōd·ə·rē 'vōltˌmēd·ər }

rotating amplifier *See* rotating magnetic amplifier. { 'rōˌtād·iŋ 'am·pləˌfī·ər }

rotating-anode tube [ELECTR] An x-ray tube in which the anode rotates continuously to bring a fresh area of its surface into the beam of electrons, allowing greater output without melting the target. { 'rōˌtād·iŋ ¦anˌōd ˌtüb }

rotating-coil gaussmeter [ENG] An instrument for measuring low magnetic field strengths and flux densities by measuring the voltage induced in a search coil that is rotated in the field at constant speed. { ˌrōˌtād·iŋ ˌkȯil 'gaùsˌmēd·ər }

rotating joint [ELECTROMAG] A joint that permits one section of a transmission line or waveguide to rotate continuously with respect to another while passing radio-frequency energy. Also known as rotary coupler; rotary joint. { 'rōˌtād·iŋ 'jȯint }

rotating magnetic amplifier [ELEC] A prime-mover-driven direct-current generator whose power output can be controlled by small field input powers, to give power gain as high as 10,000. Also known as rotary amplifier; rotating amplifier. { 'rōˌtād·iŋ mag'ned·ik 'am·pləˌfī·ər }

rotation [COMPUT SCI] An operation performed on data in a register of the central processing unit, in which all the bits in the register are shifted one position to the right or left, and the endmost bit, which is shifted out of the register, is carried around to the position at the opposite end of the register. { rō'tā·shən }

rotational delay *See* rotational latency. { rō'tā·shən·əl di'lā }

rotational latency [COMPUT SCI] The time required, following an order to read or write information in disk storage, for the location of the information to revolve beneath the appropriate read/write head. Also known as rotational delay. { rō'tā·shən·əl 'lāt·ən·sē }

rotational position sensing [COMPUT SCI] A fast disk search method whereby the control unit looks for a specified sector, and then receives the sector number required to access the record. { rō'tā·shən·əl pə'zish·ən ˌsens·iŋ }

rotator [ELECTROMAG] A device that rotates the plane of polarization of a plane-polarized electromagnetic wave, such as a twist in a waveguide. { 'rōˌtād·ər }

rotoflector [ELECTROMAG] In radar, elliptically shaped, rotating reflector used to reflect a vertically directed radar beam at right angles so that it radiates in a horizontal direction. { 'rōd·əˌflek·tər }

rotor [COMMUN] **1.** Disk with a set of input contacts and a set of output contacts, connected by any prearranged scheme designed to rotate within an electrical cipher machine. **2.** Disk whose rotation produces a variation of some cryptographic element in a cipher machine usually by means of lugs (or pins) in or on its periphery. [ELEC] The rotating member of an electrical machine or device, such as the rotating armature of a motor or generator, or the rotating plates of a variable capacitor. { 'rōd·ər }

rotor plate [ELEC] One of the rotating plates of a variable capacitor, usually directly connected to the metal frame. { 'rōd·ər ˌplāt }

round-robin scheduling [COMPUT SCI] A scheduling algorithm which repeatedly runs through a list of users, giving each user the opportunity to use the central processing unit in succession. { 'raund ˌräb·ən 'skej·ə·liŋ }

round-the-world echo [COMMUN] A signal occurring every 1/7 second when a radio wave repeatedly encircles the earth at its speed of 186,000 miles (300,000 kilometers) per second. { 'raund thə 'wərld 'ek·ō }

round-trip echoes [ELECTROMAG] Multiple reflection echoes produced when a radar pulse is reflected from a target strongly enough so that the echo is reflected back to the target where it produces a second echo. { 'raund ˌtrip 'ek·ōz }

router [COMMUN] A device that selects an appropriate pathway for a message and routes the message accordingly. { 'raud·ər }

routine [COMPUT SCI] A set of digital computer instructions designed and constructed so as to accomplish a specified function. { rü'tēn }

routine library [COMPUT SCI] Ordered set of standard and proven computer routines by which problems or parts of problems may be solved. { rü'tēn ˌlī,brer·ē }

routing [COMMUN] The assignment of a path by which a message will travel to its destination. { 'rüd·iŋ }

routing indicator [COMMUN] **1.** A group of letters, engineered and assigned, to identify a station within a digital communications network. **2.** A group of letters assigned to indicate the geographic location of a station; a fixed headquarters of a command, activity, or unit at a geographic location; or the general location of a tape relay or tributary station to facilitate the routing of traffic over tape relay networks. { 'rüd·iŋ ˌin·də ˌkād·ər }

routing message [COMMUN] The function performed at a central message processor of selecting the route, or alternate route required, by which a message will proceed to the next point in reaching its destination. { 'rüd·iŋ ˌmes·ij }

row [COMPUT SCI] **1.** The characters, or corresponding bits of binary-coded characters, in a computer word. **2.** Equipment which simultaneously processes the bits of a character, the characters of a word, or corresponding bits of binary-coded characters in a word. **3.** Corresponding positions in a group of columns. { rō }

row address [COMPUT SCI] An index array entry field which contains the main storage address of a data block. { 'rō 'adˌres }

Rowland current [ELEC] A convection current that arises when a charged capacitor plate is rotated. { 'rō·lənd ˌkər·ənt }

row order [COMPUT SCI] The storage of a matrix $a(m,n)$ as $a(1,1), a(1,2), \ldots, a(1,n), a(2,1), a(2,2), \ldots$. { 'rō ˌór·dər }

RPG *See* report program generator.

RPN *See* reverse Polish notation.

RS-232 [COMMUN] A standard developed by the Electronic Industries Association that governs the interface between data processing and data communications equipment, and is widely used to connect microcomputers to peripheral devices.

RSA algorithm *See* Rivest-Shamir-Adleman algorithm. { ¦är¦es¦ā 'al·gəˌrith·əm }

R-scan *See* R-display. { 'ärˌskan }

R-scope *See* R-display. { 'ärˌskōp }

RSS *See* root sum square.

RTL *See* resistor-transistor logic.

rubber banding [COMPUT SCI] In computer graphics, the moving of a line or object, with one end held fixed in position. { ¦rəb·ər 'band·iŋ }

ruggedization [ELECTR] Making electronic equipment and components resistant to severe shock, temperature changes, high humidity, or other detrimental environmental influences. { ˌrəg·ə·də'zā·shən }

rule-based control system *See* direct expert control system. { ¦rül ˌbāst kən'trōl ˌsis·təm }

rule-based expert system [COMPUT SCI] An expert system based on a collection of rules that a human expert would follow in dealing with a problem. { ¦rül ¦bāst 'ekˌspərt ˌsis·təm }

rule of inference *See* production. { 'rül əv 'in·frəns }

run [COMPUT SCI] A single, complete execution of a computer program, or one continuous segment of computer processing, used to complete one or more tasks for a single customer or application. Also known as machine run. { rən }

runaround crosstalk [COMMUN] Crosstalk resulting from coupling between the high-level end of one repeater and the low-level end of another repeater, as at a carrier telephone repeater station. { 'rən·əˌraund 'krȯsˌtȯk }

runaway effect [ELECTR] The phenomenon whereby an increase in temperature causes an increase in a collector-terminal current in a transistor, which in turn results in a higher temperature and, ultimately, failure of the transistor; the effect limits the power output of the transistor. { 'rən·əˌwā iˌfekt }

runaway electron [ELECTR] An electron, in an ionized gas to which an electric field is applied

that gains energy from the field faster than it loses energy by colliding with other particles in the gas. { 'rən·ə,wā i'lek,trän }

runaway tape [COMPUT SCI] A tape reel that spins rapidly and out of control as the result of a hardware malfunction. { 'rən·ə¦wā 'tāp }

run book [COMPUT SCI] The collection of materials necessary to document a program run on a computer. Also known as problem file; problem folder. { 'rən ˌbůk }

run chart [COMPUT SCI] A flow chart for one or more computer runs which shows input, output, and the use of peripheral units, but no details of the execution of the run. Also known as run diagram. { 'rən ˌchärt }

run diagram *See* run chart. { 'rən ˌdī·əˌgram }

run documentation [COMPUT SCI] Detailed instructions to the operator on how to run a particular computer program. { 'rən ˌdäk·yə·men'tā·shən }

run-length encoding [COMPUT SCI] A method of data compression that encodes strings of the same character as a single number. { 'rən ¦leŋkth in'kōd·iŋ }

run-length-limited code [COMMUN] A binary code in which a 1 is inserted after a certain number of 0's, in order to avoid long strings of 0's, which would require very accurate clocking in order to ensure that a bit was not lost. Abbreviated RLL code. { ¦rən ¦leŋkth ¦lim·əd·əd 'kōd }

run motor [ELEC] In facsimile equipment, a motor which supplies the power to drive the scanning or recording mechanisms; a synchronous motor is used to limit the speed. { 'rən ˌmōd·ər }

running accumulator *See* push-down storage. { 'rən·iŋ ə'kyü·məˌlād·ər }

run-time error [COMPUT SCI] An error in a computer program that is not detected until the program is executed, and then causes a processing error to occur. { 'rən ¦tīm 'er·ər }

run-time error handler [COMPUT SCI] A system control program that detects and diagnoses run-time errors and issues messages concerning them. { 'rən ¦tīm 'er·ər ˌhand·lər }

run-time library [COMPUT SCI] A collection of general-purpose routines that form part of a language translator and allow computer programs to be run with a particular operating system. { 'rən ¦tīm 'lī,brer·ē }

rvalue *See* right value. { 'är,val·yü }

S

S *See* siemens.

sacrificial compliant substrate *See* compliant substrate. { ˌsak·rəˈfish·əl kəmˈplī·ənt ˈsəb ˌstrāt }

safety factor [ELEC] The amount of load, above the normal operating rating, that a device can handle without failure. [MECH] *See* factor of safety. { ˈsāf·tē ˌfak·tər }

sag [ELEC] Slack introduced in an aerial cable or open-wire line to compensate for contraction during cold weather. { sag }

Saint Elmo's fire [ELEC] A visible electric discharge, sometimes seen on the mast of a ship, on metal towers, and on projecting parts of aircraft, due to concentration of the atmospheric electric field at such projecting parts. { ˈsānt ˈel·mōz ˈfīr }

salammoniac cell [ELEC] Cell in which the electrolyte consists primarily of a solution of ammonium chloride. { ˌsal·əˈmō·nēˌak ˌsel }

salient-pole field winding [ELEC] A type of field winding in electric machinery where the winding turns are concentrated around the pole core. { ˈsāl·yənt ˈpōl ˈfēld ˌwīnd·iŋ }

Salisbury dark box [ELECTR] Isolating chamber used for test work in connection with radar equipment; the walls of the chamber are specially constructed to absorb all impinging microwave energy at a certain frequency. { ˈsȯlzˌber·ē ˈdärk ˈbäks }

Sallen-Key filter [ELECTR] An electric filter that uses a single amplifier of positive low gain, realized by an operational amplifier and two feedback resistors. { ˈsal·ən ˈkē ˌfil·tər }

sample-and-hold circuit [ELECTR] A circuit that measures an input signal at a series of definite times, and whose output remains constant at a value corresponding to the most recent measurement until the next measurement is made. { ˈsam·pəl ən ˈhōld ˌsər·kət }

sampled-data control system [CONT SYS] A form of control system in which the signal appears at one or more points in the system as a sequence of pulses or numbers usually equally spaced in time. { ˈsam·pəld ˈdad·ə kənˈtrōl ˌsis·təm }

sampler [CONT SYS] A device, used in sampled-data control systems, whose output is a series of impulses at regular intervals in time; the height of each impulse equals the value of the continuous input signal at the instant of the impulse. { ˈsam·plər }

sampling [ENG] Process of obtaining a sequence of instantaneous values of a wave. { ˈsam·pliŋ }

sampling gate [ELECTR] A gate circuit that extracts information from the input waveform only when activated by a selector pulse. { ˈsam·pliŋ ˌgāt }

sampling interval [CONT SYS] The time between successive sampling pulses in a sampled-data control system. { ˈsam·pliŋ ˌin·tər·vəl }

sampling process [ENG] The process of obtaining a sequence of instantaneous values of some quantity that varies continuously with time. { ˈsam·pliŋ ˌprä·səs }

sampling switch *See* commutator switch. { ˈsam·pliŋ ˌswich }

sampling synthesis [ENG ACOUS] Any method of synthesizing musical tones that is based on playing back digitally recorded sounds. { ˈsam·pliŋ ˌsin·thə·səs }

sampling theorem [COMMUN] The theorem that a signal that varies continuously with time is completely determined by its values at an infinite sequence of equally spaced times if the frequency of these sampling times is greater than twice the highest frequency component of the signal. Also known as Shannon's sampling theorem. { ˈsam·pliŋ ˌthir·əm }

sampling time [ENG] The time between successive measurements of a physical quantity. { ˈsam·pliŋ ˌtīm }

sampling voltmeter [ENG] A special type of voltmeter that detects the instantaneous value of an input signal at prescribed times by means of an electronic switch connecting the signal to a memory capacitor; it is particularly effective in detecting high-frequency signals (up to 12 gigahertz) or signals mixed with noise. { ˈsam·pliŋ ˈvōltˌmēd·ər }

sanatron circuit [ELECTR] A variable time-delay circuit having two pentodes and two diodes, used to produce very short gate waveforms having time durations that vary linearly with a reference voltage. { ˈsan·əˌträn ˌsər·kət }

sand boil *See* blowout. { ˈsan ˌbȯil }

sand load [ELECTROMAG] An attenuator used as a power-dissipating terminating section for a coaxial line or waveguide; the dielectric space

in the line is filled with a mixture of sand and graphite that acts as a matched-impedance load, preventing standing waves. { 'san ˌlōd }

SANTA *See* systematic analog network testing approach. { 'san·tə }

SAR *See* synthetic-aperture radar.

SASAR *See* segmented aperture-synthetic aperture radar. { 'sāˌsär }

satellite communication [COMMUN] Communication that involves the use of an active or passive satellite to extend the range of a communications, radio, television, or other transmitter by returning signals to earth from an orbiting satellite. { 'sad·əlˌīt kəˌmyü·nəˌkā·shən }

satellite computer [COMPUT SCI] A computer which, under control of the main computer, handles the input and output routines, thereby allowing the main computer to be fully dedicated to computations. { 'sad·əlˌīt kəmˌpyüd·ər }

Satellite Digital Audio Radio Service [COMMUN] Referring to satellite-delivered digital audio systems. The digital audio data rate in these systems is specified as being 64 kbits/s. Abbreviated SDARS. { 'sad·əlˌīt 'dij·əd·əl 'ōd·ē·ōˈrād·ē·ō ˌsər·vəs }

satellite master antenna television system [COMMUN] A master antenna television system equipped with a television receive-only antenna and associated electronics to receive broadcasts relayed by geostationary satellites. Abbreviated SMATV system. { 'sad·əlˌīt ¦mas·tər anˌten·ə 'tel·əˌvizh·ən ˌsis·təm }

satellite processor [COMPUT SCI] One of the outlying processors in a hierarchical distributed processing system, typically placed at or near point-of-transaction locations, and designed to serve the users at those locations. { 'sad·əlˌīt ˌprāˌses·ər }

saturated diode [ELECTR] A diode that is passing the maximum possible current, so further increases in applied voltage have no effect on current. { 'sach·əˌrād·əd 'dīˌōd }

saturating signal [ELECTR] In radar, a signal of an amplitude greater than the dynamic range of the receiving system. { 'sach·əˌrād·iŋ 'sig·nəl }

saturation [ELECTR] **1.** The condition that occurs when a transistor is driven so that it becomes biased in the forward direction (the collector becomes positive with respect to the base, for example, in a *pnp* type of transistor). **2.** *See* anode saturation; temperature saturation. { ˌsach·əˈrā·shən }

saturation current [ELECTR] **1.** In general, the maximum current which can be obtained under certain conditions. **2.** In a vacuum tube, the space-charge-limited current, such that further increase in filament temperature produces no specific increase in anode current. **3.** In a vacuum tube, the temperature-limited current, such that a further increase in anode-cathode potential difference produces only a relatively small increase in current. **4.** In a gaseous-discharge device, the maximum current which can be obtained for a given mode of discharge. **5.** In a semiconductor, the maximum current which just precedes a change in conduction mode. { ˌsach·əˈrā·shən ¦kə·rənt }

saturation limiting [ELECTR] Limiting the minimum output voltage of a vacuum-tube circuit by operating the tube in the region of plate-current saturation (not to be confused with emission saturation). { ˌsach·əˈrā·shən ˈlim·əd·iŋ }

saturation signal [ELECTROMAG] A radio signal (or radar echo) which exceeds a certain power level fixed by the design of the receiver equipment; when a receiver or indicator is "saturated," the limit of its power output has been reached. { ˌsach·əˈrā·shən ¦sig·nəl }

sawtooth generator [ELECTR] A generator whose output voltage has a sawtooth waveform, used to produce sweep voltages for cathode-ray tubes. { 'sóˌtüth 'jen·əˌrād·ər }

sawtooth modulated jamming [ELECTR] Electronic countermeasure technique when a high-level jamming signal is transmitted, thus causing large automatic gain control voltages to be developed at the radar receiver that, in turn, cause target pip and receiver noise to completely disappear. { 'sóˌtüth ¦mäj·əˌlād·əd 'jam·iŋ }

sawtooth pulse [ELECTR] An electric pulse having a linear rise and a virtually instantaneous fall, or conversely, a virtually instantaneous rise and a linear fall. { 'sóˌtüth ¦pəls }

sawtooth waveform [ELECTR] A waveform characterized by a slow rise time and a sharp fall, resembling a tooth of a saw. { 'sóˌtüth 'wāvˌfȯrm }

saxophone [ELECTROMAG] Vertex-fed linear array antenna giving a cosecant-squared radiation pattern. { 'sakˌsəˌfōn }

S band [COMMUN] A band of radio frequencies extending from 1550 to 5200 megahertz, corresponding to wavelengths of 19.37 to 5.77 centimeters. { 'es ˌband }

S-band hiran *See* shiran. { 'es ¦band 'hīˌran }

S-band single-access service [COMMUN] One of the services provided by the Tracking and Data Relay Satellite System, which provides return-link data rates up to 6 megabits per second for each user spacecraft and forward-link data at 300 kilobits per second. Abbreviated SSA. { ¦es ˌband ˌsiŋ·gəl 'akˌses ˌsər·vəs }

S-100 bus [ELECTR] A bus assembly with 100 conductors, widely used in microcomputer-based systems. { ˌes ¦wən'hən·drəd 'bəs }

SC *See* sectional center.

SCADA *See* supervisory control and data acquisition. { 'skad·ə or ¦esˌsēˌāˌdēˈā }

scalar [COMPUT SCI] A single value or item. { 'skā·lər }

scalar data type [COMPUT SCI] The manner in which a sequence of bits represents a single data item in a computer program. Also known as aggregate data type. { 'skā·lər 'dad·əˌtīp }

scalar processor [COMPUT SCI] A computer that carries out computations on one number at a time. { 'skā·lər 'prāˌses·ər }

scalar quantization [COMPUT SCI] A data compression technique in which a value is presented (in approximation) by the closest, in some mathematical sense, of a predefined set of allowable values. { ¦skā·lər ˌkwän·təˈzā·shən }

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scale-of-ten circuit *See* decade scaler. { ¦skāl əv ¦ten 'sər·kət }

scale-of-two circuit *See* binary scaler. { ¦skāl əv ¦tü 'sər·kət }

scaler [ELECTR] A circuit that produces an output pulse when a prescribed number of input pulses is received. Also known as counter; scaling circuit. { 'skā·lər }

scaling [ELECTR] Counting pulses with a scaler when the pulses occur too fast for direct counting by conventional means. { 'skāl·iŋ }

scaling circuit *See* scaler. { 'skāl·iŋ ˌsər·kət }

scaling factor [ELECTR] The number of input pulses per output pulse of a scaling circuit. Also known as scaling ratio. { 'skāl·iŋ ˌfak·tər }

scaling ratio *See* scaling factor. { 'skāl·iŋ ˌrā·shō }

scan [COMPUT SCI] To examine information, following a systematic, predetermined sequence, for some particular purpose. [ELECTR] The motion, usually periodic, given to the major lobe of an antenna; the process of directing the radio-frequency beam successively over all points in a given region of space. [ENG] **1.** To examine an area, a region in space, or a portion of the radio spectrum point by point in an ordered sequence; for example, conversion of a scene or image to an electric signal or use of radar to monitor an airspace for detection, navigation, or traffic control purposes. **2.** One complete circular, up-and-down, or left-to-right sweep of the radar, light, or other beam or device used in making a scan. { skan }

scan converter [ELECTR] **1.** Equipment that converts radar date images to data at a sampling rate suitable for transmission over telephone lines or narrow-band radio circuits for use at remote locations. Scan converters may work digitally with quantized data; analog ones often use a "memory" scope, a cathode-ray tube of long persistence, permitting nondestructive readout of radar, television, and data displays. **2.** A cathode-ray tube that is capable of storing radar, television, and data displays for nondestructive readout over prolonged periods of time. { 'skan kən,vərd·ər }

scan head [ELECTR] A sensing device that is moved across the image being scanned. { 'skan ˌhed }

scanistor [ELECTR] Integrated semiconductor optical-scanning device that converts images into electrical signals; the output analog signal represents both amount and position of light shining on its surface. { skə'nis·tər }

scan line [ELECTR] A horizontal row of pixels on a video screen that are examined or refreshed in succession in one sweep across the screen during the scanning process. { 'skan ˌlīn }

scanner [COMMUN] That part of a facsimile transmitter which systematically translates the densities of the elemental areas of the subject copy into corresponding electric signals. [COMPUT SCI] A device that converts an image of something outside a computer, such as text, a drawing, or a photograph, into a digital image that it sends into the computer for display or further processing. { 'skan·ər }

scanner selector [COMPUT SCI] An electronic device interfacing computer and multiplexers when more than one multiplexer is used. { 'skan·ər si ˌlek·tər }

scanning circuit *See* sweep circuit. { 'skan·iŋ ˌsər·kət }

scanning electron microscope [ELECTR] A type of electron microscope in which a beam of electrons, a few hundred angstroms in diameter, systematically sweeps over the specimen; the intensity of secondary electrons generated at the point of impact of the beam on the specimen is measured, and the resulting signal is fed into a cathode-ray-tube display which is scanned in synchronism with the scanning of the specimen. Abbreviated SEM. { 'skan·iŋ i'lek,trän 'mī·krə ˌskōp }

scanning frequency *See* stroke speed. { 'skan·iŋ ˌfrē·kwən·sē }

scanning head [ELECTR] Light source and phototube combined as a single unit for scanning a moving strip of paper, cloth, or metal in photoelectric side-register control systems. { 'skan·iŋ ˌhed }

scanning line [COMMUN] **1.** In a video system, a single, continuous, narrow strip which is determined by the process of scanning. **2.** Path traced by the scanning or recording spot in one sweep across the subject copy or record sheet. { 'skan·iŋ ˌlīn }

scanning linearity [ELECTR] In a video system, the uniformity of scanning speed during the trace interval. { 'skan·iŋ ˌlin·ē'ar·əd·ē }

scanning line frequency *See* stroke speed. { 'skan·iŋ ¦līn ˌfrē·kwən·sē }

scanning loss [ELECTROMAG] In a radar system employing a scanning antenna, the reduction in sensitivity (usually expressed in decibels) due to scanning across the target, compared with that obtained when the beam is directed constantly at the target. { 'skan·iŋ ˌlòs }

scanning radio [ELECTR] A radio receiver that automatically scans across public service, emergency service, or other radio bands and stops at the first preselected station which is on the air. Also known as radio scanner. { 'skan·iŋ 'rād·ē·ō }

scanning sequence [ENG] The order in which the points in a region are scanned; for example, in television the picture is scanned horizontally from left to right and vertically from top to bottom. { 'skan·iŋ ˌsēk·wəns }

scanning speed *See* spot speed. { 'skan·iŋ ˌspēd }

scanning spot *See* picture element. { 'skan·iŋ ˌspät }

scanning switch *See* commutator switch. { 'skan·iŋ ˌswich }

scanning transmission electron microscope [ELECTR] A type of electron microscope which scans with an extremely narrow beam that is transmitted through the sample; the detection apparatus produces an image whose brightness depends on atomic number

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of the sample. Abbreviated STEM. { 'skan·iŋ tranz'mish·ən i'lek,trän 'mī·krə,skōp }

scanning tunneling microscope [ELECTR] An instrument for producing surface images with atomic-scale lateral resolution, in which a fine probe tip is raster-scanned over the surface at a distance of 0.5–1 nanometer, and the resulting tunneling current, or the position of the tip required to maintain a constant tunneling current, is monitored. Also known as tunneling microscope. { 'skan·iŋ ¦tən·əl·iŋ 'mī·krə,skōp }

scanning yoke *See* deflection yoke. { 'skan·iŋ ,yōk }

scatter band [COMMUN] In pulse interrogation systems, the total bandwidth occupied by the frequency spread by numerous interrogations operating on the same nominal radio frequency. { 'skad·ər ,band }

scatterer [ELECTROMAG] Object in an otherwise relatively homogeneous propagation medium that intercepts electromagnetic waves such as radar signals and reflects them in directions associated with the shape and composition of the object. Examples include individual raindrops, earth surface features, sea-wave crests, buildings, and vehicles. { 'skad·ər·ər }

scattering [ELECTROMAG] Diffusion of electromagnetic waves in a random manner by air masses in the upper atmosphere, permitting long-range reception, as in scatter propagation. Also known as radio scattering. { 'skad·ə·riŋ }

scattering coefficient [ELECTROMAG] One of the elements of the scattering matrix of a waveguide junction; that is, a transmission or reflection coefficient of the junction. { 'skad·ə·riŋ ,kō·i ,fish·ənt }

scattering cross section [ELECTROMAG] The power of electromagnetic radiation scattered by an antenna divided by the incident power. { 'skad·ə·riŋ 'krȯs ,sek·shən }

scattering matrix [ELECTROMAG] A square array of complex numbers consisting of the transmission and reflection coefficients of a waveguide junction. { 'skad·ə·riŋ ,mā·triks }

scatter loading [COMPUT SCI] The process of loading a program into main memory such that each section or segment of the program occupies a single, connected memory area but the several sections of the program need not be adjacent to each other. { 'skad·ər ,lōd·iŋ }

scatter propagation [ELECTROMAG] Transmission of radio waves far beyond line-of-sight distances by using high power and a large transmitting antenna to beam the signal upward into the atmosphere and by using a similar large receiving antenna to pick up the small portion of the signal that is scattered by the atmosphere. Also known as beyond-the-horizon communication; forward-scatter propagation; over-the-horizon propagation. { 'skad·ər ,präp·ə,gā·shən }

scatter read [COMPUT SCI] An input operation that places various segments of an input record into noncontiguous areas in central memory. { 'skad·ər ,rēd }

scatter reflections [ELECTROMAG] Reflections from portions of the ionosphere having different virtual heights, which mutually interfere and cause rapid fading. { 'skad·ər ri,flek·shənz }

scene analysis *See* picture segmentation. { 'sēn ə,nal·ə·səs }

scheduled down time [COMPUT SCI] A period of time designated for closing down a computer system for preventive maintenance. { 'skej·əld 'daún,tīm }

scheduler [COMPUT SCI] A system control program that determines the sequence in which programs will be processed by a computer and automatically submits them for execution at predetermined times. { 'skej·ə·lər }

scheduling algorithm [COMPUT SCI] A systematic method of determining the order in which tasks will be performed by a computer system, generally incorporated into the operating system. { 'skej·ə·liŋ ,al·gə,rith·əm }

schema [COMPUT SCI] A logical description of the data in a data base, including definitions and relationships of data. { 'skē·mə }

schematic circuit diagram *See* circuit diagram. { ski'mad·ik 'sər·kət ,dī·ə,gram }

Schering bridge [ELEC] A four-arm alternating-current bridge used to measure capacitance and dissipation factor; bridge balance is independent of frequency. { 'sher·iŋ ,brij }

Schmitt circuit [ELECTR] A bistable pulse generator in which an output pulse of constant amplitude exists only as long as the input voltage exceeds a certain value. Also known as Schmitt limiter; Schmitt trigger. { 'shmit ,sər·kət }

Schmitt limiter *See* Schmitt circuit. { 'shmit 'lim·əd·ər }

Schmitt trigger *See* Schmitt circuit. { 'shmit 'trig·ər }

Schottky barrier [ELECTR] A transition region formed within a semiconductor surface to serve as a rectifying barrier at a junction with a layer of metal. { 'shät·kē ,bar·ē·ər }

Schottky barrier diode [ELECTR] A semiconductor diode formed by contact between a semiconductor layer and a metal coating; it has a nonlinear rectifying characteristic; hot carriers (electrons for *n*-type material or holes for *p*-type material) are emitted from the Schottky barrier of the semiconductor and move to the metal coating that is the diode base; since majority carriers predominate, there is essentially no injection or storage of minority carriers to limit switching speeds. Also known as hot-carrier diode; Schottky diode. { 'shät·kē ¦bar·ē·ər 'dī ,ōd }

Schottky diode *See* Schottky barrier diode. { 'shät·kē 'dī,ōd }

Schottky-diode FET logic [ELECTR] A logic gate configuration used with gallium-arsenide field-effect transistors operating in the depletion mode, in which very small Schottky diodes at the gate input provide the logical OR function and the level shifting required to make the input and output voltage levels compatible. Abbreviated SDFL. { 'shät·kē ¦dī,ōd ¦ef¦ē¦tē 'läj·ik }

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Schottky effect [SOLID STATE] The enhancement of the termionic emission of a conductor resulting from an electric field at the conductor surface. { 'shät-kē i,fekt }

Schottky noise *See* shot noise. { 'shät-kē ,nóiz }

Schottky theory [SOLID STATE] A theory describing the rectification properties of junction between a semiconductor and a metal that result from formation of a depletion layer at the surface of fontact. { 'shät-kē ,thē·ə·rē }

Schottky transistor-transistor logic [ELECTR] A transistor-transistor logic circuit in which a Schottky diode with forward diode voltage is placed across the base-collector junction of the output transistor in order to improve the speed of the circuit. { 'shät-kē tran¦zis·tər tran¦zis·tər 'läj·ik }

Schrage motor [ELEC] A type of alternating-current commutator motor whose speed is controlled by varying the position of sets of brushes on the commutator. { 'shrāg·ə ,mōd·ər }

Schwinger critical field [ELEC] That electric field at which an electron is accelerated from rest to a velocity at which its kinetic energy equals its rest energy over a distance of one Compton wavelength. { ¦shviŋ·ər ¦krid·ə·kəl 'fēld }

scientific calculator [COMPUT SCI] An electronic calculator that has provisions for handling exponential, trigonometric, and sometimes other special functions in addition to performing arithmetic operations. { ,sī·ən'tif·ik 'kal·kyə,lād·ər }

scientific computer [COMPUT SCI] A computer which has a very large memory and is capable of handling extremely high-speed arithmetic and a very large variety of floating-point arithmetic commands. { ,sī·ən'tif·ik kəm'pyüd·ər }

scientific notation [COMPUT SCI] The display of numbers in which a base number, representing the significant digits, is followed by a number representing the power of 10 to which the base number is raised. { ,sī·ən¦tif·ik nō'tā·shən }

scientific system [COMPUT SCI] A system devoted principally to computations as opposed to business and data-processing systems, the main emphasis of which is on the updating of data records and files rather than the performance of calculations. { ,sī·ən'tif·ik 'sis·təm }

scintillation [ELECTROMAG] **1.** Fluctuation in radar echo amplitude, usually that associated with atmospheric irregularities in the propagation path. **2.** Random fluctuation, in radio propagation, of the received field about its mean value, the deviations usually being relatively small. { ,sint·əl'ā·shən }

scissoring [COMPUT SCI] In computer graphics, the deletion of those parts of an image that fall outside a window that has been placed over the original image. Also known as clipping. { 'siz·ər·iŋ }

scoop *See* ellipsoidal floodlight. { sküp }

scope [COMPUT SCI] For a variable in a computer program, the portion of the computer program within which the variable can be accessed (used or changed). [ELECTR] *See* radarscope. { skōp }

scotoscope [ELECTR] A telescope which employs an image intensifier to see in the dark. { 'skäd·ə ,skōp }

Scott connection [ELECTR] A type of transformer which transmits power from two-phase to three-phase systems, or vice versa. { 'skät kə,nek·shən }

Scott top [ELEC] Transformers arranged in the Scott connection for converting electrical power from two-phase to three-phase, or vice versa. { 'skät ,täp }

SCR *See* system clock reference.

scramble [COMMUN] To mix, in cryptography, in random or quasi-random fashion. { 'skram·bəl }

scrambler [ELECTR] A circuit that divides speech frequencies into several ranges by means of filters, then inverts and displaces the frequencies in each range so that the resulting reproduced sounds are unintelligible; the process is reversed at the receiving apparatus to restore intelligible speech. Also known as speech inverter; speech scrambler. { 'skram·blər }

scrambling [COMMUN] The alteration of the characteristics of a video, audio, or coded data stream in order to prevent unauthorized reception of the information in a clear form. { 'skram·bliŋ }

scratch [COMPUT SCI] To remove data or to set up its identifying labels so that new data can be written over it. { skrach }

scratch file [COMPUT SCI] A temporary file for future use, created by copying all or part of a data set to an auxiliary memory device. { 'skrach ,fīl }

scratch-pad memory [COMPUT SCI] A very fast intermediate storage (in the form of flip-flop register or semiconductor memory) which often supplements main core memory. { 'skrach ,pad ,mem·rē }

scratch tape [COMPUT SCI] A reel of magnetic tape containing data that may now be destroyed. { 'skrach ,tāp }

screed wire *See* ground wire. { 'skrēd ,wīr }

screen [COMPUT SCI] To make a preliminary selection from a set of entities, selection criteria being based on a given set of rules or conditions. [ELECTR] **1.** The surface on which an image is made visible for viewing; it may be a fluorescent screen with a phosphor layer that converts the energy of an electron beam to visible light, or a translucent or opaque screen on which the optical image is projected, or a display surface of the types commonly used in computers. **2.** *See* screen grid. [ELECTROMAG] Metal partition or shield which isolates a device from external magnetic or electric fields. { skrēn }

screen angle [ELECTROMAG] Vertical angle bounded by a straight line from the radar antenna to the horizon and the horizontal at the antenna assuming a $\frac{4}{3}$ earth's radius. { 'skrēn ,aŋ·gəl }

screen capture *See* screen shot. { 'skrēn ,kap·chər }

screen dissipation [ELECTR] Power dissipated in the form of heat on the screen grid as the result of bombardment by the electron stream. { 'skrēn ,dis·ə,pā·shən }

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screen dump [COMPUT SCI] **1.** The printing of everything that appears on a computer screen. **2.** The printed copy that results from this action. { 'skrēn ˌdəmp }

screened trailing cable [ELEC] A flexible cable provided with a protective screen of conducting material, so applied as to enclose each power core separately or to enclose together all the cores of the cable. { 'skrēnd 'trāl·iŋ 'kā·bəl }

screen format [COMPUT SCI] The manner in which information is arranged and presented on a cathode-ray tube or other electronic display. { 'skrēn ˌfȯrˌmat }

screen formatter [COMPUT SCI] A computer program that enables the user to design and set up screen formats. Also known as screen generator; screen painter. { 'skrēn ˌfȯrˌmad·ər }

screen generator *See* screen formatter. { 'skrēn ˌjen·əˌrād·ər }

screen grid [ELECTR] A grid placed between a control grid and an anode of an electron tube, and usually maintained at a fixed positive potential, to reduce the electrostatic influence of the anode in the space between the screen grid and the cathode. Also known as screen. { 'skrēn ˌgrid }

screen image buffer [COMPUT SCI] A section of computer storage that contains a representation of the information that appears on an electronic display. Abbreviated SIB. { 'skrēn ˈim·ij ˌbəf·ər }

screening *See* electric shielding. { 'skrēn·iŋ }

screen memory [COMPUT SCI] The portion of a microcomputer storage that is reserved for setting up screen formats. { 'skrēn ˈmem·rē }

screen overlay [COMPUT SCI] **1.** An array of cells on a video display screen that allow a user to command a computer by touching buttons displayed on the screen at the locations of the cells. **2.** A window of data that is temporarily displayed on a screen, leaving the original display intact when the window is removed. { ˈskrēn 'ō·vərˌlā }

screen painter *See* screen formatter. { 'skrēn ˌpān·tər }

screen saver [COMPUT SCI] A program that launches when a computer is not in use for a predetermined period, displaying various transient or moving images on a computer screen. Originally used to prevent computer screen damage from prolonged display of a static image, screen savers are now more of an amusement or security feature as modern monitors are less susceptible to screen burning. { 'skrēn ˌsāv·ər }

screen shot [COMPUT SCI] A digital image or file containing all or part of what is seen on a computer display. Also known as screen capture. { 'skrēn ˌshät }

scribing [ELECTR] Cutting a grid pattern of deep grooves with a diamond-tipped tool in a slice of semiconductor material containing a number of devices, so that the slice can be easily broken into individual chips. { 'skrīb·iŋ }

script [COMPUT SCI] An executable list of commands written in a programming language. { skript }

scripting language [COMPUT SCI] An interpreted language (for example, JavaScript and Perl) used to write simple programs, called scripts. { 'skrip·tiŋ ˌlaŋ·gwij }

scroll [COMPUT SCI] To move information in an electronic display up, down, left, or right, so that new information appears and some of the existing information is moved away. { skrōl }

scroll arrow [COMPUT SCI] An arrow on a video display screen that is clicked in order to scroll the screen in the corresponding direction. { 'skrōl ˌa·rō }

scroll bar [COMPUT SCI] A horizontal or vertical bar that contains a box that is clicked and dragged up, down, left, or right in order to scroll the screen. { 'skrōl ˌbär }

scrolling [COMPUT SCI] The continuous movement of information either vertically or horizontally on a video screen. { 'skrōl·iŋ }

scrub [COMPUT SCI] To examine a large amount of data and eliminate duplicate or unneeded items. { skrəb }

SCS *See* silicon controlled switch.

SCSI *See* small computer system interface. { 'skəz·ē }

scuzzy *See* small computer system interface. { 'skəz·ē }

SDARS *See* Satellite Digital Audio Radio Service.

SDFL *See* Schottky-diode FET logic.

SDHT *See* high-electron-mobility transistor.

SDMA *See* space-division multiple access.

SDRAM *See* synchronous dynamic random access memory. { ˌesˌdē'ram }

SDTV *See* standard definition television.

sea clutter [ELECTROMAG] A clutter on an airborne radar due to reflection of signals from the sea. Also known as sea return; wave clutter. { 'sē ˌklәd·ər }

sealed-beam headlight [ELEC] A headlight in which the filament, reflector, and lens are contained in a single sealed unit. { ˌsēld ˌbēm 'headˌlīt }

sealed tube [ELECTR] Electron tube which is hermetically sealed. { 'sēld 'tüb }

sealing compound [ELEC] A compound used in dry batteries, capacitor blocks, transformers, and other components to keep out air and moisture. { 'sēl·iŋ ˌkäm,paůnd }

seamless integration [COMPUT SCI] The addition of a routine or program that works smoothly with an existing system and can be activated and used as if it had been built into the system when the system was put together. { ˈsēm·ləs ˌint·əˈgrā·shən }

search [COMPUT SCI] To seek a desired item or condition in a set of related or similar items or conditions, especially a sequentially organized or nonorganized set, rather than a multidimensional set. [ENG] To explore a region in space with radar. { sərch }

search antenna [ELECTROMAG] A radar antenna or antenna system designed for search. { 'sərch anˌten·ə }

search argument [COMPUT SCI] The item or condition that is desired in a search procedure. { 'sərch ˌar·gyə·mənt }

search engine [COMPUT SCI] **1.** Any software that locates and retrieves information in a database.

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2. A server with a stored index of Web pages that is capable of returning lists of pages that match keyword queries. ['sərch ,en·jən]

search field [COMPUT SCI] A field in a record or segment whose value is examined in a search. ['sərch ,fēld]

search gate [ELECTR] A gate pulse used to search back and forth over a certain range. ['sərch ,gāt]

searching lighting *See* horizontal scanning. ['sərch·iŋ ,līd·iŋ]

search key [COMPUT SCI] A data item, or the value of a data item, that is used in carrying out a search. ['sərch ,kē]

search time [COMPUT SCI] Time required to locate a particular field of data in a computer storage device; requires a comparison of each field with a predetermined standard until an identity is obtained. ['sərch ,tīm]

sea return *See* sea clutter. ['sē ri,tərn]

seasonal factors [COMMUN] Factors that are used to adjust skywave absorption data for seasonal variations; these variations are due primarily to seasonal fluctuations in the heights of the ionospheric layers. ['sēz·ən·əl 'fak·tərz]

seasoning [ELECTR] Overcoming a temporary unsteadiness of a component that may appear when it is first installed. ['sēz·ən·iŋ]

SEC *See* secondary-electron conduction.

secondary [ELEC] Low-voltage conductors of a power distributing system. ['sek·ən,der·ē]

secondary allocation [COMPUT SCI] An area of disk storage that is assigned to a file which has become too large for the area originally assigned to it. ['sek·ən,der·ē ,al·ə'kā·shən]

secondary battery *See* storage battery. ['sek·ən ,der·ē 'bad·ə·rē]

secondary cache [COMPUT SCI] High-speed memory between the primary cache and main memory that supplies the processor with the most frequently requested data and instructions. Also known as level 2 cache. [,sek·ən,der·ē 'kash]

secondary cell *See* storage cell. ['sek·ən,der·ē 'sel]

secondary circuit [ELEC] The wiring connected to the secondary winding of a transformer, induction coil, or similar device. ['sek·ən,der·ē 'sər·kət]

secondary electron [ELECTR] **1.** An electron emitted as a result of bombardment of a material by an incident electron. **2.** An electron whose motion is due to a transfer of momentum from primary radiation. ['sek·ən,der·ē i'lek,trän]

secondary-electron conduction [ELECTR] Transport of charge by secondary electrons moving through the interstices of a porous material under the influence of an externally applied electric field. Abbreviated SEC. ['sek·ən,der·ē i'lek,trän kən,dək·shən]

secondary emission [ELECTR] The emission of electrons from the surface of a solid or liquid into a vacuum as a result of bombardment by electrons or other charged particles. ['sek·ən ,der·ē i'mish·ən]

secondary grid emission [ELECTR] Electron emission from a grid resulting directly from bombardment of its surface by electrons or other charged particles. ['sek·ən,der·ē 'grid i,mish·ən]

secondary index [COMPUT SCI] An index that provides an alternate method of accessing records or portions of records in a data base or file. Also known as alternate index. ['sek·ən,der·ē 'in,deks]

secondary key [COMPUT SCI] A key that holds the physical location of a record or a portion of a record in a file or database, and provides an alternative means of accessing data. Also known as alternate key. ['sek·ən,der·ē 'kē]

secondary lobe *See* minor lobe. ['sek·ən,der·ē 'lōb]

secondary photocurrent [ELECTR] A photocurrent resulting from ohmic contacts that are able to replenish charge carriers which pass out of the opposite contact in order to maintain charge neutrality, and whose maximum gain is much greater than unity. ['sek·ən,der·ē 'fōd·ō,kə·rənt]

secondary radar [ELECTR] A radar system in which the transmitted signal from its interrogator causes a transponder borne by a cooperative aircraft to transmit a response on a separate frequency that is received and interpreted by the interrogating radar. ['sek·ən,der·ē 'rā,där]

secondary station [COMMUN] Any station in a radio network other than the net control station. ['sek·ən,der·ē 'stā·shən]

secondary storage [COMPUT SCI] Any means of storing and retrieving data external to the main computer itself but accessible to the program. ['sek·ən,der·ē 'stȯr·ij]

second breakdown [ELECTR] Destructive breakdown in a transistor, wherein structural imperfections cause localized current concentrations and uncontrollable generation and multiplication of current carriers; reaction occurs so suddenly that the thermal time constant of the collector regions is exceeded, and the transistor is irreversibly damaged. ['sek·ənd 'brāk,daün]

second-channel interference *See* alternate-channel interference. ['sek·ənd ¦chan·əl ,in·tər'fir·əns]

second detector [ELECTR] The detector that separates the intelligence signal from the intermediate-frequency signal in a superheterodyne receiver. ['sek·ənd di'tek·tər]

second-generation computer [COMPUT SCI] A computer characterized by the use of transistors rather than vacuum tubes, the execution of input/output operations simultaneously with calculations, and the use of operating systems. ['sek·ənd ¦jen·ə¦rā·shən kəm'pyüd·ər]

second-order subroutine [COMPUT SCI] A subroutine that is entered from another subroutine, in contrast to a first-order subroutine; it constitutes the second level of a two-level or higher-level routine. Also known as second-remove subroutine. ['sek·ənd ¦ór·dər 'səb·rü,tēn]

second-remove subroutine *See* second-order subroutine. ['sek·ənd ri¦müv 'səb·rü,tēn]

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second-time-around echo [ELECTR] A radar echo received from one pulse after the transmission of a subsequent pulse and liable to be associated with the latter, giving an erroneous indication of range. { 'sek·ənd ¦tīm ə'raund ˌek·ō }

second-trip echo *See* second-time-around echo. { 'sek·ənd ¦trip ˌek·ō }

secrecy system *See* privacy system. { 'sē·krə·sē ˌsis·təm }

secret-key algorithm [COMPUT SCI] A cryptographic algorithm which uses the same cryptographic key for encryption and decryption, requiring that the key first be transmitted from the sender to the recipient via a secure channel. { ˌsē·krət ˌkē 'al·gəˌrith·əm }

section [COMMUN] Each individual transmission span in a radio relay system; a system has one more section than it has repeaters. { 'sek·shən }

sectional center [COMMUN] A long-distance telephone office which connects several primary centers and which is in class number 2; only a regional center has greater importance in routing telephone calls. Abbreviated SC. { 'sek·shən·əl 'sen·tər }

sectionalized vertical antenna [ELECTROMAG] Vertical antenna that is insulated at one or more points along its length; the insertion of suitable reactances or applications of a driving voltage across the insulated points results in a modified current distribution giving a more desired radiation pattern in the vertical plane. { 'sek·shən·əl,īzd 'vərd·ə·kəl anˌten·ə }

sectional radiography [ELECTR] The technique of making radiographs of plane sections of a body or an object; its purpose is to show detail in a predetermined plane of the body, while blurring the images of structures in other planes. Also known as laminography; planigraphy; tomography. { 'sek·shən·əl ˌrād·ē'äg·rə·fē }

sector [COMPUT SCI] **1.** A portion of a track on a magnetic disk or a band on a magnetic drum. **2.** A unit of data stored in such a portion. [ELECTROMAG] Coverage of a radar as measured in azimuth. { 'sek·tər }

sectoral horn [ELECTROMAG] Horn with two opposite sides parallel and the two remaining sides which diverge. { 'sek·tə·rəl 'hȯrn }

sector display [ELECTR] A display in which only a sector of the total service area of a radar system is shown; usually the sector is selectable. { 'sek·tər diˌsplā }

sector interleave [COMPUT SCI] A sequence indicating the order in which sectors are arranged on a hard disk, generally so as to minimize access times. Also known as sector map. { 'sek·tər 'in·tərˌlēv }

sector map *See* sector interleave. { 'sek·tərˌmap }

sector mark [COMPUT SCI] A location on each sector of each track of a disk pack or floppy disk that gives the sector's address, tells whether the sector is in use, and gives other control information. { 'sek·tərˌmärk }

sector scan [ELECTR] A radar scan through a limited angle, as distinguished from complete rotation. { 'sek·tərˌskan }

secure visual communications [COMMUN] The transmission of an encrypted digital signal consisting of animated visual and audio information; the distance may vary from a few hundred feet to thousands of miles. { si'kyůr 'vizh·ə·wəl kə ˌmyü·nə'kā·shənz }

secure voice [COMMUN] Voice message that is scrambled or coded, therefore not transmitted in the clear. { si'kyůr 'vȯis }

security [COMPUT SCI] The existence and enforcement of techniques which restrict access to data and the conditions under which data may be obtained. { si'kyůr·əd·ē }

security kernel [COMPUT SCI] A portion of an operating system into which all security-related functions have been concentrated, forming a small, certifiably secure nucleus which is separate from the rest of the system. { si'kyůr·əd·ē ˌkər·nəl }

security perimeter [COMPUT SCI] A logical boundary of a distributed computer system, surrounding all the resources that are controlled and protected by the system. { sə'kyůr·əd·ē pə ˌrim·əd·ər }

security target [COMPUT SCI] A description of a product meeting the security and functionality requirements of a computing system. { sə'kyůr·əd·ē ˌtär·gət }

Seebeck coefficient [ELECTR] The ratio of the open-circuit voltage to the temperature difference between the hot and cold junctions of a circuit exhibiting the Seebeck effect. { 'zāˌbek ˌkō·i'fish·ənt }

Seebeck effect [ELECTR] The development of a voltage due to differences in temperature between two junctions of dissimilar metals in the same circuit. { 'zāˌbek iˌfekt }

seed [COMPUT SCI] An initial number used by an algorithm such as a random number generator. { sēd }

seeding [ELECTR] The introduction of atoms with a low ionization potential into a hot gas to increase electrical conductivity. { 'sēd·iŋ }

seek [COMPUT SCI] **1.** To position the access mechanism of a random-access storage device at a designated location or position. **2.** The command that directs the positioning to take place. { sēk }

seek area [COMPUT SCI] An area of a direct-access storage device, such as a magnetic disk file, assigned to hold records to which rapid access is needed, and located so that the physical characteristics of the device permit such access. Also known as cylinder. { 'sēk ˌer·ē·ə }

seek time [COMPUT SCI] The time required for the access mechanism of a random-access storage device to be properly positioned. { 'sēk ˌtīm }

segment [COMPUT SCI] **1.** A single section of an overlay program structure, which can be loaded into the main memory when and as needed. **2.** In some direct-access storage devices, a hardware-defined portion of a track having fixed data capacity. { 'seg·mənt }

segmentation [COMMUN] The division of a long communications message into smaller messages

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that can be transmitted intermittently. [COMPUT SCI] **1.** The division of virtual storage into identifiable functional regions, each having enough addresses so that programs or data stored in them will not assign the same addresses more than once. **2.** The division of a large computer program into smaller units, called segments. *See* picture segmentation. { ˌseg·mənˈtā·shən }

segmented aperture-synthetic aperture radar [ENG] An enhancement of synthetic aperture radar that overcomes restrictions on the effective length of the receiving antenna by using a receiving antenna array composed of a set of contiguous subarrays and employing signal processing to provide the proper phase corrections for each subarray. Abbreviated SASAR. { ˈseg ˌment·əd ˌap·ə·chər sinˈthed·ik ˌap·ə·chərˈrāˌdär }

segment mark [COMPUT SCI] A special character written on tape to separate one section of a tape file from another. { ˈseg·mənt ˌmärk }

select [COMPUT SCI] **1.** To choose a needed subroutine from a file of subroutines. **2.** To take one alternative if the report on a condition is of one state, and another alternative if the report on the condition is of another state. **3.** To pull from a mass of data certain items that require special attention. { siˈlekt }

select bit [COMPUT SCI] The bit (or bits) in an input/output instruction word which selects the function of a specified device. Also known as subdevice bit. { siˈlekt ˌbit }

selecting circuit [ELEC] A simple switching circuit that receives the identity (the address) of a particular item and selects that item from among a number of similar ones. { siˈlek·tiŋ ˌsər·kət }

selection [COMMUN] The process of addressing a call to a specific station in a selective calling system. { siˈlek·shən }

selection check [COMPUT SCI] Electronic computer check, usually automatic, to verify that the correct register, or other device, is selected in the performance of an instruction. { siˈlek·shən ˌchek }

selection sort [COMPUT SCI] A sorting routine that scans a list of items repeatedly and, on each pass, selects the item with the lowest value and places it in its final position. { siˈlek·shən ˌsȯrt }

selective absorption [ELECTROMAG] A greater absorption of electromagnetic radiation at some wavelengths (or frequencies) than at others. { siˈlek·tiv abˈsȯrp·shən }

selective calling system [COMMUN] A radio communications system in which the central station transmits a coded call that activates only the receiver to which that code is assigned. { siˈlek·tiv ˌkȯl·iŋ ˌsis·təm }

selective circuit [ELEC] A circuit that transmits certain types of signals and fails to transmit or attenuates others. { siˈlek·tiv ˈsər·kət }

selective dump [COMPUT SCI] An edited or nonedited listing of the contents of selected areas of memory or auxiliary storage. { siˈlek·tiv ˈdəmp }

selective fading [COMMUN] Fading that is different at different frequencies in a frequency band occupied by a modulated wave, causing distortion that varies in nature from instant to instant. { siˈlek·tiv ˈfād·iŋ }

selective identification feature [ELECTR] Airborne pulse-type transponder which provides automatic selective identification of aircraft in which it is installed to ground, shipboard, or airborne recognition installations. { siˈlek·tiv ī ˌden·tə·fəˈkā·shən ˌfē·chər }

selective interference [COMMUN] Interference whose energy is concentrated in a narrow band of frequencies. { siˈlek·tiv ˌin·tərˈfir·əns }

selective jamming [ELECTR] Jamming in which only a single radio channel is jammed. { siˈlek·tiv ˈjam·iŋ }

selectively doped heterojunction transistor *See* high-electron-mobility transistor. { siˈlek·tiv·lē ¦dōpt ¦hed·ə·rōˌjəŋk·shən tranˈzis·tər }

selective photoelectric effect [ELECTR] A resonance in the dependence of photoemission on the incident photon energy that is displayed when light is incident on a thin-metal film and the light vector has a component perpendicular to a crystal plane. Also known as spectral selective photoelectric effect; vector effect. { siˌlek·tiv ˌfōd·ō·iˈlek·trik iˌfekt }

selective reflection [ELECTROMAG] Reflection of electromagnetic radiation more strongly at some wavelengths (or frequencies) than at others. { siˈlek·tiv riˈflek·shən }

selective ringing [COMMUN] Telephone arrangement on party lines, in which only the bell of the called subscriber rings, with other bells on the party line remaining silent. { siˈlek·tiv ˈriŋ·iŋ }

selective scattering [ELECTROMAG] Scattering of electromagnetic radiation more strongly at some wavelengths than at others. { siˈlek·tiv ˈskad·ə·riŋ }

selective trace [COMPUT SCI] A tracing routine wherein only instructions satisfying certain specified criteria are subject to tracing. { siˈlek·tiv ˈtrās }

selectivity [ELECTR] **1.** The ability of a radio receiver to separate a desired signal frequency from other signal frequencies, some of which may differ only slightly from the desired value. **2.** The inverse of the shape factor of a bandpass filter. { səˌlekˈtiv·əd·ē }

selector [COMPUT SCI] Computer device which interrogates a condition and initiates a particular operation dependent upon the report. [ELEC] An automatic or other device for making connections to any one of a number of circuits, such as a selector relay or selector switch. { siˈlek·tər }

selector channel [COMPUT SCI] A unit which connects high-speed input/output devices, such as magnetic tapes, disks, and drums, to a computer memory. { siˈlek·tər ˌchan·əl }

selector switch [ELEC] A manually operated multiposition switch. Also called multiple-contact switch. { siˈlek·tər ˌswich }

selenium cell [ELECTR] A photoconductive cell in which a thin film of selenium is used between suitable electrodes; the resistance of the cell decreases when the illumination is increased. { səˈlē·nē·əm ˌsel }

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selenium diode [ELECTR] A small area selenium rectifier which has characteristics similar to those of selenium rectifiers used in power systems. { sə'lē·nē·əm 'dī,ōd }

selenium rectifier [ELECTR] A metallic rectifier in which a thin layer of selenium is deposited on one side of an aluminum plate and a conductive metal coating is deposited on the selenium. { sə'lē·nē·əm 'rek·tə,fī·ər }

self-adapting system [SYS ENG] A system which has the ability to modify itself in response to changes in its environment. { ¦self ə¦dap·tiŋ 'sis·təm }

self-adjusting communications *See* adaptive communications. { ¦self ə¦jəst·iŋ kə¸myü·nə'kā·shənz }

self-bias [ELECTR] A grid bias provided automatically by the resistor in the cathode or grid circuit of an electron tube; the resulting voltage drop across the resistor serves as the grid bias. Also known as automatic C bias; automatic grid bias. { ¦self ¦bī·əs }

self-bias transistor circuit [ELECTR] A transistor with a resistance in the emitter lead that gives rise to a voltage drop which is in the direction to reverse-bias the emitter junction; the circuit can be used even if there is zero direct-current resistance in series with the collector terminal. { ¦self ¦bī·əs tran'zis·tər ¸sər·kət }

self-checking code [COMPUT SCI] An encoding of data so designed and constructed that an invalid code can be rapidly detected; this permits the detection, but not the correction, of almost all errors. Also known as error-checking code; error-detecting code. { 'self ¦chek·iŋ 'kōd }

self-checking number [COMPUT SCI] A number with a suffix figure related to the figure of the number, used to check the number after it has been transferred from one medium or device to another. { 'self ¦chek·iŋ 'nəm·bər }

self-cleaning contact *See* wiping contact. { self 'klēn·iŋ 'kän,takt }

self-complementing code [COMPUT SCI] A binary-coded-decimal code in which the combination for the complement of a digit is the complement of the combination for that digit. { ¦self ¦käm·plə¸ment·iŋ 'kōd }

self-contained database management system [COMPUT SCI] A database management system that is in no way an extension of any programming language, and is usually quite independent of any language. { ¦self kən¦tānd ¦dad·ə¦bās 'man·ij·mənt ¸sis·təm }

self-diagnostic routine [COMPUT SCI] A test of an electronic device that is performed automatically, usually when the device is turned on. Also known as self-test. { ¦self ¸dī·əg¦näs·tik rü'tēn }

self-documenting code [COMPUT SCI] A sequence of programming statements that are simple and straightforward and can be readily implemented by another programmer. { ¦self ¸däk·yə¸ment·iŋ 'kōd }

self-excited [ELEC] Operating without an external source of alternating-current power. { ¦self ik'sīd·əd }

self-excited oscillator [ELECTR] An oscillator that depends on its own resonant circuits for initiation of oscillation and frequency determination. { ¦self ik'sīd·əd 'äs·ə¸lād·ər }

self-extracting file [COMPUT SCI] A compressed (zipped) file that unzips itself when it is executed. { ¸self ik¸strak·tiŋ 'fīl }

self-healing dielectric breakdown [ELECTR] A dielectric breakdown in which the breakdown process itself causes the material to become insulating again. { ¦self ¦hēl·iŋ ¸dī·ə¦lek·trik 'brāk¸daün }

self-impedance *See* mesh impedance. { ¦self im ¦pēd·əns }

self-optimizing communications *See* adaptive communications. { ¦self ¦äp·tə¸mīz·iŋ kə¸myü·nə'kā·shənz }

self-pulsing [ELECTR] Special type of grid pulsing which automatically stops and starts the oscillations at the pulsing rate by a special circuit. { 'self ¦pəls·iŋ }

self-quenched detector [ELECTR] Superregenerative detector in which the time constant of the grid leak and grid capacitor is sufficiently large to cause intermittent oscillation above audio frequencies, serving to stop normal regeneration each time just before it spills over into a squealing condition. { 'self ¦kwencht di'tek·tər }

self-quenching oscillator [ELECTR] Oscillator producing a series of short trains of radio-frequency oscillations separated by intervals of quietness. { 'self ¦kwench·iŋ 'äs·ə¸lād·ər }

self-repair [COMPUT SCI] Any type of hardware redundancy in which faults are selectively masked and are detected, located, and subsequently corrected by the replacement of the failed unit by an unfailed replica. { ¦self ri¦per }

self-reset [ELEC] Automatically returning to the original position when normal conditions are resumed; applied chiefly to relays and circuit breakers. { ¦self 'rē¸set }

self-resetting loop [COMPUT SCI] A loop whose termination causes the numbers stored in all locations affected by the loop to be returned to the original values which they had upon entry into the loop. { ¦self ri¦sed·iŋ 'lüp }

self-saturation [ELECTR] The connection of half-wave rectifiers in series with the output windings of the saturable reactors of a magnetic amplifier, to give higher gain and faster response. { ¦self ¸sach·ə¦rā·shən }

self-scanned image sensor [ELECTR] A solid-state device, still in the early stages of development, which converts an optical image into a television signal without the use of an electron beam; it consists of an array of photoconductor diodes, each located at the intersection of mutually perpendicular address strips respectively connected to horizontal and vertical scan generators and video coupling circuits. { 'self ¦skand 'im·ij ¸sen·sər }

self-starting synchronous motor [ELEC] A synchronous motor provided with the equivalent of a squirrel-cage winding, to permit starting as an induction motor. { 'self ¦stärd·iŋ 'siŋ·krə·nəs 'mōd·ər }

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self-steering microwave array [ELECTROMAG] An antenna array used with electronic circuitry that senses the phase of incoming pilot signals and positions the antenna beam in their direction of arrival. { 'self ¦stir·iŋ 'mī·krō,wāv ə'rā }

self-synchronous device *See* synchro. { ¦self ¦siŋ·krə·nəs di'vīs }

self-synchronous repeater *See* synchro. { ¦self ¦siŋ·krə·nəs ri'pēd·ər }

self-test *See* self-diagnostic routine. { 'self ¦test }

self-triggering program [COMPUT SCI] A computer program which automatically commences execution as soon as it is fed into the central processing unit. { ¦self ¦trig·ə·riŋ 'prō·gram }

self-tuning regulator [CONT SYS] A type of adaptive control system composed of two loops, an inner loop which consists of the process and an ordinary linear feedback regulator, and an outer loop which is composed of a recursive parameter estimator and a design calculation, and which adjusts the parameters of the regulator. Abbreviated STR. { ¦self ¦tün·iŋ 'reg·yə,lād·ər }

selsyn *See* synchro. { 'sel·sin }

selsyn generator *See* synchro transmitter. { 'sel·sin ¦jen·ə,rād·ər }

selsyn motor *See* synchro receiver. { 'sel·sin ,mōd·ər }

selsyn receiver *See* synchro receiver. { 'sel·sin ri,sē·vər }

selsyn system *See* synchro system. { 'sel·sin ,sis·təm }

selysn transmitter *See* synchro transmitter. { 'sel·sin tranz,mid·ər }

SEM *See* scanning electron microscope.

semantic analysis [COMPUT SCI] A phase of natural language processing, following parsing, that involves extraction of context-independent aspects of a sentence's meaning, including the semantic roles of entities mentioned in the sentence, and quantification information, such as cardinality, iteration, and dependency. { si'man·tik ə'nal·ə·səs }

semantic error [COMPUT SCI] The use of an incorrect symbolic name in a computer program. { si'man·tik 'er·ər }

semantic extension [COMPUT SCI] An extension mechanism which introduces new kinds of objects into an extensible language, such as additional data types or operations. { si'man·tik ik'sten·shən }

semantic gap [COMPUT SCI] The difference between a data or language structure and the objects that it models. { si'man·tik 'gap }

semaphore [COMPUT SCI] A memory cell that is shared by two parallel processes which rely on each other for their continued operation, and that provides an elementary form of communication between them by indicating when significant events have taken place. { 'sem·ə,fōr }

semialgorithm [COMPUT SCI] A procedure for solving a problem that will continue endlessly if the problem has no solution. { ,sem·ē'al·gə ,rith·əm }

semiautomatic telephone system [COMMUN] Telephone system that limits automatic dialing to only those subscribers who are served by the same exchange as the calling subscriber. { ¦sem·ē,ȯd·ə'mad·ik 'tel·ə,fōn ,sis·təm }

semiconducting compound [SOLID STATE] A compound which is a semiconductor, such as copper oxide, mercury indium telluride, zinc sulfide, cadmium selenide, and magnesium iodide. { ¦sem·i·kən¦dək·tiŋ 'käm,paünd }

semiconducting crystal [SOLID STATE] A crystal of a semiconductor, such as silicon, germanium, or gray tin. { ¦sem·i·kən¦dək·tiŋ ¦krist·əl }

semiconductor [ELECTR] A solid crystalline material whose conductivity is intermediate between that of a metal and an insulator and may depend on temperature or voltage; by making suitable contacts to the material or by making the material suitably inhomogenous, electrical rectification and amplification may be obtained. { ¦sem·i·kən¦dək·tər }

semiconductor device [ELECTR] Electronic device in which the characteristic distinguishing electronic conduction takes place within a semiconductor. { ¦sem·i·kən¦dək·tər di,vīs }

semiconductor diode [ELECTR] **1.** A two-electrode semiconductor device that utilizes the rectifying properties of a *pn* junction or a point contact. **2.** More generally, any two-terminal electronic device that utilizes the properties of the semiconductor from which it is constructed. Also known as crystal diode; crystal rectifier; diode. { ¦sem·i·kən¦dək·tər 'dī,ōd }

semiconductor-diode parametric amplifier [ELECTR] Parametric amplifier using one or more varactors. { ¦sem·i·kən¦dək·tər ¦dī,ōd ¦par·ə¦me·trik 'am·plə ,fī·ər }

semiconductor disk [COMPUT SCI] A large semiconductor memory that imitates a disk drive in that the operating system can read and write to it as though it were an ordinary disk, but at a much faster rate. Also known as nonrotating disk. { 'sem·i·kən,dək·tər ,disk }

semiconductor doping *See* doping. { ¦sem·i·kən ¦dək·tər 'dōp·iŋ }

semiconductor heterostructure [ELECTR] A structure of two different semiconductors in junction contact having useful electrical or electrooptical characteristics not achievable in either conductor separately; used in certain types of lasers and solar cells. { ¦sem·i·kən¦dək·tər 'hed·ə·rō,strək·chər }

semiconductor junction [ELECTR] Region of transition between semiconducting regions of different electrical properties, usually between *p*-type and *n*-type material. { ¦sem·i·kən¦dək·tər ,jəŋk·shən }

semiconductor laser [OPTICS] A laser in which stimulated emission of coherent light occurs at a *pn* junction when electrons and holes are driven into the junction by carrier injection, electron-beam excitation, impact ionization, optical excitation, or other means; used as light transmitters

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and modulators in optical communications and integrated optics. Also known as diode laser; laser diode. { ¦sem·i·kən¦dək·tər 'lā·zər }

semiconductor memory [COMPUT SCI] A device for storing digital information that is fabricated by using integrated circuit technology. Also known as integrated-circuit memory; large-scale integrated memory; memory chip; semiconductor storage; transistor memory. { ¦sem·i·kən ¦dək·tər ˌmem·rē }

semiconductor rectifier *See* metallic rectifier. { ¦sem·i·kən¦dək·tər 'rek·təˌfī·ər }

semiconductor storage *See* semiconductor memory. { 'sem·i·kənˌdək·tər ˌstór·ij }

semiconductor thermocouple [ELECTR] A thermocouple made of a semiconductor, which offers the prospect of operation with high-temperature gradients, because semiconductors are good electrical conductors but poor heat conductors. { ¦sem·i·kən¦dək·tər 'thər·məˌkəp·əl }

semidense list [COMPUT SCI] A list that can be divided into two contiguous portions, with all the cells in the larger portion filled and all the other cells empty. { ¦sem·i'dens 'list }

semimagnetic controller [ELEC] Electrical controller having only part of its basic functions performed by devices that are operated by electromagnets. { ¦sem·i·mag'ned·ik kən'trōl·ər }

seminumerical algebraic manipulation language [COMPUT SCI] The most elementary type of algebraic manipulation language, constructed to manipulate data from rigid classes of mathematical objects possessing strictly canonical forms. { ¦sem·i·nü'mer·ə·kəl ˌal·jə'brā·ik mə ˌnip·yə'lā·shən ˌlaŋ·gwij }

semiselective ringing [COMMUN] In telephone service, party line ringing wherein the bells of two stations are rung simultaneously; the differentiation is made by the number of rings. { ¦sem·i·si'lek·tiv 'riŋ·iŋ }

semitransparent photocathode [ELECTR] Photocathode in which radiant flux incident on one side produces photoelectric emission from the opposite side. { ¦sem·i·tranz'par·ənt ¦fōd·ō'kath ˌōd }

sender [COMMUN] Part of an automatic-switching telephone system that receives pulses from a dial or other source and, in accordance with them, controls the further operations necessary in establishing a telephone connection. { 'sen·dər }

sending-end impedance [ELEC] Ratio of an applied potential difference to the resultant current at the point where the potential difference is applied; the sending-end impedance of a line is synonymous with the driving-point impedance of the line. { 'send·iŋ ¦end im'pēd·əns }

sense amplifier [ELECTR] Circuit used to determine either a phase or voltage change in communications-electronics equipment and to provide automatic control function. { 'sens ˌam·pləˌfī·ər }

sense antenna [ELECTROMAG] An auxiliary antenna used with a directional receiving antenna to resolve a 180° ambiguity in the directional indication. Also known as sensing antenna. { 'sens anˌten·ə }

sense light [COMPUT SCI] A light which can be turned on or off, its status being the determinant as to which path a program will select. { 'sens ˌlīt }

sensing antenna *See* sense antenna. { 'sen·siŋ anˌten·ə }

sensing element *See* sensor. { 'sen·siŋ ˌel·ə·mənt }

sensing signal [COMMUN] A special signal that is transmitted to alert the receiving station at the beginning of a message. { 'sen·siŋ ˌsig·nəl }

sensistor [ELECTR] Silicon resistor whose resistance varies with temperature, power, and time. { sen'zis·tər }

sensitive data [COMPUT SCI] Data that can be read or processed in specified transactions by a specified program, device, or user. { 'sen·səd·iv 'dad·ə }

sensitive switch *See* snap-action switch. { 'sen·səd·iv 'swich }

sensitivity [ELECTR] **1.** The minimum input signal required to produce a specified output signal, for a radio receiver or similar device. **2.** Of a camera tube, the signal current developed per unit incident radiation, that is, per watt per unit area. { ˌsen·sə'tiv·əd·ē }

sensitivity function [CONT SYS] The ratio of the fractional change in the system response of a feedback-compensated feedback control system to the fractional change in an open-loop parameter, for some specified parameter variation. { ˌsen·sə'tiv·əd·ē ˌfəŋk·shən }

sensitivity time control [ELECTR] A controlled reduction in sensitivity of a radar receiver immediately after the transmission of a pulse, with a programmed restoration of full sensitivity as returns come from greater ranges; done to prevent the reception of a multitude of tiny targets close to the radar, such as birds and insects, and to prevent receiver saturation by large targets at very short range. { ˌsen·sə'tiv·əd·ē 'tīm kənˌtrōl }

sensitization *See* activation. { ˌsen·səd·ə'zā·shən }

sensor [ENG] The generic name for a device that senses either the absolute value or a change in a physical quantity such as temperature, pressure, flow rate, or pH, or the intensity of light, sound, or radio waves and converts that change into a useful input signal for an information-gathering system; a television camera is therefore a sensor, and a transducer is a special type of sensor. Also known as primary detector; sensing element. { 'sen·sər }

sensory control [CONT SYS] Control of a robot's actions on the basis of its sensor readings. { 'sen·sə·rē kən'trōl }

sensory controlled robot [CONT SYS] A robot whose programmed sequence of instructions can be modified by information about the environment received by the robot's sensors. { 'sen·sə·rē kən'trōld 'rōˌbät }

sentence [COMPUT SCI] An entire instruction in the COBOL programming language. { 'sent·əns }

sentinel [COMPUT SCI] Symbol marking the beginning or end of an element of computer information such as an item or a tape. { 'sent·ən·əl }

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separately excited [ELEC] Obtaining excitation from a source other than the machine or device itself. { 'sep·rət·lē ik'sīd·əd }

separation [ENG ACOUS] The degree, expressed in decibels, to which left and right stereo channels are isolated from each other. { ˌsep·ə'rā·shən }

separation filter [ELECTR] Combination of filters used to separate one band of frequencies from another. { ˌsep·ə'rā·shən ˌfil·tər }

separation theorem [CONT SYS] A theorem in optimal control theory which states that the solution to the linear quadratic Gaussian problem separates into the optimal deterministic controller (that is, the optimal controller for the corresponding problem without noise) in which the state used is obtained as the output of an optimal state estimator. { ˌsep·ə'rā·shən ˌthir·əm }

separator [COMPUT SCI] A datum or character that denotes the beginning or ending of a unit of data. [ELEC] A porous insulating sheet used between the plates of a storage battery. [ELECTR] A circuit that separates one type of signal from another by clipping, differentiating, or integrating action. { 'sep·əˌrād·ər }

separator page [COMPUT SCI] A page preceding or following a report in a computer printout giving all information needed to identify the report. { 'sep·əˌrād·ər ˌpāj }

sepatrix [CONT SYS] A curve in the phase plane of a control system representing the solution to the equations of motion of the system which would cause the system to move to an unstable point. { 'sep·əˌtriks }

septate coaxial cavity [ELECTROMAG] Coaxial cavity having a vane or septum, added between the inner and outer conductors, so that it acts as a cavity of a rectangular cross section bent transversely. { 'sepˌtāt kō'ak·sē·əl 'kav·əd·ē }

septate waveguide [ELECTROMAG] Waveguide with one or more septa placed across it to control microwave power transmission. { 'sepˌtāt 'wāvˌgīd }

septum [ELECTROMAG] A metal plate placed across a waveguide and attached to the walls by highly conducting joints; the plate usually has one or more windows, or irises, designed to give inductive, capacitive, or resistive characteristics. { 'sep·təm }

sequence [COMPUT SCI] To put a set of symbols into an arbitrarily defined order; that is, to select A if A is greater than or equal to B, or to select B if A is less than B. { 'sē·kwəns }

sequence calling [COMPUT SCI] The instructions used for linking a closed subroutine with a main routine; that is, standard linkage and a list of the parameters. { 'sē·kwəns ˌkól·iŋ }

sequence check [COMPUT SCI] To verify that correct precedence relationships are obeyed, usually by checking for ascending sequence numbers. { 'sē·kwəns ˌchek }

sequence checking routine [COMPUT SCI] In computers, a checking routine which records specified data regarding the operations resulting from each instruction. { 'sē·kwəns ˌchek·iŋ rüˌtēn }

sequence counter See instruction counter. { 'sē·kwəns ˌkaùnt·ər }

sequence error [COMPUT SCI] An error that arises when the arrangement of items in a set does not follow some specified order. { 'sē·kwəns ˌer·ər }

sequence monitor [COMPUT SCI] The automatic step-by-step check by a computer of the manual actions required for the starting and shutdown of a computer. { 'sē·kwəns ˌmän·əd·ər }

sequence number [COMPUT SCI] A number assigned to an item to indicate its relative position in a series of related items. { 'sē·kwəns ˌnəm·bər }

sequence pointer [COMPUT SCI] For a list that is stored in computer memory, the portion of a list item that gives the storage location of the subsequent item on the list (or the locations of the subsequent and previous items of a symmetric list). Also known as sequencing pointer. { 'sē·kwəns 'pòint·ər }

sequencer [COMPUT SCI] A machine which puts items of information into a particular order, for example, it will determine whether A is greater than, equal to, or less than B, and sort or order accordingly. Also known as sorter. [ENG] A mechanical or electronic device that may be set to initiate a series of events and to make the events follow in a given sequence. { 'sē·kwən·sər }

sequence register [COMPUT SCI] A counter which contains the address of the next instruction to be carried out. { 'sē·kwəns ˌrej·ə·stər }

sequence robot See preprogrammed robot. { 'sē·kwəns ˌrōˌbät }

sequencing equipment [COMMUN] Special selecting device that permits messages received from several teletypewriter circuits to be subsequently selected and retransmitted over a reduced number of trunks or circuits. { 'sē·kwəns·iŋ iˌkwip·mənt }

sequencing pointer See sequence pointer. { 'sē·kwəns·iŋ 'pòint·ər }

sequential access [COMPUT SCI] A process that involves reading or writing data serially and, by extension, a data-recording medium that must be read serially, as a magnetic tape. { si'kwen·chəl 'akˌses }

sequential batch operating system [COMPUT SCI] Software equipment that automatically begins running a new job on a computer system as soon as the current job is completed. { si'kwen·chəl 'bach 'äp·əˌrād·iŋ ˌsis·təm }

sequential circuit [ELEC] A switching circuit whose output depends not only upon the present state of its input, but also on what its input conditions have been in the past. { si'kwen·chəl 'sər·kət }

sequential color television [COMMUN] A color television system in which the primary color components of a picture are transmitted one after the other; the three basic types are the line-sequential, dot-sequential, and field-sequential color television systems. Also known as sequential system. { si'kwen·chəl ¦kəl·ər 'telˌəˌvizh·ən }

sequential control [COMPUT SCI] Manner of operating a computer by feeding orders into the

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computer in a given order during the solution of a problem. { si'kwen·chəl kən'trōl }

sequential logic element [ELECTR] A circuit element having at least one input channel, at least one output channel, and at least one internal state variable, so designed and constructed that the output signals depend on the past and present states of the inputs. { si'kwen·chəl ¦läj·ik ˌel·ə·mənt }

sequential machine [COMPUT SCI] A mathematical model of a certain type of sequential circuit, which has inputs and outputs that can each take on any value from a finite set and are of interest only at certain instants of time, and in which the output depends on previous inputs as well as the concurrent input. { si'kwen·chəl mə'shēn }

sequential network [COMPUT SCI] An idealized model of a sequential circuit that reflects its logical but not its electronic properties. { si'kwen·chəl 'netˌwərk }

sequential operation [COMPUT SCI] The consecutive or serial execution of operations, without any simultaneity or overlap. { si'kwen·chəl ˌäp·ə'rā·shən }

sequential organization [COMPUT SCI] The write and read of records in a physical rather than a logical sequence. { si'kwen·chəl ˌȯr·gə·nə'zā·shən }

sequential processing [COMPUT SCI] Processing items in a collection of data according to some specified sequence of keys, in contrast to serial processing. { si'kwen·chəl 'präˌses·iŋ }

sequential scanning *See* progressive scanning. { si'kwen·chəl 'skan·iŋ }

sequential scheduling system [COMPUT SCI] A first-come, first-served method of selecting jobs to be run. { si'kwen·chəl 'skej·ə·liŋ ˌsis·təm }

sequential search [COMPUT SCI] A procedure for searching a table that consists of starting at some table position (usually the beginning) and comparing the file-record key in hand with each table-record key, one at a time, until either a match is found or all sequential positions have been searched. { si'kwen·chəl 'sərch }

sequential selection [COMMUN] The selection of the elements of a message (such as letters) from a set of possible elements (such as the alphabet), one after another. { si'kwen·chəl si'lek·shən }

sequential system *See* sequential color television. { si'kwen·chəl 'sis·təm }

serial [COMPUT SCI] Pertaining to the internal handling of data in sequential fashion. { 'sir·ē·əl }

serial-access [COMPUT SCI] **1.** Pertaining to memory devices having structures such that data storage sites become accessible for read/write in time-sequential order; circulating memories and magnetic tapes are examples of serial-access memories. **2.** Pertaining to a particular process or program that accesses data items sequentially, without regard to the capability of the memory hardware. **3.** Pertaining to character-by-character transmission from an on-line real-time keyboard. { 'sir·ē·əl 'akˌses }

serial addition [COMPUT SCI] An arithmetic operation in which two numbers are added one digit at a time. { 'sir·ē·əl ə'dish·ən }

serial bit [COMPUT SCI] Digital computer storage in which the individual bits that make up a computer word appear in time sequence. { 'sir·ē·əl ˌbit }

serial communications [COMMUN] The transmission of digital data over a single channel. { 'sir·ē·əl kəˌmyü·nə'kā·shənz }

serial digital computer [COMPUT SCI] A digital computer in which the digits are handled serially, although the bits that make up a digit may be handled either serially or in parallel. { 'sir·ē·əl 'dij·əd·əl kəm'pyüd·ər }

serial dot character printer [COMPUT SCI] A computer printer in which the dot matrix technique is used to print characters, one at a time, with a movable print head that is driven back and forth across the page. { 'sir·ē·əl ¦dät 'kar·ik·tər ˌprint·ər }

serial file [COMPUT SCI] The simplest type of file organization, in which no subsets are defined, no directories are provided, no particular file order is specified, and a search is performed by sequential comparison of the query with identifiers of all stored items. { 'sir·ē·əl 'fīl }

serial input/output [COMPUT SCI] Data that are transmitted into and out of a computer over a single conductor, one bit at a time. { 'sir·ē·əl 'inˌpůt 'aůtˌpůt }

serial interface [COMPUT SCI] A link between a microcomputer and a peripheral device in which data is transmitted over a single conductor, one bit at a time. Also known as serial port. { 'sir·ē·əl 'in·tərˌfās }

serialize [COMPUT SCI] To convert a signal suitable for parallel transmission into a signal suitable for serial transmission, consisting of a sequence of bits. { 'sir·ē·əˌlīz }

serially reusable [COMPUT SCI] An attribute possessed by a program that can be used for several tasks in sequence without having to be reloaded into main memory for each additional use. { 'sir·ē·ə·lē rē'yü·zə·bəl }

serial memory [COMPUT SCI] A computer memory in which data are available only in the same sequence as originally stored. { 'sir·ē·əl 'mem·rē }

serial operation [COMPUT SCI] The flow of information through a computer in time sequence, using only one digit, word, line, or channel at a time. { 'sir·ē·əl ˌäp·ə'rā·shən }

serial-parallel [COMPUT SCI] **1.** A combination of serial and parallel; for example, serial by character, parallel by bits comprising the character. **2.** Descriptive of a device which converts a serial input into a parallel output. { 'sir·ē·əl 'par·əˌlel }

serial-parallel conversion [COMPUT SCI] The transformation of a serial data representation as found on a disk or drum into the parallel data representation as exists in core. { 'sir·ē·əl ¦par·əˌlel kən'vər·zhən }

serial port *See* serial interface. { 'sir·ē·əl ˌpȯrt }

serial processing [COMPUT SCI] Processing items in a collection of data in the order that they appear in a storage device, in contrast to sequential processing. { 'sir·ē·əl 'präˌses·iŋ }

serial processor [COMPUT SCI] A computer in which data are handled sequentially by separate units of the system. { 'sir·ē·əl 'präˌses·ər }

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serial programming [COMPUT SCI] In computers, programming in which only one operation is executed at one time. { 'sir·ē·əl 'prō,gram·iŋ }

serial storage [COMPUT SCI] Computer storage in which time is one of the coordinates used to locate any given bit, character, or word; access time, therefore, includes a variable waiting time, ranging from zero to many word times. { 'sir·ē·əl 'stȯr·ij }

serial transfer [COMPUT SCI] Transfer of the characters of an element of information in sequence over a single path in a digital computer. { 'sir·ē·əl 'tranz·fər }

serial transmission [COMMUN] Transmission of groups of elements of a signal in time intervals that follow each other without overlapping. { 'sir·ē·əl tranz'mish·ən }

series [ELEC] An arrangement of circuit components end to end to form a single path for current. { 'sir·ēz }

series circuit [ELEC] A circuit in which all parts are connected end to end to provide a single path for current. { 'sir·ēz ˌsər·kət }

series compensation [CONT SYS] *See* cascade compensation. [ELEC] The insertion of variable, controlled, high-voltage series capacitors into transmission lines in order to modify the impedance structure of a transmission network so as to adjust the power-flow distribution on individual lines and thus increase the power flow across such compensated lines. { 'sir·ēz ˌkäm·pən'sā·shən }

series connection [ELEC] A connection that forms a series circuit. { 'sir·ēz kəˌnek·shən }

series excitation [ELEC] The obtaining of field excitation in a motor or generator by allowing the armature current to flow through the field winding. { 'sir·ēz ˌek·sə'tā·shən }

series-fed vertical antenna [ELECTROMAG] Vertical antenna which is insulated from the ground and energized at the base. { 'sir·ēz ¦fed 'vərd·i·kəl an'ten·ə }

series feed [ELECTR] Application of the direct-current voltage to the plate or grid of a vacuum tube through the same impedance in which the alternating-current flows. { 'sir·ēz 'fēd }

series generator [ELEC] A generator whose armature winding and field winding are connected in series. Also known as series-wound generator. { 'sir·ēz 'jen·əˌrād·ər }

series loading [ELECTR] Loading in which reactances are inserted in series with the conductors of a transmission circuit. { 'sir·ēz ˌlōd·iŋ }

series modulation [ELECTR] Modulation in which the plate circuits of a modulating tube and a modulated amplifier tube are in series with the same plate voltage supply. { 'sir·ēz ˌmäj·əˈlā·shən }

series motor [ELEC] A commutator-type motor having armature and field windings in series; characteristics are high starting torque, variation of speed with load, and dangerously high speed on no-load. Also known as series-wound motor. { 'sir·ēz ˌmōd·ər }

series multiple [ELEC] Type of switchboard jack arrangement in which a single line circuit appears before two or more operators, all appearances being connected in series. { 'sir·ēz ¦məl·tə·pəl }

series-parallel circuit [ELEC] A circuit in which some of the components or elements are connected in parallel, and one or more of these parallel combinations are in series with other components of the circuit. { 'sir·ēz ¦par·əˌlel ¦sər·kət }

series-parallel control [ELEC] A method of controlling the speed of electric motors in which the motors, or groups of motors, are connected in series at some times and in parallel at other times. { 'sir·ēz ¦par·əˌlel kən¦trōl }

series-parallel switch [ELEC] A switch used to change the connections of lamps or other devices from series to parallel, or vice versa. { 'sir·ēz ¦par·əˌlel ¦swich }

series peaking [ELECTR] Use of a peaking coil and resistor in series as the load for a video amplifier to produce peaking at some desired frequency in the passband, such as to compensate for previous loss of gain at the high-frequency end of the passband. { 'sir·ēz 'pēk·iŋ }

series radio tap [COMMUN] A telephone tapping procedure in which a miniature radio transmitter is inserted in series with one wire of the target pair so that the transmitter derives its power from the telephone central battery. { 'sir·ēz 'rād·ē·ō ˌtap }

series reactor [ELEC] A reactor used in alternating-current power systems for protection against excessively large currents under short-circuit or transient conditions; it consists of coils of heavy insulated cable either cast in concrete columns or supported in rigid frames and mounted on insulators. Also known as current-limiting reactor. { 'sir·ēz rēˌak·tər }

series regulator [ELEC] A regulator that controls output voltage or current by automatically varying a resistance in series with the voltage source. { 'sir·ēz 'reg·yəˌlād·ər }

series repeater [ELEC] A type of negative impedance telephone repeater which is stable when terminated in an open circuit and oscillates when it is connected to a low impedance, in contrast to a shunt repeater. { 'sir·ēz ri'pēd·ər }

series resonance [ELEC] Resonance in a series resonant circuit, wherein the inductive and capacitive reactances are equal at the frequency of the applied voltage; the reactances then cancel each other, reducing the impedance of the circuit to a minimum, purely resistive value. { 'sir·ēz 'rez·ən·əns }

series resonant circuit [ELEC] A resonant circuit in which the capacitor and coil are in series with the applied alternating-current voltage. { 'sir·ēz ¦rez·ən·ənt ˌsər·kət }

series-shunt network *See* ladder network. { 'sir·ēz ¦shənt 'netˌwərk }

series T junction *See* E-plane T junction. { 'sir·ēz 'tē ˌjəŋk·shən }

series transistor regulator [ELECTR] A voltage regulator whose circuit has a transistor in series with the output voltage, a Zener diode, and a resistor chosen so that the Zener diode is

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approximately in the middle of its operating range. { 'sir·ēz tran'zis·tər 'reg·yə,lād·ər }

series-tuned circuit [ELEC] A simple resonant circuit consisting of an inductance and a capacitance connected in series. { 'sir·ēz ¦tünd ,sər·kət }

series winding [ELEC] A winding in which the armature circuit and the field circuit are connected in series with the external circuit. { 'sir·ēz ,wīnd·iŋ }

series-wound generator *See* series generator. { 'sir·ēz ¦waund 'jen·ə,rād·ər }

series-wound motor *See* series motor. { 'sir·ēz ¦waund 'mōd·ər }

serrated pulse [ELECTR] Vertical and horizontal synchronizing pulse divided into a number of small pulses, each of which acts for the duration of half a line in an analog television system. { 'se,rād·əd 'pəls }

serrodyne [ELECTR] Phase modulator using transit time modulation of a traveling-wave tube or klystron. { 'ser·ə,dīn }

server [COMPUT SCI] A computer or software package that sends requested information to a client or clients in a network. { 'sər·vər }

service area [COMMUN] The area that is effectively served by a given radio or television transmitter, navigation aid, or other type of transmitter. Also known as coverage. { 'sər·vəs ,er·ē·ə }

service band [COMMUN] Band of frequencies allocated to a given class of radio service. { 'sər·vəs ,band }

service bit [COMMUN] A bit used in data transmission to monitor the transmission rather than to convey information, such as a request that part of a message be repeated. { 'sər·vəs ,bit }

service bureau [COMPUT SCI] An organization that offers time sharing and software services to its users who communicate with a computer in the bureau from terminals on their premises. { 'sər·vəs ,byůr·ō }

service oscillator *See* radio-frequency signal generator. { 'sər·vəs 'äs·ə,lād·ər }

service program [COMPUT SCI] A computer program that is used in a computer system to support the functioning of the system, such as a librarian or a utility program. { 'sər·vəs ,prō ,gram }

service provider [COMPUT SCI] An organization that provides access to a wide-area network, such as the Internet. { 'sər·vəs prə,vīd·ər }

service routine [COMPUT SCI] A section of a computer code that is used in so many different jobs that it cannot belong to any one job. { 'sər·vəs rü,tēn }

service wires [ELEC] The conductors that bring the electric power into a building. { 'sər·vəs ,wīrz }

servicing time [COMPUT SCI] Machine down-time necessary for routine testing, for machine servicing due to breakdown, or for preventive servicing measures; includes all test time (good or bad) following breakdown and subsequent repair or preventive servicing. { 'sər·vəs·iŋ ,tīm }

serving [ELEC] A covering, such as thread or tape, that protects a winding from mechanical damage. Also known as coil serving. { 'sərv·iŋ }

servo *See* servomotor. { 'sər·vō }

servo amplifier [ELECTR] An amplifier used in a servomechanism. { 'sər·vō 'am·plə,fī·ər }

servolink [CONT SYS] A power amplifier, usually mechanical, by which signals at a low power level are made to operate control surfaces requiring relatively large power inputs, for example, a relay and motor-driven actuator. { 'sər·vō,liŋk }

servo loop *See* single-loop servomechanism. { 'sər·vō ,lüp }

servomechanism [CONT SYS] An automatic feedback control system for mechanical motion; it applies only to those systems in which the controlled quantity or output is mechanical position or one of its derivatives (velocity, acceleration, and so on). Also known as servo system. { ¦sər·vō'mek·ə,niz·əm }

servomotor [CONT SYS] The electric, hydraulic, or other type of motor that serves as the final control element in a servomechanism; it receives power from the amplifier element and drives the load with a linear or rotary motion. Also known as servo. { 'sər·vō,mōd·ər }

servomultiplier [ELECTR] An electromechanical multiplier in which one variable is used to position one or more ganged potentiometers across which the other variable voltages are applied. { ¦sər·vō'məl·tə,plī·ər }

servo system *See* servomechanism. { 'sər·vō ,sis·təm }

sesquisideband transmission [COMMUN] Transmission of a carrier modulated by one full sideband and half of the other sideband. { ¦ses·kwē'sīd,band tranz'mish·ən }

set [COMPUT SCI] A collection of record types. [ELECTR] The placement of a storage device in a prescribed state, for example, a binary storage cell in the high or 1 state. [ENG] A combination of units, assemblies, and parts connected or otherwise used together to perform an operational function, such as a radar set. { set }

set analyzer *See* analyzer. { 'set ,an·ə,līz·ər }

set-associative cache [COMPUT SCI] A cache memory in which incoming data are distributed in sequence to each of two to eight areas or sets, and is generally read out in the same manner, allowing each set to prepare for the next input/output operation. { 'set ə,sōs·ē,ād·iv ,kash }

set class [COMPUT SCI] The collection of set occurrences that have been or may be created in accordance with a particular set description. { 'set ,klas }

set composite [ELEC] Signaling circuit in which two signaling or telegraph legs may be superimposed on a two-wire, interoffice trunk by means of one of a balanced pair of high-impedance coils connected to each side of the line with an associated capacitor network. { 'set kəm,päz·ət }

set condition [ELECTR] Condition of a flip-flop circuit in which the internal state of the flip-flop is set to 1. { 'set kən,dish·ən }

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set description [COMPUT SCI] For a specified data set, a definition of the set class name, set-owner selection criteria, set-member eligibility rules, and set-member ordering rules. { 'set di ,skrip·shən }

set occurrence [COMPUT SCI] An instance of a set created in accordance with a set description. { 'set ə,kə·rəns }

set point [CONT SYS] The value selected to be maintained by an automatic controller. { 'set ,point }

set pulse [ELECTR] An electronic pulse designed to place a memory cell in a specified state. { 'set ,pəls }

settling time *See* correction time. { 'set·liŋ ,tīm }

setup [ELECTR] The ratio between the reference black level and the reference white level in analog television, both measured from the blanking level; usually expressed as a percentage. { 'sed ,əp }

sexless connector *See* hermaphroditic connector. { 'seks·ləs kə'nek·tər }

sferics receiver [ELECTR] An instrument which measures, electronically, the direction of arrival, intensity, and rate of occurrence of atmospherics; in its simplest form, the instrument consists of two orthogonally crossed antennas, whose output signals are connected to an oscillograph so that one loop measures the north-south component while the other measures the east-west component, the signals are combined vertically to give the azimuth. Also known as lightning recorder. { 'sfir·iks ri,sē·vər }

SGML *See* Standard Generalized Markup Language.

shaded-pole motor [ELEC] A single-phase induction motor having one or more auxiliary short-circuited windings acting on only a portion of the magnetic circuit; generally, the winding is a closed copper ring embedded in the face of a pole; the shaded pole provides the required rotating field for starting purposes. { 'shād·əd ,pōl 'mōd·ər }

shading [ELECTR] Television process of compensating for the spurious signal generated in a camera tube during trace intervals. { 'shād·iŋ }

shading ring [ENG ACOUS] A heavy copper ring sometimes placed around the central pole of an electrodynamic loudspeaker to serve as a shorted turn that suppresses the hum voltage produced by the field coil. { 'shād·iŋ ,riŋ }

shading signal [ELECTR] Television camera signal that serves to increase the gain of the amplifier in the camera during those intervals of time when the electron beam is on an area corresponding to a dark portion of the scene being televised. { 'shād·iŋ ,sig·nəl }

shadow attenuation [ELECTROMAG] Attenuation of radio waves over a sphere in excess of that over a plane when the distance over the surface and other factors are the same. { 'shad·ō ə,ten·yə'wā·shən }

shadow batch system [COMPUT SCI] An online data collection system that initially only stores transactions in the computer system for reference, and updates the master files only at the end of the day or processing period. { 'shad·ō ,bach ,sis·təm }

shadow effect [COMMUN] Reduction in the strength of an ultra-high-frequency signal caused by some object (such as a mountain or a tall building) between the points of transmission and reception. { 'shad·ō i,fekt }

shadow factor [ELECTROMAG] The ratio of the electric-field strength that would result from propagation of waves over a sphere to that which would result from propagation over a plane under comparable conditions. { 'shad·ō ,fak·tər }

shadow mask [ELECTR] A thin, perforated metal mask mounted just back of the phosphor-dot faceplate in a three-gun color picture tube; the holes in the mask are positioned to ensure that each of the three electron beams strikes only its intended color phosphor dot. Also known as aperture mask. { 'shad·ō ,mask }

shadow region [ELECTROMAG] Region in which, under normal propagation conditions, the field strength from a given transmitter is reduced by some obstruction which renders effective radio reception of signals or radar detection of objects in this region improbable. { 'shad·ō ,rē·jən }

shaft coupling *See* coupling. { 'shaft ,kəp·liŋ }

shaft-position encoder [ELECTR] An analog-to-digital converter in which the exact angular position of a shaft is sensed and converted to digital form. { 'shaft pə|zish·ən in'kōd·ər }

shannon [COMMUN] A unit of information content, equal to the designation of one of two possible and equally likely values or states of anything used to store or convey information. { 'shan·ən }

Shannon formula [COMMUN] A theorem in information theory which states that the highest number of binary digits per second which can be transmitted with arbitrarily small frequency of error is equal to the product of the bandwidth and $\log_2 (1 + R)$, where R is the signal-to-noise ratio. { 'shan·ən ,fȯr·myə·lə }

Shannon limit [COMMUN] Maximum signal-to-noise ratio improvement which can be achieved by the best modulation technique as implied by Shannon's theorem relating channel capacity to signal-to-noise ratio. { 'shan·ən ,lim·ət }

Shannon's sampling theorem *See* sampling theorem. { 'shan·ənz 'sam·pliŋ ,thir·əm }

shaped-beam antenna [ELECTROMAG] Antenna with a directional pattern which, over a certain angular range, is of special shape for some particular use. { 'shāpt |bēm an'ten·ə }

shape factor [ELEC] *See* form factor. [ELECTR] The ratio of the 60-decibel bandwidth of a bandpass filter to the 3-decibel bandwidth. { 'shāp ,fak·tər }

shape-fill [COMPUT SCI] The filled-in areas on a graphic electronic display. { 'shāp ,fil }

shaping circuit *See* corrective network. { 'shāp·iŋ ,sər·kət }

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shaping network *See* corrective network. { 'shāp·iŋ ˌnetˌwərk }

shared control unit [COMPUT SCI] A control unit which controls several devices with similar characteristics, such as tape devices. { 'sherd kən ˈtrōl ˌyü·nət }

shared file [COMPUT SCI] A direct-access storage device that is used by more than one computer or data-processing system. { 'sherd 'fīl }

shared load [COMPUT SCI] A workload that can be shared by more than one computer, particularly during peak periods. { 'sherd 'lōd }

shared logic [COMPUT SCI] **1.** The simultaneous use of a single computer by multiple users. **2.** An arrangement of computers or computerized equipment in which the processing capabilities of one computer, including the ability to use peripheral devices, can be distributed to the other computers. { 'sherd 'läj·ik }

shared-logic cluster word processor [COMPUT SCI] A system of terminals lacking word-processing capability and printers joined to a single computer designed to carry out word-processing functions. { 'sherd ˈläj·ik ˈkləs·tər 'wərd ˌprāˌses·ər }

shared resource [COMPUT SCI] Peripheral equipment that is simultaneously shared by several users. { 'sherd 'rēˌsȯrs }

shareware [COMPUT SCI] Copyrighted software that can be tried before buying. { 'sherˌwer }

sharing device [COMPUT SCI] A small, inexpensive multiplexer that combines two independent data signals, which are then transmitted over the same communications line. { 'sher·iŋ diˌvīs }

sharp-cutoff tube [ELECTR] An electron tube in which the control-grid openings are uniformly spaced; the anode current then decreases linearly as the grid voltage is made more negative, and cuts off sharply at a particular grid voltage. { 'shärp ˈkədˌȯf ˌtüb }

sharpness of resonance [ELEC] The narrowness of the frequency band around the resonance at which the response of an electric circuit exceeds an arbitrary fraction of its maximum response, often 70.7%. { 'shärp·nəs əv 'rez·ən·əns }

sharp tuning [ELEC] Having high selectivity; responding only to a desired narrow range of frequencies. { 'shärp 'tün·iŋ }

sheath [ELEC] A protective outside covering on a cable. [ELECTR] A space charge formed by ions near an electrode in a gas tube. [ELECTROMAG] The metal wall of a waveguide. { shēth }

sheath-reshaping converter [ELECTROMAG] In a waveguide, a mode converter in which the change of wave pattern is achieved by gradual reshaping of the sheath of the waveguide and of conducting metal sheets mounted longitudinally in the guide. { 'shēth rēˈshāp·iŋ kənˈvərd·ər }

sheet feeder [COMPUT SCI] A device that feeds noncontinuous forms or sheets of paper into a printer. { 'shēt ˌfēd·ər }

sheet grating [ELECTROMAG] Three-dimensional grating consisting of thin, longitudinal, metal sheets extending along the inside of a waveguide for a distance of about a wavelength, and used to stop all waves except one predetermined wave that passes unimpeded. { 'shēt ˌgrād·iŋ }

shell [COMPUT SCI] A program that provides an interface between a user and the computer's operating system by reading commands and sending them to the operating system for execution. { shel }

shell account [COMPUT SCI] A type of limited access to the Internet in which the user is connected to the Internet indirectly through a second computer on which the user has established an account. { 'shel əˌkaunt }

Shenstone effect [ELECTR] An increase in photoelectric emission of certain metals following passage of an electric current. { 'shenˌstōn iˌfekt }

SHF *See* superhigh frequency.

shielded-conductor cable [ELEC] Cable in which the insulated conductor or conductors are enclosed in a conducting envelope or envelopes constructed so that substantially every point on the surface of the insulation is at ground potential or at some predetermined potential with respect to ground. { 'shēl·dəd kənˈdək·tər 'kā·bəl }

shielded-core superconducting fault-current limiter [ELEC] A limiter which is essentially a transformer, with its primary normal conducting coil connected in series to the line to be protected, while the secondary side is a superconducting tube (that is, a one-turn coil). Also known as inductive superconducting fault-current limiter, shorted-transformer superconducting fault-current limiter. { ˈshēl·dəd ˌkȯr ˈsü·pər·kənˌdək·tiŋ ˈfōlt ˌkər·ənt ˌlim·əd·ər }

shielded joint [ELEC] Cable joint having its insulation so enveloped by a conducting shield that substantially every point on the surface of the insulation is at ground potential, or at some predetermined potential with respect to ground. { 'shēl·dəd 'jȯint }

shielded line [ELECTROMAG] Transmission line, the elements of which confine the propagated waves to an essentially finite space; the external conducting surface is called the sheath. { 'shēl·dəd 'līn }

shielded pair [ELEC] A pair of wires within a cable that is individually covered by a conducting shield. { 'shēld·əd 'per }

shielded wire [ELEC] Insulated wire covered with a metal shield, usually of tinned braided copper wire. { 'shēl·dəd 'wīr }

shield factor [COMMUN] Ratio of noise (or induced current or voltage) in a telephone circuit when a source of shielding is present to the corresponding quantity when the shielding is absent. { 'shēld ˌfak·tər }

shield grid [ELECTR] A grid that shields the control grid of a gas tube from electrostatic fields, thermal radiation, and deposition of thermionic

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emissive material; it may also be used as an additional control electrode. { 'shēld ˌgrid }

shield-grid thyratron [ELECTR] A thyratron having a shield grid, usually operated at cathode potential. { 'shēld ¦grid 'thī·rəˌträn }

shielding See electric shielding. { 'shēld·iŋ }

shielding ratio [ELECTROMAG] The ratio of a field in a specified region when electrical shielding is in place to the field in that region when the shielding is removed. { 'shēld·iŋ ˌrā·shō }

shift [COMPUT SCI] A movement of data to the right or left, in a digital-computer location, usually with the loss of characters shifted beyond a boundary. { shift }

shift register [COMPUT SCI] A computer hardware element constructed to perform shifting of its contained data. { 'shift ˌrej·ə·stər }

shift-register generator [COMPUT SCI] A random-number generator which consists of a sequence of shift operations and other operations, such as no-carry addition. { 'shift ¦rej·ə·stər 'jen·əˌrād·ər }

shiran [ELECTR] Specially designed frequency-modulation continuous-wave distance-measuring equipment used for performing distance measurements of an accuracy comparable to first-order triangulation. Derived from S-band hiran. { 'shīˌran }

shock excitation [ELEC] Excitation produced by a voltage or current variation of relatively short duration; used to initiate oscillation in the resonant circuit of an oscillator. Also known as impulse excitation. { 'shäk ˌekˌsīˈtā·shən }

Shockley diode [ELECTR] A *pnpn* silicon controlled switch having characteristics that permit operation as a unidirectional diode switch. { 'shäk·lē 'dī·ōd }

shore effect [ELECTROMAG] Bending of radio waves toward the shoreline when traveling over water near a shoreline, due to the slightly greater velocity of radio waves over water than over land; this effect causes errors in radio-direction-finder indications. { 'shȯr iˌfekt }

Shor's algorithm [COMPUT SCI] An algorithm for factoring a large number within a reasonable amount of time, using a quantum computer. { ¦shȯrz 'al·gəˌrith·əm }

short See short circuit. { shȯrt }

short antenna [ELECTROMAG] An antenna shorter than about one-tenth of a wavelength, so that the current may be assumed to have constant magnitude along its length, and the antenna may be treated as an elementary dipole. { 'shȯrt anˌten·ə }

short card [COMPUT SCI] A printed circuit board that is plugged into an expansion slot in a microcomputer and is only half the length of a full-size card. { ¦shȯrt ¦kärd }

short circuit [ELEC] A low-resistance connection across a voltage source or between both sides of a circuit or line, usually accidental and usually resulting in excessive current flow that may cause damage. Also known as short. { 'shȯrt 'sər·kət }

short-circuit impedance [ELEC] Of a line or four-terminal network, the driving point impedance when the far-end is short-circuited. { 'shȯrt ¦sər·kət im'pēd·əns }

short-circuiting transfer [ENG] Transfer of melted material from a consumable electrode during short circuits. { 'shȯrt ¦sər·kəd·iŋ 'tranz·fər }

short-circuit transition See shunt transition. { 'shȯrt ¦sər·kət tranz'zish·ən }

short-contact switch [ELEC] Selector switch in which the width of the movable contact is greater than the distance between contact clips, so that the new circuit is contacted before the old one is broken; this avoids noise during switching. { 'shȯrt ¦känˌtak ˌswich }

shorted-transformer superconducting fault-current limiter See shielded-core superconducting fault-current limiter. { ¦shȯrd·əd tranz¦fȯrm·ər ˌsü·pər·kənˌdək·tiŋ 'fȯlt ˌkər·ənt ˌlim·əd·ər }

short-gate gain [ELECTR] Video gain on short-range gate. { 'shȯrt ¦gāt 'gān }

short-haul [COMMUN] Pertaining to devices capable of transmitting and receiving signals over distances up to about 1 mile (1.6 kilometers). { 'shȯrt ˌhȯl }

short-line seeking [COMPUT SCI] A method of accelerating the operation of a computer printer, in which the printer is sent directly to the beginning of the next line to be printed without going to the left margin of the paper. { 'shȯrt ¦līn 'sēk·iŋ }

short-path principle See Hittorf principle. { 'shȯrt ¦path 'prin·sə·pəl }

short-precision number See single-precision number. { 'shȯrt priˈsizh·ən 'nəm·bər }

short-range radar [ENG] Radar whose maximum line-of-sight range, for a reflecting target having 1 square meter of area perpendicular to the beam, is between 50 and 150 miles (80 and 240 kilometers). { 'shȯrt ¦rānj 'rāˌdär }

short shot See short. { 'shȯrt 'shät }

short-term predictor [COMMUN] An electric filter that removes redundancies in a signal associated with short-term correlations so that information can be transmitted more efficiently. { ˌshȯrt ˌtərm prə'dik·tər }

short-term repeatability [CONT SYS] The close agreement of positional movements of a robotic system repeated under identical conditions over a short period of time and at the same location. { 'shȯrt ˌtərm riˌpēd·əˈbil·əd·ē }

short-time rating [ELEC] A rating defining the load that a machine, apparatus, or device can carry for a specified short time. { 'shȯrt ¦tīm 'rād·iŋ }

shortwave broadcasting [COMMUN] Radio broadcasting at frequencies in the range from about 1600 to 30,000 kilohertz, above the standard broadcast band. { 'shȯrt'wāv 'brȯdˌkast·iŋ }

shortwave converter [ELECTR] Electronic unit designed to be connected between a receiver and its antenna system to permit reception of frequencies higher than those the receiver ordinarily handles. { 'shȯrt'wāv kən'vərd·ər }

short waveguide isolator [ELECTR] A device that functions as an isocirculator in a miniature

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microwave circuit and consists of a waveguide T junction with a magnetized cylinder of ferrite at the center and an absorber on the side arm of the T. Also known as flange isolator. { 'shȯrt ˌwāv ˌgīd 'ī·səˌlād·ər }

shortwave propagation [COMMUN] Propagation of radio waves at frequencies in the range from about 1600 to 30,000 kilohertz. { 'shȯrt'wāv ˌpräp·əˈgā·shən }

short word [COMPUT SCI] The fixed word of lesser length in computers capable of handling words of two different lengths; in many computers this is referred to as a half-word because the length is exactly the half-length of the full word. { 'shȯrt 'wərd }

shot effect *See* shot noise. { 'shät iˌfekt }

shot-firing cable [ELEC] A two-conductor cable which leads from the exploder to the detonator wires. Also known as firing cable. { 'shät ˌfīr·iŋ ˌkā·bəl }

shot-firing circuit [ELEC] The path taken by the electric current from the exploder along the shot-firing cable, the detonator wires, and finally the detonator when a shot is detonated. { 'shät ˌfīr·iŋ ˌsər·kət }

shot noise [ELECTR] Noise voltage developed in a thermionic tube because of the random variations in the number and the velocity of electrons emitted by the heated cathode; the effect causes sputtering or popping sounds in radio receivers and snow effects in analog television pictures. Also known as Schottky noise; shot effect. { 'shät ˌnȯiz }

shunt [ELEC] **1.** A precision low-value resistor placed across the terminals of an ammeter to increase its range by allowing a known fraction of the circuit current to go around the meter. Also known as electric shunt. **2.** To place one part in parallel with another. **3.** *See* parallel. { shənt }

shunt-excited antenna [ELECTROMAG] A tower antenna, not insulated from the ground at the base, whose feeder is connected at a point about one-fifth of the way up the antenna and usually slopes up to this point from a point some distance from the antenna's base. { 'shənt ik ˌsīd·əd an'ten·ə }

shunt-fed vertical antenna [ELECTROMAG] Vertical antenna connected to the ground at the base and energized at a point suitably positioned above the grounding point. { 'shənt ˌfed ˌvərd·ə·kəl an'ten·ə }

shunt generator [ELEC] A generator whose field winding and armature winding are connected in parallel, and in which the armature supplies both the load current and the field current. { 'shənt ˌjen·əˌrād·ər }

shunting [ELEC] The act of connecting one device to the terminals of another so that the current is divided between the two devices in proportion to their respective admittances. { 'shənt·iŋ }

shunt loading [ELEC] Loading in which reactances are applied in shunt across the conductors. { 'shənt ˌlōd·iŋ }

shunt motor [ELEC] A direct-current motor whose field circuit and armature circuit are connected in parallel. { 'shənt ˌmōd·ər }

shunt neutralization *See* inductive neutralization. { 'shənt,nü·trə·ləˈzā·shən }

shunt peaking [ELECTR] The use of a peaking coil in a parallel circuit branch connecting the output load of one stage to the input load of the following stage, to compensate for high-frequency loss due to the distributed capacitances of the two stages. { 'shənt ˌpēk·iŋ }

shunt reactor [ELEC] A reactor that has a relatively high inductance and is wound on a magnetic core containing an air gap; used to neutralize the charging current of the line to which it is connected. { 'shənt rēˌak·tər }

shunt regulator [ELEC] A regulator that maintains a constant output voltage by controlling the current through a dropping resistance in series with the load. { 'shənt ˌreg·yəˌlād·ər }

shunt repeater [ELEC] A type of negative impedance telephone repeater which is stable when it is short-circuited, but oscillates when terminated by a high impedance, in contrast to a series repeater; it can be thought of as a negative admittance. { 'shənt riˌpēd·ər }

shunt T junction *See* H-plane T junction. { 'shənt 'tē ˌjəŋk·shən }

shunt transition [ELEC] A method of changing the connection of motors from series to parallel in which one motor, or group of motors, is first short-circuited, then disconnected, and finally connected in parallel with the other motor or motors. Also known as short-circuit transition. { 'shənt tranˌzish·ən }

shunt-wound [ELEC] Having armature and field windings in parallel, as in a direct-current generator or motor. { 'shənt ˌwaünd }

shut-down circuit [ENG] An electronic, electric, or pneumatic system designed to shut off and close down process systems or equipment; can be used for routine or emergency situations. { 'shətˌdaün ˌsər·kət }

shuttered image converter [ELECTR] An image tube whose photoelectrons can be rapidly switched off to allow a camera to record the image on its screen. { ˌshəd·ərd 'im·ij kənˌvərd·ər }

SIB *See* screen image buffer.

SIC *See* dielectric constant.

sideband [ELECTROMAG] **1.** The frequency band located either above or below the carrier frequency, within which fall the frequency components of the wave produced by the process of modulation. **2.** The wave components lying within such bands. { 'sīdˌband }

side circuit [COMMUN] One of the circuits arranged to derive a phantom circuit. { 'sīd ˌsər·kət }

side echo [ELECTROMAG] Echo due to a side lobe of an antenna. { 'sīd ˌek·ō }

side effect [COMPUT SCI] A consistent result of a procedure that is in addition to or peripheral to the basic result. { 'sīd iˌfekt }

side lobe *See* minor lobe. { 'sīd ˌlōb }

side-lobe blanking [ELECTR] Radar technique that compares the signal strength in the main antenna with the echo received in an auxiliary antenna of gain between the side-lobe level and

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the main-beam gain of the main antenna; done to determine if the echo is coming from the main-beam direction, and blanking the echoes whenever they are stronger in the auxiliary channel. { 'sīd ˌlōb 'blaŋk·iŋ }

side-lobe suppression [ELECTR] Design or techniques in radar intended to reduce the effect of side lobes in the antenna's pattern. { 'sīd ˌlōbe sə,presh·ən }

sidetone [COMMUN] The sound of the speaker's own voice as heard in his or her telephone receiver; the effect is undesirable if excessive and is usually reduced by special circuits. { 'sīdˌtōn }

sidetone level [COMMUN] The ratio of the volume of the sidetone to the volume of the speaker's voice, usually expressed in decibels. { 'sīdˌtōn ˌlev·əl }

sidetone ranging [COMMUN] A method of measuring time delay, and thereby range, by sending a radio signal to a satellite, in which several audio tones of different frequencies are broadcast, and the phases of the tones transmitted from the satellite are compared with the sent tone phases. { 'sīdˌtōn 'rānj·iŋ }

siemens [ELEC] A unit of conductance, admittance, and susceptance, equal to the conductance between two points of a conductor such that a potential difference of 1 volt between these points produces a current of 1 ampere; the conductance of a conductor in siemens is the reciprocal of its resistance in ohms. Formerly known as mho (℧); reciprocal ohm. Symbolized S. { 'sē·mənz }

sift [COMPUT SCI] To extract certain desired information items from a large quantity of data. { sift }

sigma-delta analog-to-digital converter [ELECTR] A converter that uses an analog circuit to generate a single-valued pulse stream in which the frequency of pulses is determined by the analog source, and then uses a digital circuit to repeatedly sum the number of these pulses over a fixed time interval, converting the pulses to numeric values. { |sig·mə |del·tə ˌan·əˌläg tü ˌdij·əd·əl kənˌvərd·ər }

sigma-delta converter [ELECTR] A class of electronic systems containing both analog and digital subsystems whose most common application is the conversion of analog signals to digital form, and vice versa, using pulse density modulation to create a high-rate stream of single-amplitude pulses in either case. Also known as delta-sigma converter. { ˌsig·mə ˌdel·tə kən'vərd·ər }

sigma-delta digital-to-analog converter [ELECTR] A converter that uses a digital circuit to convert numeric values from a digital processor to a pulse stream and then uses an analog low-pass filter to produce an analog waveform. { |sig·mə |del·tə ˌdij·əd·əl tü ˌan·əˌläg kən'vərd·ər }

sigma-delta modulator [ELECTR] The circuit used to generate a pulse stream in a sigma-delta converter. Also known as delta-sigma modulator. { ˌsig·mə ˌdel·tə 'mäj·əˌlād·ər }

signal [COMMUN] **1.** A visual, aural, or other indication used to convey information. **2.** The intelligence, message, or effect to be conveyed over a communication system. **3.** *See* signal wave. { 'sig·nəl }

signal bias [COMMUN] Form of teletypewriter signal distortion brought about by the lengthening or shortening of pulses during transmission; when marking pulses are all lengthened, a marking signal bias results; when marking pulses are all shortened, a spacing signal bias results. { 'sig·nəl ˌbī·əs }

signal carrier *See* carrier. { 'sig·nəl ˌkar·ē·ər }

signal channel [COMMUN] A signal path for transmitting electric signals; such paths may be separated by frequency division or time division. { 'sig·nəl ˌchan·əl }

signal conditioning [COMMUN] Processing the form or mode of a signal so as to make it intelligible to or compatible with a given device, such as a data transmission line, including such manipulation as pulse shaping, pulse clipping, digitizing, and linearizing. { 'sig·nəl kənˌdish·ən·iŋ }

signal distance [COMPUT SCI] The number of bits that are not the same in two binary words of equal length. Also known as hamming distance. { 'sig·nəl ˌdis·təns }

signal distortion generator [ELECTR] Instrument designed to apply known amounts of distortion on a signal for the purpose of testing and adjusting communications equipment such as teletypewriters. { 'sig·nəl di'stȯr·shən ˌjen·əˌrād·ər }

signal-flow graph [SYS ENG] An abbreviated block diagram in which small circles, called nodes, represent variables of the system, and the nodes are connected by lines, called branches, which represent one-way signal multipliers; an arrow on the line indicates direction of signal flow, and a letter near the arrow indicates the multiplication factor. Also known as flow graph. { 'sig·nəl |flō 'graf }

signal generator [ENG] An electronic test instrument that delivers a sinusoidal output at an accurately calibrated frequency that may be anywhere from the audio to the microwave range; the frequency and amplitude are adjustable over a wide range, and the output usually may be amplitude- or frequency-modulated. Also known as test oscillator. { 'sig·nəl ˌjen·əˌrād·ər }

signal in band [COMMUN] To send control signals at frequencies within the frequency range of the data signal. { |sig·nəl in |band }

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signaling key *See* key. { 'sig·nə·liŋ ˌkē }

signaling rate [COMMUN] The rate at which signals are transmitted. { 'sig·nə·liŋ ˌrāt }

signal intensity [COMMUN] The electric-field strength of the electromagnetic wave transmitting a signal. { 'sig·nəl inˌten·səd·ē }

signal level [COMMUN] The difference between the level of a signal at a point in a transmission system and the level of an arbitrarily specified reference signal. { 'sig·nəl ˌlev·əl }

signal light [COMMUN] A light specifically designed for the transmission of code messages by means of visible light rays that are interrupted or deflected by electric or mechanical means. [ENG] A signal, illumination, or any pyrotechnic light used as a sign. { 'sig·nəl ˌlīt }

signal normalization *See* signal standardization. { 'sig·nəl ˌnȯr·mə·lə'zā·shən }

signal out of band [COMMUN] To send control signals at frequencies outside the frequency range of the data signal. { ¦sig·nəl aůt əv ¦band }

signal processing [COMMUN] The extraction of information from complex signals in the presence of noise, generally by conversion of the signals into digital form followed by analysis using various algorithms. Also known as digital signal processing (DSP). { 'sig·nəl ˌprāˌses·iŋ }

signal regeneration [COMMUN] The restoration of a waveform representing a signal to approximate its original amplitude and shape. Also known as signal reshaping. { 'sig·nəl rēˌjen·ə'rā·shən }

signal reshaping *See* signal regeneration. { 'sig·nəl rēˌshāp·iŋ }

signal-shaping network [ELECTR] Network inserted in a telegraph circuit, usually at the receiving end, to improve the waveform of the code signals. { 'sig·nəl ¦shāp·iŋ ˌnetˌwərk }

signal speed [COMMUN] The rate at which code elements are transmitted by a communications system. { 'sig·nəl ˌspēd }

signal standardization [COMMUN] The use of one signal to generate another which meets specified requirements for shape, amplitude, and timing. Also known as signal normalization. { 'sig·nəl ˌstan·dər·də'zā·shən }

signal strength [ELECTROMAG] The strength of the signal produced by a radio transmitter at a particular location, usually expressed as microvolts or millivolts per meter of effective receiving antenna height. { 'sig·nəl ˌstrəŋkth }

signal-strength meter [ELECTR] A meter that is connected to the automatic volume-control circuit of a communication receiver and calibrated in decibels or arbitrary S units to read the strength of a received signal. Also known as S meter; S-unit meter. { 'sig·nəl ¦strəŋkth ˌmēd·ər }

signal-to-interference ratio [ELECTR] The relative magnitude of signal waves and waves which interfere with signal-wave reception. { 'sig·nəl tü ˌin·tər'fir·əns ˌrā·shō }

signal-to-noise improvement factor *See* noise improvement factor. { 'sig·nəl tə 'nȯiz im'prüv·mənt ˌfak·tər }

signal-to-noise ratio [ELECTR] The ratio of the amplitude of a desired signal at any point to the amplitude of noise signals at that same point, often expressed in decibels; the peak value is usually used for pulse noise, while the root-mean-square (rms) value is used for random noise. Abbreviated S/N, SNR. { 'sig·nəl tə 'nȯiz ˌrā·shō }

signal tracer [ELECTR] An instrument used for tracing the progress of a signal through a radio receiver or an audio amplifier to locate a faulty stage. { 'sig·nəl ˌtrā·sər }

signal voltage [ELEC] Effective (root-mean-square) voltage value of a signal. { 'sig·nəl ˌvōl·tij }

signal wave [COMMUN] A wave whose characteristics permit some intelligence, message, or effect to be conveyed. Also known as signal. { 'sig·nəl ˌwāv }

signal-wave envelope [COMMUN] Contour of a signal wave which is composed of a series of wave cycles. { 'sig·nəl ¦wāv 'en·vəˌlōp }

signal winding [ELEC] Control winding, of a saturable reactor, to which the independent variable (signal wave) is applied. { 'sig·nəl ˌwīnd·iŋ }

sign-and-magnitude code [COMPUT SCI] The representation of an integer X by $(-1)^{a_0}\{2^{n-2}a_1 + 2^{n-3}a_2 + \cdots + a_{n-1}\}$, where a_0 is 0 for X positive and a_0 is 1 for X negative, and any a_i is either 0 or 1. { 'sīn ən 'mag·nəˌtüd ˌkōd }

signature [ELECTR] The characteristic pattern of a target as displayed by detection and classification equipment. { 'sig·nə·chər }

sign bit [COMPUT SCI] A sign digit consisting of one bit. { 'sīn ˌbit }

sign check indicator [COMPUT SCI] An error checking device, indicating no sign or improper signing of a field used for arithmetic processes; the machine can, upon interrogation, be made to stop or enter into a correction routine. { 'sīn ¦chek 'in·dəˌkād·ər }

sign digit [COMPUT SCI] A digit containing one to four binary bits, associated with a data item and used to denote an algebraic sign. { 'sīn ˌdij·ət }

signed decimal [COMPUT SCI] A form of packed decimal representation in which the low-order nibble of the last byte has a sign bit that specifies whether the number is positive or negative. { 'sīnd 'des·məl }

signed field [COMPUT SCI] A field of data that contains a number which includes a sign digit indicating the number's sign. { 'sīnd 'fēld }

signed integer [COMPUT SCI] A whole number whose value lies anywhere in a domain that extends from a negative to a positive integer, and which therefore carries a sign. { 'sīnd 'int·ə·jər }

sign flag [COMPUT SCI] A bit in a status byte in a computer's central processing unit that indicates whether the result of an arithmetic operation is positive or negative. { 'sīn ˌflag }

significance arithmetic [COMPUT SCI] A rough technique for estimating the numbers and positions of the significant digits of the radix approximation that results when an arithmetic operation is applied to operands in radix approximation form. { sig'nif·i·kəns əˌrith·mə·tik }

sign position [COMPUT SCI] That position, always at or near the left or right end of a numeral,

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in which the algebraic sign of the number is represented. { 'sīn pə,zish·ən }

silent discharge [ELECTR] An inaudible electric discharge in air that occurs at high voltage and consumes a relatively large amount of energy. { ¦sī·lənt 'dis,chärj }

silent period [COMMUN] Period during each hour in which ship and shore radio stations must remain silent and listen for distress calls. { 'sī·lənt 'pir·ē·əd }

silicide resistor [ELECTR] A thin-film resistor that uses a silicide of molybdenum or chromium, deposited by direct-current sputtering in an integrated circuit when radiation hardness or high resistance values are required. { 'sil·ə,sīd ri'zis·tər }

silicon capacitor [ELECTR] A capacitor in which a pure silicon-crystal slab serves as the dielectric; when the crystal is grown to have a *p* zone, a depletion zone, and an *n* zone, the capacitance varies with the externally applied bias voltage, as in a varactor. { 'sil·ə·kən kə'pas·əd·ər }

silicon controlled rectifier [ELECTR] A semiconductor rectifier that can be controlled; it is a *pnpn* four-layer semiconductor device that normally acts as an open circuit, but switches rapidly to a conducting state when an appropriate gate signal is applied to the gate terminal. Abbreviated SCR. Also known as reverse-blocking triode thyristor. { 'sil·ə·kən kən'trōld 'rek·tə,fī·ər }

silicon controlled switch [ELECTR] A four-terminal switching device having four semiconductor layers, all of which are accessible; it can be used as a silicon controlled rectifier, gate-turnoff switch, complementary silicon controlled rectifier, or conventional silicon transistor. Abbreviated SCS. Also known as reverse-blocking tetrode thyristor. { 'sil·ə·kən kən'trōld 'swich }

silicon detector *See* silicon diode. { 'sil·ə·kən di'tek·tər }

silicon diode [ELECTR] A crystal diode that uses silicon as a semiconductor; used as a detector in ultra-high- and super-high-frequency circuits. Also known as silicon detector. { 'sil·ə·kən 'dī ,ōd }

silicon homojunction *See* bipolar junction transistor. { ¦sil·ə·kən 'hä·mə,jəŋk·shən }

silicon image sensor [ELECTR] A video camera in which the image is focused on an array of individual light-sensitive elements formed from a charge-coupled-device semiconductor chip. Also known as silicon imaging device. { 'sil·ə·kən 'im·ij ,sen·sər }

silicon imaging device *See* silicon image sensor. { 'sil·ə·kən 'im·ij·iŋ di,vīs }

silicon-on-insulator [ELECTR] A semiconductor manufacturing technology in which thin films of single-crystalline silicon are grown over an electrically insulating substrate. { 'sil·ə·kən ön 'in·sə,lād·ər }

silicon-on-sapphire [ELECTR] A semiconductor manufacturing technology in which metal oxide semiconductor devices are constructed in a thin single-crystal silicon film grown on an electrically insulating synthetic sapphire substrate. Abbreviated SOS. { 'sil·ə·kən ön 'sa,fīr }

silicon rectifier [ELECTR] A metallic rectifier in which rectifying action is provided by an alloy junction formed in a high-purity silicon slab. { 'sil·ə·kən 'rek·tə,fī·ər }

silicon resistor [ELECTR] A resistor using silicon semiconductor material as a resistance element, to obtain a positive temperature coefficient of resistance that does not appreciably change with temperature; used as a temperature-sensing element. { 'sil·ə·kən ri'zis·tər }

silicon retina [ELECTR] An analog very large scale integrated circuit chip that performs operations which resemble some of the functions performed by the retina of the human eye. { ,sil·ə,kän 'ret·ən·ə }

silicon solar cell [ELECTR] A solar cell consisting of *p* and *n* silicon layers placed one above the other to form a *pn* junction at which radiant energy is converted into electricity. { 'sil·ə·kən 'sō·lər 'sel }

silicon-symmetrical switch [ELECTR] Thyristor modified by adding a semiconductor layer so that the device becomes a bidirectional switch; used as an alternating-current phase control, for synchronous switching and motor speed control. { 'sil·ə·kən si'me·trə·kəl 'swich }

silicon transistor [ELECTR] A transistor in which silicon is used as the semiconducting-material. { 'sil·ə·kən tran'zis·tər }

silver battery [ELEC] A solid-state battery based on an Ag_4RbI_5 electrolyte that conducts positive silver ions. { 'sil·vər 'bad·ə·rē }

silver-cadmium storage battery [ELEC] A storage battery that combines the excellent space and weight characteristics of silver-zinc batteries with long shelf life and other desirable properties of nickel-cadmium batteries. { 'sil·vər 'kad·mē·əm 'stór·ij ,bad·ə·rē }

silvered mica capacitor [ELECTR] A mica capacitor in which a coating of silver is deposited directly on the mica sheets to serve in place of conducting metal foil. { 'sil·vərd ¦mī·kə kə'pas·əd·ər }

silver migration [ELEC] A process, causing reduction in insulation resistance and dielectric failure; silver, in contact with an insulator, at high humidity, and subjected to an electrical potential, is transported ionically from one location to another. { 'sil·vər mī'grā·shən }

silver oxide cell [ELEC] A primary cell in which depolarization is accomplished by an oxide of silver. { 'sil·vər ¦äk,sīd ,sēl }

silverstat regulator [ELEC] Multitapped resistor, the taps of which are connected to single-leaf silver contacts; variation of voltage causes a solenoid to open or close these contacts, shorting out more or less of the resistance in the exciter circuit as a means of regulating the output voltage to the desired value. { 'sil·vər ,stat 'reg·yə,lād·ər }

silver-zinc storage battery [ELEC] A storage battery that gives higher current output and greater watt-hour capacity per unit of weight and volume

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than most other types, even at high discharge rates, used in missiles and torpedoes, where its high cost can be tolerated. { 'sil·vər ¦zink 'stōr·ij ˌbad·ə·rē }

SIMD [COMPUT SCI] A type of multiprocessor architecture in which there is a single instruction cycle, but multiple sets of operands may be fetched to multiple processing units and may be operated upon simultaneously within a single instruction cycle. Acronym for single-instruction-stream, multiple-data-stream. { ¦es¦ī¦em¦dē }

SIMM [COMPUT SCI] A printed circuit board that holds several semiconductor memory chips and is used to add memory to a computer. Acronym for single in-line memory module. { sim }

simple buffering [COMPUT SCI] A technique for obtaining simultaneous performance of input/output operations and computing; it involves associating a buffer with only one input or output file (or data set) for the entire duration of the activity on that file (or data set). { 'sim·pəl 'bəf·ə·riŋ }

simple data structure [COMPUT SCI] An arrangement of data in a database or file in which each grouping of data, such as a record, is of equal importance or significance. { 'sim·pəl 'dad·ə ˌstrək·chər }

simple electrostatic lens [ELECTR] An electrostatic lens that consists of a circular hole in a conducting plate with different electrostatic fields on the two sides. { ¦sim·pəl i¦lek·trə ˌstad·ik 'lenz }

simple harmonic current [ELEC] Alternating current, the instantaneous value of which is equal to the product of a constant, and the cosine of an angle varying linearly with time. Also known as sinusoidal current. { 'sim·pəl här'män·ik 'kə·rənt }

simple harmonic electromotive force [ELEC] An alternating electromotive force which is equal to the product of a constant and the cosine or sine of an angle which varies linearly with time. { 'sim·pəl här'män·ik i¦lek·trə¦mōd·iv 'fȯrs }

Simple Mail Transfer Protocol [COMPUT SCI] An Internet standard for sending e-mail messages. Abbreviated SMTP. { ¦sim·pəl 'māl ˌtranz·fər ˌprōd·əˌkȯl }

simple oscillator *See* harmonic oscillator. { 'sim·pəl 'äs·əˌlād·ər }

simplex channel [COMMUN] A channel which permits transmission in one direction only. { 'simˌpleks ¦chan·əl }

simplex structure [COMPUT SCI] The structure of an information processing system designed in such a way that only the minimum amount of hardware is utilized to implement its function. { 'simˌpleks ¦strək·chər }

simplex transmission [COMMUN] A mode of radio transmission in which communication takes place between two stations in only one direction at a time. { 'simˌpleks tranz¦mish·ən }

SIMSCRIPT [COMPUT SCI] A high-level programming language used in simulation, in which systems are described in terms of sets, entities, which are groups of sets, and attributes, which are properties associated with entities. { 'sim ˌskript }

simulation [COMPUT SCI] The development and use of computer models for the study of actual or postulated dynamic systems. { ˌsim·yə'lā·shən }

simulation language [COMPUT SCI] A computer language used to write programs for the simulation of the behavior through time of such things as transportation and manufacturing systems. SIMSCRIPT is an example. { ˌsim·yə'lā·shən ˌlaŋ·gwij }

simulator [COMPUT SCI] A routine which is executed by one computer but which imitates the operations of another computer. [ENG] A computer or other piece of equipment that simulates a desired system or condition and shows the effects of various applied changes, such as a flight simulator. { 'sim·yəˌlād·ər }

simultaneous access *See* parallel access. { ˌsī·məl'tā·nē·əs 'akˌses }

simultaneous color television [ELECTR] A color television system in which the phosphors for the three primary colors are excited at the same time, not one after another; the shadow-mask color picture tube gives a simultaneous display. { ˌsī·məl'tā·nē·əs 'kəl·ər 'tel·əˌvizh·ən }

simultaneous computer [COMPUT SCI] **1.** A computer, usually of the analog or hybrid type, in which separate units of hardware are used to carry out the various parts of a computation, the execution of different parts usually overlap in time, and the various hardware units are interconnected in a manner determined by the computation. **2.** A computer that serves to back up another computer and can replace it when it is not operating effectively. { ˌsī·məl'tā·nē·əs kəm'pyüd·ər }

simultaneous lobing [ELECTR] A radar direction-finding technique in which the signals received by two partly overlapping antenna beams are compared in phase or power to obtain a measure of the angular displacement of a target from the equisignal direction; arrangement of (usually) four such beams to effect measurement in both angle directions. { ˌsī·məl'tā·nē·əs 'lōb·iŋ }

simultaneous peripheral operations on line *See* spooling. { ˌsī·məl'tā·nē·əs pə'rif·ə·rəl ˌäp·ə'rā·shənz ón 'līn }

sine-cosine encoder [ELECTR] A shaft-position encoder having a special type of angle-reading code disk that gives an output which is a binary representation of the sine of the shaft angle. { 'sīn 'kō,sīn in'kōd·ər }

sine-cosine generator *See* resolver. { 'sīn 'kō,sīn 'jen·əˌrād·ər }

sine potentiometer [ELECTR] A potentiometer whose direct-current output voltage is proportional to the sine of the shaft angle, used as a resolver in computer and radar systems. { 'sīn pəˌten·chē'äm·əd·ər }

sine-wave modulated jamming [ELECTR] Jamming signal produced by modulating a continuous wave signal with one or more sine waves. { 'sīn ¦wāv ˌmäj·əˌlād·əd 'jam·iŋ }

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PUT SCI] A computer
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sine-wave oscillator *See* sinusoidal oscillator. ['sīn ˌwāv 'äs·əˌlād·ər]

sine-wave response *See* frequency response. ['sīn ˌwāv ri'späns]

singing [CONT SYS] An undesired, self-sustained oscillation in a system or component, at a frequency in or above the passband of the system or component; generally due to excessive positive feedback. ['siŋ·iŋ]

singing margin [CONT SYS] The difference in level, usually expressed in decibels, between the singing point and the operating gain of a system or component. ['siŋ·iŋ ˌmär·jən]

singing point [CONT SYS] The minimum value of gain of a system or component that will result in singing. ['siŋ·iŋ ˌpȯint]

singing-stovepipe effect [ELEC] Reception and reproduction of radio signals by ordinary pieces of metal in contact with each other, such as sections of stovepipe; it occurs when rusty bolts, faulty welds, or mechanically loose connections within strong radiated fields near transmitters produce intermodulation interference; the mechanically poor connections serve as nonlinear diodes. ['siŋ·iŋ ¦stōvˌpīp iˌfekt]

single-address instruction *See* one-address instruction. ['siŋ·gəl ¦adˌres in'strək·shən]

single-board computer [COMPUT SCI] A computer consisting of a processor and memory on a single printed circuit board. ['siŋ·gəl ¦bȯrd kəm'pyüd·ər]

single bus [ELEC] A substation switching arrangement that involves one common bus for all connections and one breaker per connection. ['siŋ·gəl 'bəs]

single-button carbon microphone [ENG ACOUS] Microphone having a carbon-filled buttonlike container on only one side of its flexible diaphragm. ['siŋ·gəl ¦bat·ən 'kär·bən 'mī·krəˌfōn]

single-channel multiplier [ELECTR] A type of photomultiplier tube in which electrons travel down a cylindrical channel coated on the inside with a resistive secondary-emitting layer, and gain is achieved by multiple electron impacts on the inner surface as the electrons are directed down the channel by an applied voltage over the length of the channel. ['siŋ·gəl ¦chan·əl 'məl·təˌplī·ər]

single-channel simplex [COMMUN] Simplex operation that provides nonsimultaneous radio communications between stations using the same frequency channel. ['siŋ·gəl ¦chan·əl 'simˌpleks]

single-chip computer [COMPUT SCI] A computer whose processor consists of a single integrated circuit. ['siŋ·gəl ¦chip kəm'pyüd·ər]

single-current transmission [COMMUN] Telegraph transmission in which a current flows, in only one direction, during marking intervals, and no current flows during spacing intervals. ['siŋ·gəl ¦kə·rənt tranz'mish·ən]

single density [COMPUT SCI] Property of computer storage which holds the standard amount of data per unit of storage space. ['siŋ·gəl 'den·səd·ē]

single-edged push-pull amplifier circuit [ELECTR] Amplifier circuit having two transmission paths designed to operate in a complementary manner and connected to provide a single unbalanced output without the use of an output transformer. ['siŋ·gəl ¦ejd ¦půsh ¦půl 'amˌplə,fī·ər ˌsər·kət]

single-electron transistor [ELECTR] A transistor whose dimensions are extremely small, in the nanometer range, causing it to exhibit characteristics that are sensitive to the transport and storage of single electrons. [ˌsiŋ·gəl iˌlek·trän tran'zis·tər]

single-end amplifier [ELECTR] Amplifier stage which normally employs only one tube or semiconductor or, if more than one tube or semiconductor is used, they are connected in parallel so that operation is asymmetric with respect to ground. Also known as single-sided amplifier. ['siŋ·gəl ¦end 'amˌplə,fī·ər]

single-ended [ELEC] Unbalanced, as when one side of a transmission line or circuit is grounded. ['siŋ·gəl 'end·əd]

single-ended signal [ELECTR] A circuit signal that is the voltage difference between two nodes, one of which can be defined as being at ground or reference voltage. [¦siŋ·gəl ¦en·dəd 'sig·nəl]

single-event upset [ELECTR] A change in the state of a logic device from 0 to 1 or vice versa, as the result of the passage of a single cosmic ray. [¦siŋ·gəl iˌvent 'əpˌset]

single-frequency duplex [COMMUN] Duplex carrier communications that provide communications in opposite directions, but not simultaneously, over a single-frequency carrier channel, the transfer between transmitting and receiving conditions being automatically controlled by the voices or other signals of the communicating parties. ['siŋ·gəl 'frē·kwən·sē 'düˌpleks]

single-frequency simplex [COMMUN] Single-frequency carrier communications in which manual rather than automatic switching is used to change over from transmission to reception. ['siŋ·gəl 'frē·kwən·sē 'simˌpleks]

single-gun color tube [ELECTR] A color picture tube having only one electron gun and one electron beam; the beam is sequentially deflected across phosphors for the three primary colors to form each color picture element, as in the chromatron. ['siŋ·gəl ¦gən 'kəl·ərˌtüb]

single-hop transmission [COMMUN] Radio transmission in which radio waves are reflected from the ionosphere only once along their path from the transmitter to the receiver. ['siŋ·gəl ¦häp trans'mish·ən]

single in-line memory module *See* SIMM. [¦siŋ·gəl ¦in ˌlīn 'mem·rēˌmä·jəl]

single in-line package [ELECTR] A packaged resistor network or other assembly that has a single row of terminals or lead wires along one edge of the package. Abbreviated SIP. ['siŋ·gəl 'inˌlīn 'pak·ij]

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single-instruction-stream, multiple-data-stream *See* SIMD. { ¦siŋ·gəl in¦strək·shən ˌstrēm ¦məl·tə·pəl 'dad·ə ˌstrēm }

single-instruction-stream, single-data-stream *See* SISD. { ¦siŋ·gəl in¦strək·shən ˌstrēm ¦siŋ·gəl 'dad·ə ˌstrēm }

single-keyboard point-of-sale system [COMPUT SCI] A point-of-sale system based upon electronic cash registers as stand-alone units, each equipped with a few internal registers and some programming capability. { 'siŋ·gəl ¦kē ˌbȯrd ¦pȯint əv 'sāl ˌsis·təm }

single-length [COMPUT SCI] Pertaining to the expression of numbers in binary form in such a way that they can be included in a single computer word. { 'siŋ·gəl 'leŋkth }

single-loop feedback [CONT SYS] A system in which feedback may occur through only one electrical path. { 'siŋ·gəl ¦lüp 'fēdˌbak }

single-loop servomechanism [CONT SYS] A servomechanism which has only one feedback loop. Also known as servo loop. { 'siŋ·gəl ¦lüp 'sər·vō ˌmek·əˌniz·əm }

single-phase [ELEC] Energized by a single-alternating voltage. { 'siŋ·gəl 'fāz }

single-phase circuit [ELEC] Either an alternating-current circuit which has only two points of entry, or one which, having more than two points of entry, is intended to be so energized that the potential differences between all pairs of points of entry are either in phase or differ in phase by 180°. { 'siŋ·gəl ¦fāz 'sər·kət }

single-phase circuit [ELEC] Either an alternating-current circuit which has only two points of entry, or one which, having more than two points of entry, is intended to be so energized that the potential differences between all pairs of points of entry are either in phase or differ in phase by 180°. { 'siŋ·gəl ¦fāz 'sər·kət }

single-phase meter [ENG] A type of power-factor meter that contains a fixed coil that carries the load current, and crossed coils that are connected to the load voltage; there is no spring to restrain the moving system, which takes a position to indicate the angle between the current and voltage. { 'siŋ·gəl ¦fāz 'mēd·ər }

single-phase motor [ELEC] A motor energized by a single alternating voltage. { 'siŋ·gəl ¦fāz 'mōd·ər }

single-phase rectifier [ELECTR] A rectifier whose input voltage is a single sinusoidal voltage, in contrast to a polyphase rectifier. { 'siŋ·gəl ¦fāz 'rek·təˌfī·ər }

single-point grounding [ELEC] Grounding system that attempts to confine all return currents to a network that serves as the circuit reference; to be effective, no appreciable current is allowed to flow in the circuit reference, that is, the sum of the return currents is zero. { 'siŋ·gəl ¦pȯint 'graund·iŋ }

single-polarity pulse [ELEC] Pulse in which the sense of the departure from normal is in one direction only. { 'siŋ·gəl pə¦lar·əd·ē 'pəls }

single-polarity pulse-amplitude modulation *See* unidirectional pulse-amplitude modulation. { 'siŋ·gəl pə¦lar·əd·ē 'pəls 'am·plə,tüd ˌmäj·əˈlā·shən }

single-pole double-throw [ELEC] A three-terminal switch or relay contact arrangement that connects one terminal to either of two other terminals. Abbreviated SPDT. { 'siŋ·gəl 'pōl 'dəb·əl 'thrō }

single-pole single-throw [ELEC] A two-terminal switch or relay contact arrangement that opens or closes one circuit. Abbreviated SPST. { 'siŋ·gəl 'pōl 'siŋ·gəl 'thrō }

single-precision number [COMPUT SCI] A number having as many digits as are ordinarily used in a given computer, in contrast to a double-precision number. Also known as short-precision number. { 'siŋ·gəl prə¦sizh·ən 'nəm·bər }

single-program, multiple-data *See* SPMD. { 'siŋ·gəl ¦prō·grəm ¦məl·tə·pəl 'dad·ə }

single reference *See* random access. { 'siŋ·gəl 'ref·rəns }

singlesheet feed [COMPUT SCI] Equipment for feeding one sheet of paper to a computer printer at a time. { 'siŋ·gəl,shēt 'fēd }

single-shot blocking oscillator [ELECTR] Blocking oscillator modified to operate as a single-shot trigger circuit. { 'siŋ·gəl ¦shät 'bläk·iŋ 'äs·əˌlād·ər }

single-shot multivibrator *See* monostable multivibrator. { 'siŋ·gəl ¦shät ¦məl·tiˈvīˌbrād·ər }

single-shot operation *See* single-step operation. { 'siŋ·gəl ¦shät ˌäp·əˈrā·shən }

single-shot trigger circuit [ELECTR] Trigger circuit in which one triggering pulse initiates one complete cycle of conditions ending with a stable condition. Also known as single-trip trigger circuit. { 'siŋ·gəl ¦shät 'trig·ər ˌsər·kət }

single-sideband [COMMUN] Pertaining to single-sideband communication. Abbreviated SSB. { 'siŋ·gəl 'sīdˌband }

single-sideband communication [COMMUN] A communication system in which one of the two sidebands used in amplitude-modulation is suppressed; the carrier wave may be either transmitted, suppressed, or partially suppressed. { 'siŋ·gəl ¦sīdˌband kəˌmyü·nəˈkā·shən }

single-sideband modulation [COMMUN] Modulation resulting from elimination of all components of one sideband from an amplitude-modulated wave. { 'siŋ·gəl ¦sīdˌband ˌmäj·əˈlā·shən }

single-sideband transmission [COMMUN] Transmission of a carrier and substantially only one sideband of modulation frequencies, as in television where only the upper sideband is transmitted completely for the picture signal; the carrier wave may be either transmitted or suppressed, partially or totally. { 'siŋ·gəl ¦sīd ˌband tranzˈmish·ən }

single-sided [COMPUT SCI] Pertaining to storage media that use only one of two sides for recording data. { 'siŋ·gəl 'sīd·əd }

single-sided amplifier *See* single-end amplifier. { 'siŋ·gəl ¦sīd·əd 'am·pləˌfī·ər }

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single-sided board [ELECTR] A printed wiring board that contains all of the interconnect material on one of the external layers. { ˌsiŋ·gəl ˌsīd·əd 'bȯrd }

single-signal receiver [ELECTR] A highly selective superheterodyne receiver for code reception, having a crystal filter in the intermediate-frequency amplifier. { 'siŋ·gəl ¦sig·nəl ri'sē·vər }

single-step operation [COMPUT SCI] A method of computer operation, used in debugging or detecting computer malfunctions, in which a program is carried out one instruction at a time, each instruction being performed in response to a manual control device such as a switch or button. Also known as one-shot operation; one-step operation, single-shot operation; step-by-step operation. { 'siŋ·gəl ¦step ˌäp·ə'rā·shən }

single-stub transformer [ELECTROMAG] Shorted section of a coaxial line that is connected to a main coaxial line near a discontinuity to provide impedance matching at the discontinuity. { 'siŋ·gəl ¦stəb tranz'fȯr·mər }

single-stub tuner [ELECTROMAG] Section of transmission line terminated by a movable short-circuiting plunger or bar, attached to a main transmission line for impedance-matching purposes. { 'siŋ·gəl ¦stəb 'tün·ər }

single threading [COMPUT SCI] Transaction processing in which one transaction is completed before another is begun. { 'siŋ·gəl 'thred·iŋ }

single-throw switch [ELEC] A switch in which the same pair of contacts is always opened or closed. { 'siŋ·gəl ¦thrō 'swich }

single-tone keying [COMMUN] Form of keying in which the modulating function causes the carrier to be modulated with a single tone for one condition, which may be either marking or spacing, and the carrier is unmodulated for the other condition. { 'siŋ·gəl ¦tōn 'kē·iŋ }

single-trip trigger circuit *See* single-shot trigger circuit. { 'siŋ·gəl ¦trip 'trig·ər ˌsər·kət }

single-tuned amplifier [ELECTR] An amplifier characterized by resonance at a single frequency. { 'siŋ·gəl ¦tünd 'am·plə,fī·ər }

single-tuned circuit [ELEC] A circuit whose behavior is the same as that of a circuit with a single inductance and a single capacitance, together with associated resistances. { 'siŋ·gəl ¦tünd 'sər·kət }

single-tuned interstage [ELECTR] An interstage circuit which is resonant at a single frequency. { 'siŋ·gəl ¦tünd 'in·tərˌstāj }

single-unit semiconductor device [ELECTR] Semiconductor device having one set of electrodes associated with a single carrier stream. { 'siŋ·gəl ¦yü·nət 'sem·i·kənˌdək·tər di,vīs }

single-wire line [ELEC] **1.** Transmission line that uses the ground as one side of the circuit. **2.** A surface-wave transmission line that consists of a single conductor which has a dielectric coating or other treatment that confines the propagated energy close to the wire. { 'siŋ·gəl ¦wīr 'līn }

singly linked ring [COMPUT SCI] A cyclic arrangement of data elements in which searches may be performed in either a clockwise or a counterclockwise direction, but not both. { 'siŋ·glē ¦liŋkt 'riŋ }

sink [COMMUN] Equipment at the end of a communications channel that receives signals and may perform other functions such as error detection. [ELECTROMAG] The region of a Rieke diagram where the rate of change of frequency with respect to phase of the reflection coefficient is maximum for an oscillator; operation in this region may lead to unsatisfactory performance by reason of cessation or instability of oscillations. { siŋk }

sinusoidal angular modulation *See* angle modulation. { ˌsī·nə'sȯid·əl 'aŋ·gyə·lər ˌmäj·ə'lā·shən }

sinusoidal current *See* simple harmonic current. { ˌsī·nə'sȯid·əl 'kə·rənt }

sinusoidal oscillator [ELECTR] An oscillator circuit whose output voltage is a sine-wave function of time. Also known as harmonic oscillator; sine-wave oscillator. { ˌsī·nə'sȯid·əl 'as·əˌlād·ər }

SIP *See* single in-line package. { sip }

SISD [COMPUT SCI] A type of computer architecture in which there is a single instruction cycle, and operands are fetched in serial fashion into a single processing unit before execution. Acronym for single-instruction-stream, single-data-stream. { ¦es¦ī¦es'dē }

SIT *See* static induction transistor.

site [COMPUT SCI] A position available for the symbols of an inscription, for example, a digital place. { sīt }

situation-display tube [ELECTR] Large cathode-ray tube used to display tabular and vector messages pertinent to the various functions of an air defense mission. { ˌsich·ə'wā·shən di'splā ˌtüb }

six-phase circuit [ELEC] Combination of circuits energized by alternating electromotive forces which differ in phase by one-sixth of a cycle (60°). { 'siks ¦fāz 'sər·kət }

six-phase rectifier [ELECTR] A rectifier in which transformers are used to produce six alternating electromotive forces which differ in phase by one-sixth of a cycle, and which feed six diodes. { 'siks ¦fāz 'rek·təˌfī·ər }

size control [ELECTR] A control provided on a video display device for changing the size of a picture either horizontally or vertically. { 'sīz kənˌtrōl }

skeletal coding [COMPUT SCI] A set of incomplete instructions in symbolic form, intended to be completed and specialized by a processing program written for that purpose. { 'skel·əd·əl 'kōd·iŋ }

skew [COMPUT SCI] In character recognition, a condition arising at the read station whereby a character or a line of characters appears in a "twisted" manner in relation to a real or imaginary horizontal baseline. [ELECTR] **1.** The deviation of a received facsimile frame from rectangularity due to lack of synchronism between scanner and recorder, expressed numerically as the tangent of the angle of this deviation. **2.** The degree of nonsynchronism of supposedly parallel bits when bit-coded characters are read from magnetic tape. { skyü }

skew failure [COMPUT SCI] In character recognition, the condition that exists during document alignment whereby the document reference edge is not parallel to that of the read station. { 'skyü ˌfāl·yər }

skiatron *See* dark-trace tube. { 'skī·əˌträn }

skin antenna [ELECTROMAG] Flush-mounted aircraft antenna made by using insulating material to isolate a portion of the metal skin of the aircraft. { 'skin anˌten·ə }

skin depth [ELECTROMAG] The depth beneath the surface of a conductor, which is carrying current at a given frequency due to electromagnetic waves incident on its surface, at which the current density drops to one neper below the current density at the surface. { 'skin ˌdepth }

skin effect [ELEC] The tendency of alternating currents to flow near the surface of a conductor thus being restricted to a small part of the total sectional area and producing the effect of increasing the resistance. Also known as conductor skin effect; Kelvin skin effect. { 'skin iˌfekt }

skin resistance [ELEC] For alternating current of a given frequency, the direct-current resistance of a layer at the surface of a conductor whose thickness equals the skin depth. { 'skin riˌzis·təns }

skin tracking [ELECTROMAG] Tracking of an object by means of radar without using a beacon or other signal device on board the object being tracked. { 'skin ˌtrak·iŋ }

skiograph [ELECTR] An instrument used to measure the intensity of x-rays. { 'skī·əˌgraf }

skip [COMPUT SCI] **1.** In fixed-instruction-length digital computers, to bypass or ignore one or more instructions in an otherwise sequential process. **2.** Action of a computer printer that moves rapidly over a line so that a blank line appears in the printout. { skip }

skip chain [COMPUT SCI] A programming technique which matches a word against a set of test words; if there is a match, control is transferred (skipped) to a routine, otherwise the word is matched with the next test word in sequence. { 'skip ˌchān }

skip distance [ELECTROMAG] The minimum distance that radio waves can be transmitted between two points on the earth by reflection from the ionosphere, at a specified time and frequency. { 'skip ˌdis·təns }

skip effect [COMMUN] The existence of a circular-shaped area around a radio transmitter within which no radio signals are received, because ground signals are received only inside the oval and sky-wave signals are received only outside the oval. { 'skip iˌfekt }

skip fading [ELECTROMAG] Fading due to fluctuations of ionization density at the place in the ionosphere where the wave is reflected which causes the skip distance to increase or decrease. { 'skip ˌfād·iŋ }

skip flag [COMPUT SCI] The thirty-fifth bit of a channel command word which suppresses the transfer of data to main storage. { 'skip ˌflag }

skip keying [ELECTR] Reduction of radar pulse repetition frequency to submultiple of that normally used, to reduce mutual interference between radar or to increase the length of radar time base. { 'skip ˌkē·iŋ }

skip-searched chain [COMPUT SCI] A chain which has pointers and can therefore be searched without examining each link. { 'skip ˌsərcht ˌchān }

skip zone [COMMUN] The area between the outer limit of reception of radio high-frequency ground waves and the inner limit of reception of sky waves, where no signal is received. { 'skip ˌzōn }

sky wave [ELECTROMAG] A radio wave that travels upward into space and may or may not be returned to earth by reflection from the ionosphere. Also known as ionospheric wave. { 'skī ˌwāv }

sky-wave correction [ELECTR] The correction to be applied to the time difference readings of received sky waves to convert them to an equivalent ground-wave reading. { 'skī ˌwāv kəˈrek·shən }

sky-wave transmission delay [ELECTROMAG] Amount by which the time of transit from transmitter to receiver of a pulse carried by sky waves reflected once from the E layer exceeds the time of transit of the same pulse carried by ground waves. { 'skī ˌwāv tranzˈmish·ən diˌlā }

slab [ELECTR] A relatively thick-cut crystal from which blanks are obtained by subsequent transverse cutting. { slab }

Slater's rule [ELECTR] The ratio of the cathode radius to the anode radius of a magnetron is approximately equal to $(N - 4)/(N + 4)$, where N is the number of resonators. { 'slād·ərz ˌrül }

slave [COMPUT SCI] A terminal or computer that is controlled by another computer. [CONT SYS] A device whose motions are governed by instructions from another machine. { slāv }

slave antenna [ELECTROMAG] A directional antenna positioned in azimuth and elevation by a servo system; the information controlling the servo system is supplied by a tracking or positioning system. { 'slāv anˌten·ə }

slave mode *See* user mode. { 'slāv ˌmōd }

slave tube [ELECTR] A display monitor that is connected to another monitor and provides an identical display. { 'slāv ˌtüb }

sleep [COMPUT SCI] State of a computer system that halts, or a program that appears to be doing nothing because the program is caught in an endless loop. { 'slēp }

sleeve [ELEC] **1.** The cylindrical contact that is farthest from the tip of a phone plug. **2.** Insulating tubing used over wires or components. Also known as bushing; sleeving. [ENG] A cylindrical part designed to fit over another part. { slēv }

sleeve antenna [ELECTROMAG] A single vertical half-wave radiator, the lower half of which is a metallic sleeve through which the concentric feed line runs; the upper radiating portion, one quarter-wavelength long, connects to the center of the line. { 'slēv anˌten·ə }

sleeve dipole antenna [ELECTROMAG] Dipole antenna surrounded in its central portion by a coaxial cable. { 'slēv 'dīˌpōl anˈten·ə }

sleeving *See* sleeve. { 'slēv·iŋ }

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slewing motor [ELEC] A motor used to drive a radar antenna at high speed for slewing to pick up or track a target. { 'slü·iŋ ˌmōd·ər }

slew rate [COMPUT SCI] The speed at which a logic-seeking print head advances to the succeeding line and finds the position where it is to start printing. [CONT SYS] The maximum rate at which a system can follow a command. [ELECTR] The maximum rate at which the output voltage of an operational amplifier changes for a square-wave or step-signal input; usually specified in volts per microsecond. { 'slü ˌrāt }

slicer *See* amplitude gate. { 'slīs·ər }

slicer amplifier *See* amplitude gate. { 'slīs·ər ˌam·pləˌfī·ər }

slicing [ELECTR] Transmission of only those portions of a waveform lying between two amplitude values. { 'slīs·iŋ }

slide-back voltmeter [ELECTR] An electronic voltmeter in which an unknown voltage is measured indirectly by adjusting a calibrated voltage source until its voltage equals the unknown voltage. { 'slīd ˌbak 'vōltˌmēd·ər }

slider [ELEC] Sliding type of movable contact. { 'slīd·ər }

slide-wire bridge [ELEC] A bridge circuit in which the resistance in one or more branches is controlled by the position of a sliding contact on a length of resistance wire stretched along a linear scale. { 'slīd ˌwīr ˌbrij }

slide-wire potentiometer [ELEC] A potentiometer (variable resistor) which employs a movable sliding connection on a length of resistance wire. { 'slīd ˌwīr pəˌten·chē'äm·əd·ər }

sliding contact *See* wiping contact. { 'slīd·iŋ 'känˌtakt }

slip [ELEC] **1.** The difference between synchronous and operating speeds of an induction machine. Also known as slip speed. **2.** Method of interconnecting multiple wiring between switching units by which trunk number 1 becomes the first choice for the first switch, trunk number 2 first choice for the second switch, trunk number 3 first choice for the third switch, and so on. [ELECTR] Distortion produced in the recorded facsimile image which is similar to that produced by skew but is caused by slippage in the mechanical drive system. { slip }

slip ring [ELEC] A conductive rotating ring which, in combination with a stationary brush, provides a continuous electrical connection between rotating and stationary conductors; used in electric rotating machinery, synchros, gyroscopes, and scanning radar antennas. { 'slip ˌriŋ }

slit scan [COMPUT SCI] In character recognition, a magnetic or photoelectric device that obtains the horizontal structure of an inputted character by vertically projecting its component elements at given intervals. { 'slit ˌskan }

slot [COMPUT SCI] A connection to a computer bus into which printed circuit boards or integrated circuit boards can be inserted. [ELEC] One of the conductor-holding grooves in the face of the rotor or stator of an electric rotating machine. { slät }

slot antenna [ELECTROMAG] An antenna formed by cutting one or more narrow slots in a large metal surface fed by a coaxial line or waveguide. { 'slät anˌten·ə }

slot-bound [COMPUT SCI] Condition of a computer when all the slots in the machine's bus are filled with printed circuit boards, so that it is not possible to expand the machine's capacity by plugging in additional boards. { 'slätˌbaůnd }

slot coupling [ELECTROMAG] Coupling between a coaxial cable and a waveguide by means of two coincident narrow slots, one in a waveguide wall and the other in the sheath of the coaxial cable. { 'slät ˌkəp·liŋ }

slot-mask picture tube [ELECTR] An in-line gun-type color picture tube in which the shadow mask is perforated by short, vertical slots, and the screen is painted with vertical phosphor stripes. { 'slät ˌmask 'pik·chər ˌtüb }

slot radiator [ELECTROMAG] Primary radiating element in the form of a slot cut in the walls of a metal waveguide or cavity resonator or in a metal plate. { 'slät ˌrād·ēˌād·ər }

slotted line *See* slotted section. { 'släd·əd 'līn }

slotted section [ELECTROMAG] A section of waveguide or shielded transmission line in which the shield is slotted to permit the use of a movable probe for examination of standing waves. Also known as slotted line; slotted waveguide. { 'släd·əd ˌsek·shən }

slotted waveguide *See* slotted section. { 'släd·əd 'wāvˌgīd }

slot wedge [ELEC] The wedge that holds the windings in a slot in the rotor or stator core of an electrical machine. { 'slätˌwej }

slow-blow fuse [ELEC] A fuse that can withstand up to 10 times its normal operating current for a brief period, as required for circuits and devices which draw a very heavy starting current. { 'slō ˌblō 'fyüz }

slow death [ELECTR] The gradual change of transistor characteristics with time; this change is attributed to ions which collect on the surface of the transistor. { 'slō 'deth }

slowed-down video [ELECTR] Technique or method of transmitting radar data over narrow-bandwidth circuits; the procedure involves storing the radar video over the time required for the antenna to move through the beam width, and the subsequent sampling of this stored video at some periodic rate at which all of the range intervals of interest are sampled at least once each beam width or per azimuth quantum; the radar returns are quantized at the gap-filler radar site. { 'slōd ˌdaůn 'vid·ē·ō }

slow memory *See* slow storage. { 'slō 'mem·rē }

slow-motion video disk recorder [ELECTR] A magnetic disk recorder that stores one field of video information per revolution, for instant replay at normal speed or any degree of slow motion down to complete stopping of action. { 'slō ¦mō·shən 'vid·ēo ¦disk ri'kȯrd·ər }

slow-scan television [COMMUN] Television system that uses a slow rate of horizontal scanning, requiring typically 8 seconds for each complete scan of the scene; suitable for transmitting printed matter, photographs, and illustrations. Abbreviated SSTV. { 'slō ¦skan 'tel·ə,vizh·ən }

slow storage [COMPUT SCI] In computers, storage with a relatively long access time. Also known as slow memory. { 'slō 'stȯr·ij }

slow time scale [COMPUT SCI] In simulation by an analog computer, a time scale in which the time duration of a simulated event is greater than the actual time duration of the event in the physical system under study. Also known as extended time scale. { 'slō 'tīm ˌskāl }

slow wave [ELECTROMAG] A wave having a phase velocity less than the velocity of light, as in a ridge wave guide. { 'slō 'wāv }

SLSI circuit *See* super-large-scale integrated circuit. { ˌes,el,es'ī ˌsər·kət }

slug tuner [ELECTROMAG] Waveguide tuner containing one or more longitudinally adjustable pieces of metal or dielectric. { 'sləg ¦tün·ər }

slug tuning [ELECTROMAG] Means of varying the frequency of a resonant circuit by introducing a slug of material into either the electric field or magnetic field, or both. { 'sləg ¦tün·iŋ }

small computer system interface [COMPUT SCI] An interface standard or format for personal computers that allows the connection of up to seven peripheral devices. Abbreviated SCSI (scuzzy). { ¦smȯl kəm¦pyüd·ər ˌsis·təm 'in·tər ˌfās }

small-scale integration [ELECTR] Integration in which a complete major subsystem or system is fabricated on a single integrated-circuit chip that contains integrated circuits which have appreciably less complexity than for medium-scale integration. Abbreviated SSI. { 'smȯl ¦skāl ˌint·ə'grā·shən }

small-signal parameter [ELECTR] One of the parameters characterizing the behavior of an electronic device at small values of input, for which the device can be represented by an equivalent linear circuit. { 'smȯl ¦sig·nəl pə'ram·əd·ər }

small talk [COMPUT SCI] A high-level, user-friendly programming language that incorporates the functions of an operating system. { 'smȯl ˌtȯk }

smart card [COMPUT SCI] A plastic card in which is embedded a microprocessor that is usually programmed to hold information about the card holder or user. Also known as chip card. { 'smärt ˌkärd }

smart sensor [ENG] A microsensor integrated with signal-conditioning electronics such as analog-to-digital converters on a single silicon chip to form an integrated microelectromechanical component that can process information itself or communicate with an embedded microprocessor. Also known as intelligent sensor. { ˌsmärt 'sen·sər }

smart structures [ENG] Structures that are capable of sensing and reacting to their environment in a predictable and desired manner, through the integration of various elements, such as sensors, actuators, power sources, signal processors, and communications network. In addition to carrying mechanical loads, smart structures may alleviate vibration, reduce acoustic noise, monitor their own condition and environment, automatically perform precision alignments, or change their shape or mechanical properties on command. { ˌsmärt 'strək·chərz }

smart terminal *See* intelligent terminal. { 'smärt 'tər·mən·əl }

smart tool [CONT SYS] A robot end effector or fixed tool that uses sensors to measure the tool's position relative to reference markers on a workpiece or jig, and an actuator to adjust the tool's position with respect to the workpiece. { 'smärt ˌtül }

SMATV system *See* satellite master antenna television system. { ¦es,em,ā,tē'vē ˌsis·təm }

smear [ELECTR] A video picture defect in which objects appear to be extended horizontally beyond their normal boundaries in a blurred or smeared manner; one cause is excessive attenuation of high video frequencies in an analog television receiver. { smir }

S meter *See* signal-strength meter. { 'es ˌmēd·ər }

smiley *See* emoticon. { 'smī·lē }

Smithell's burner [ENG] Two concentric tubes that can be added to a bunsen burner to separate the inner and outer flame cones. { 'smith·əlz ˌbər·nər }

smoke [ENG] Dispersions of finely divided (0.01–5.0 micrometers) solids or liquids in a gaseous medium. { smōk }

smoke chamber [ENG] That area in a fireplace directly above the smoke shelf. { 'smōk ˌchām·bər }

smoke detector [ENG] A photoelectric system for an alarm when smoke in a chimney or other location exceeds a predetermined density. { 'smōk di,tek·tər }

smoke point [ENG] The maximum flame height in millimeters at which kerosine will burn without smoking, tested under standard conditions; used as a measure of the burning cleanliness of jet fuel and kerosine. { 'smōk ˌpȯint }

smoke shelf [ENG] A horizontal surface directly behind the throat of a fireplace to prevent downdrafts. { 'smōk ˌshelf }

smokestack [ENG] A chimney for the discharge of flue gases from a furnace operation such as in a steam boiler, powerhouse, heating plant, ship, locomotive, or foundry. { 'smōkˌstak }

smoke test [ENG] A test used on kerosine to determine the highest point to which the flame can be turned before smoking occurs. { 'smōk ˌtest }

smoke washer [ENG] A device for removing particles from smoke by forcing it through a spray of water. { 'smōk ˌwäsh·ər }

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smooth blasting [ENG] Blasting to ensure even faces without cracks in the rock. { 'smüth ˌblast·iŋ }

smooth drilling [ENG] Drilling in a rock formation in which a fast rotation of the drill stem, a fast rate of penetration, and a high recovery of core can be achieved with vibration-free rotation of the drill stem. { 'smüth 'dril·iŋ }

smoothing [ENG] Making a level, or continuously even, surface. { 'smüth·iŋ }

smoothing choke [ELECTR] Iron-core choke coil employed as a filter to remove fluctuations in the output current of a vacuum-tube rectifier or direct-current generator. { 'smüth·iŋ ˌchōk }

smoothing circuit *See* ripple filter. { 'smüth·iŋ ˌsər·kət }

smoothing filter *See* ripple filter. { 'smüth·iŋ ˌfil·tər }

smoothing plane [ENG] A finely set hand tool, usually 5.5–10 inches (14–25.4 centimeters) long, for finishing small areas on wood. { 'smüth·iŋ ˌplān }

smother kiln [ENG] A kiln into which smoke can be introduced for blackening pottery. { 'smə th·ər ˌkil }

SMPT *See* Simple Mail Transfer Protocol.

smudging [ENG] A frost-preventive measure used in orchards; properly, it means the production of heavy smoke, supposed to prevent radiational cooling, but it is generally applied to both heating and smoke production. { 'smə j·iŋ }

S/N *See* signal-to-noise ratio.

snake hole [ENG] **1.** A blasting hole bored directly under a boulder. **2.** A drill hole used in quarrying or bench blasting. { 'snāk ˌhōl }

snaking [ENG] Towing a load with a long cable. { 'snāk·iŋ }

snap-action switch [ELEC] A switch that responds to very small movements of its actuating button or lever and changes rapidly and positively from one contact position to the other; the trademark of one version is Micro Switch. Also known as sensitive switch. { 'snap ˌak·shən ˌswich }

snap-back forming [ENG] A plastic-sheet-forming technique in which an extended, heated, plastic sheet is allowed to contract over a form shaped to the desired final contour. { 'snap ˌbak ˌfȯrm·iŋ }

snap fastener [ENG] A fastener consisting of a ball on one edge of an article that fits in a socket on an opposed edge, and used to hold edges together, such as those of a garment. { 'snap ˌfas·ən·ər }

snap gage [ENG] A device with two flat, parallel surfaces spaced to control one limit of tolerance of an outside diameter or a length. { 'snap ˌgāj }

snap hook *See* spring hook. { 'snap ˌhůk }

snap-off diode [ELECTR] Planar epitaxial passivated silicon diode that is processed so a charge is stored close to the junction when the diode is conducting; when reverse voltage is applied, the stored charge then forces the diode to snap off or switch rapidly to its blocking state. { 'snap ˌȯf 'dī ˌōd }

snap-on ammeter [ELEC] An ac ammeter having a magnetic core in the form of hinged jaws that can be snapped around the current-carrying wire. Also known as clamp-on ammeter. { 'snap ˌȯn 'am ˌēd·ər }

snapper [ENG] A device for collecting samples from the ocean bottom, and which closes to prevent the sample from dropping out as it is raised to the surface. { 'snap·ər }

snap ring [ENG] A form of spring used as a fastener; the ring is elastically deformed, put in place, and allowed to snap back toward its unstressed position into a groove or recess. { 'snap ˌriŋ }

snapshot [COMPUT SCI] The storing of the entire contents of the memory, including status indicators and hardware registers. { 'snap ˌshät }

snapshot dump [COMPUT SCI] An edited printout of selected parts of the contents of main memory, performed at one or more times during the execution of a program without materially affecting the operation of the program. { 'snap ˌshät ˌdəmp }

snapshot program [COMPUT SCI] A program that provides dumps of certain portions of memory when certain instructions are executed or when certain conditions are fulfilled. { 'snap ˌshät ˌprō·grəm }

snatch block [ENG] A pulley frame or sheave with an eye through which lashing can be passed to fasten it to a scaffold or pole. { 'snach ˌbläk }

snatch plate [ENG] A thick steel plate through which a hole about one-sixteenth of an inch larger than the outside diameter of the drill rod on which it is to be used is drilled; the plate is slipped over the drill rod and one edge is fastened to a securely anchored chain, and if rods must be pulled because high-pressure water is encountered, the eccentric pull of the chain causes the outside of the rods to be gripped and held against the pressure of water; the rod is moved a short distance out of the hole each time the plate is tapped. { 'snach ˌplāt }

S-N diagram [ENG] In fatigue testing, a graphic representation of the relationship of stress S and the number of cycles N before failure of the material. { ˌes ˌen 'dī·əˌgram }

sneak path [COMPUT SCI] In computers, an undesired circuit through a series-parallel configuration. { 'snēk ˌpath }

snifter valve [ENG] A valve on a pump that allows air to enter or escape, and accumulated water to be released. { 'snif·tər ˌvalv }

snivet [ELECTR] Straight, jagged, or broken vertical black line appearing near the right-hand edge of a television receiver screen. { 'sniv·ət }

SNOBOL [COMPUT SCI] A computer programming language that has significant applications in program compilation and generation of symbolic equations. Derived from String-Oriented-Symbolic Language. { 'snō ˌbōl }

snooperscope [ELECTR] An infrared source, an infrared image converter, and a battery-operated high-voltage direct-current source constructed in portable form to permit a foot soldier or other user to see objects in total darkness; infrared radiation sent out by the infrared source is reflected

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back to the snooperscope and converted into a visible image on the fluorescent screen of the image tube. { 'snüp·ər,skōp }

snorkel [ENG] Any tube which supplies air for an underwater operation, whether it be for material or personnel. { 'snȯr·kəl }

snow [ELECTR] Small, random, white spots produced on an analog television or radar screen by inherent noise signals originating in the receiver. { snō }

snow bin [ENG] A box for measuring the amount of snowfall; a type of snow gage. { 'snō ,bin }

snow mat [ENG] A device used to mark the surface between old and new snow, consisting of a piece of white duck 28 inches (71 centimeters) square, having in each corner triangular pockets in which are inserted slats placed diagonally to keep the mat taut and flat. { 'snō ,mat }

snow pillow [ENG] A device used to record the changing weight of the snow cover at a point, consisting of a fluid-filled bladder lying on the ground with a pressure transducer or a vertical pipe and float connected to it. { 'snō ,pil·ō }

snow resistograph [ENG] An instrument for recording a hardness profile of a snow cover by recording the force required to move a blade up through the snow. { 'snō ri'zis·tə,graf }

snow sampler [ENG] A hollow tube for collecting a sample of snow in place. Also known as snow tube. { 'snō ,sam·plər }

snow scale *See* snow stake. { 'snō ,skāl }

snow stake [ENG] A wood scale, calibrated in inches, used in regions of deep snow to measure its depth; it is bolted to a wood post or angle iron set in the ground. Also known as snow scale. { 'snō ,stāk }

snow static [ELECTROMAG] Precipitation static caused by falling snow. { 'snō ,stad·ik }

snow tube *See* snow sampler. { 'snō ,tüb }

SNR *See* signal-to-noise ratio.

Snyder sampler [ENG] A mechanical device for obtaining small representative quantities from a moving stream of pulverized or granulated solids; it consists of a cast-iron plate revolving in a vertical plane on a horizontal axis with an inclined sample spout; the material to be sampled comes to the sampler by way of an inclined chute whenever the sample spout comes in line with the moving stream. { 'snī·dər 'sam·plər }

soap bubble test [ENG] A leak test in which a soap solution is applied to the surface of the vessel under internal pressure test; soap bubbles form if the tracer gas leaks from the vessel. { 'sōp ¦bəb·əl ,test }

socket [ELEC] A device designed to provide electric connections and mechanical support for an electronic or electric component requiring convenient replacement. [ENG] A device designed to receive and grip the end of a tubular object, such as a tool or pipe. { 'säk·ət }

socket-head screw [ENG] A screw fastener with a geometric recess in the head into which an appropriate wrench is inserted for driving and turning, with consequent improved nontamperability. { 'säk·ət ¦hed ,skrü }

socket wrench [ENG] A wrench with a socket to fit the head of a bolt or a nut. { 'säk·ət ,rench }

soda-acid extinguisher [ENG] A fire-extinguisher from which water is expelled at a high rate by the generation of carbon dioxide, the result of mixing (when the extinguisher is tilted) of sulfuric acid and sodium bicarbonate. { 'sōd·ə 'as·əd ik'stiŋ·gwə·shər }

sodar [ENG] Sound-wave transmitting and receiving equipment that is used to remotely measure the vertical turbulence structure and wind profile of the lower layer of the atmosphere by analyzing sound reflected in scattering by atmospheric turbulence. Derived from sonic detection and ranging. { 'sō,där }

sodium amalgam-oxygen cell [ELEC] Fuel cell system in which materials functioning in the dual capacity of fuel and anode are consumed continuously; low operating temperatures and high power-to-weight ratios are significant characteristics of the system. { 'sōd·ē·əm ə'mal·gəm 'äk·sə·jən ,sel }

sodium/sulfur battery [ELEC] A storage battery that operates at temperatures of 300–350°C (570–660°F) and has a liquid sodium anode and liquid sulfur cathode separated by a solid ceramic electrolyte that conducts sodium ions. { 'sōd·ē·əm 'səl·fər 'bad·ə·rē }

sodium-vapor lamp [ELECTR] A discharge lamp containing sodium vapor, used chiefly for outdoor illumination. { 'sōd·ē·əm ¦vā·pər 'lamp }

soft automation [ENG] Automatic control, chiefly through the use of computer processing, with relatively little reliance on computer hardware. { 'sȯft ,ȯd·ə'mā·shən }

soft computing [COMPUT SCI] A family of methods that imitate human intelligence with the goal of creating tools provided with some human-like capabilities (such as learning, reasoning, and decision making), and are based on fuzzy logic, neural networks, and probabilistic reasoning techniques such as genetic algorithms. { ,sȯft kəm'pyüd·iŋ }

soft copy [COMPUT SCI] Information that is displayed on a screen, given by voice, or stored in a form that cannot be read directly by a person, as on magnetic tape, disk, or microfilm. { 'sȯft 'käp·ē }

soft-copy terminal [COMPUT SCI] A computer terminal that presents its output through an electronic display, rather than printing it on paper. { 'sȯft ¦käp·ē 'tər·mən·əl }

soft crash [COMPUT SCI] A halt in computer operations in which the computer operator has enough warning time to take action to minimize the effects of the stoppage. { 'sȯft 'krash }

soft edit [COMPUT SCI] A checking and correction process that allows data in which problems have been identified to be accepted by a computer system. { 'sȯft 'ed·it }

soft error [COMPUT SCI] An error that occurs in automatic operations but does not recur when the operation is attempted a second time. { 'sȯft 'er·ər }

soft failure [COMPUT SCI] A failure that can be overcome without the assistance of a person

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with specialized knowledge to repair the device. { 'sȯft 'fāl·yər }

soft flow [ENG] The free-flowing characteristics of a plastic material under conventional molding conditions. { 'sȯft 'flō }

soft font [COMPUT SCI] A typeface or set of typefaces that is contained in the software of a computer system and is transmitted to the printer before printing. Also known as downloadable font. { 'sȯft 'fänt }

soft limiting [ELECTR] Limiting in which there is still an appreciable increase in output for increases in input signal strength up into the range at which limiting action occurs. { 'sȯft 'lim·əd·iŋ }

soft page break [COMPUT SCI] A page break that is inserted in a document by a word-processing program, and can move if text is added, deleted, or reformatted above it. { 'sȯft 'pāj ˌbrāk }

soft patch [COMPUT SCI] A temporary change in a computer program's machine language that is carried out while the program is in memory, and thus prevails only for the duration of a single run of the program. { 'sȯft 'pach }

soft return [COMPUT SCI] A control code that is automatically entered into a text document by the word-processing program to mark the end of a line, based on the current right margin. { 'sȯft ri'tərn }

soft sector [COMPUT SCI] A disk or drum format in which the locations of sectors are determined by control information written on the storage medium rather than by some physical means. { 'sȯft 'sek·tər }

soft tube [ELECTR] **1.** An x-ray tube having a vacuum of about 0.000002 atmosphere (0.2 pascal), the remaining gas being left in intentionally to give less-penetrating rays than those of a more completely evacuated tube. **2.** *See* gassy tube. { 'sȯft ˌtüb }

software [COMPUT SCI] The totality of programs usable on a particular kind of computer, together with the documentation associated with a computer or program, such as manuals, diagrams, and operating instructions. { 'sȯf,wer }

software compatibility [COMPUT SCI] Property of two computers, with respect to a particular programming language, in which a source program from one machine in that language will compile and execute to produce acceptably similar results in the other. { 'sȯf,wer kəm,pad·ə'bil·əd·ē }

software driver [COMPUT SCI] Software that is designed to handle the interaction between a computer and its peripheral equipment, changing the format of data as necessary. { 'sȯf,wer 'drīv·ər }

software engineering [COMPUT SCI] The systematic application of scientific and technological knowledge, through the medium of sound engineering principles, to the production of computer programs, and to the requirements definition, functional specification, design description, program implementation, and test methods that lead up to this code. { 'sȯf,wer ˌen·jə'nir·iŋ }

software flexibility [COMPUT SCI] The ability of software to change easily in response to different user and system requirements. { 'sȯf,wer ˌflek·sə'bil·əd·ē }

software floating point [COMPUT SCI] Special routines that allow high-level programming languages to perform floating-point arithmetic on computer hardware designed for integer arithmetic. { 'sȯf,wer 'flōd·iŋ 'pȯint }

software interface [COMPUT SCI] A computer language whereby computer programs can communicate with each other, and one language can call upon another for assistance. { 'sȯf,wer 'in·tər·fās }

software maintenance [COMPUT SCI] The correction of errors in software systems and the remedying of inadequacies in running the software. { 'sȯf,wer ˌmānt·ən,əns }

software metric [COMPUT SCI] **1.** A rule for quantifying some characteristic or attribute of a computer software entity. **2.** One of a set of techniques whose aim is to measure the quality of a computer program. { 'sȯf,wer 'me·trik }

software monitor [COMPUT SCI] A system, used to evaluate the performance of computer software, that is similar to accounting packages, but can collect more data concerning usage of various components of a computer system and is usually part of the control program. { 'sȯf,wer ˌmän·əd·ər }

software multiplexing [COMPUT SCI] A procedure used in a time-sharing or multiprogrammed system in which the central processing unit, acting under control of a software algorithm, interleaves its attention between a family of programs waiting for service, in such a way that the programs appear to be processed in parallel. { 'sȯf,wer 'məl·ti,pleks·iŋ }

software package [COMPUT SCI] A program for performing some specific function or calculation which is useful to more than one computer user and is sufficiently well documented to be used without modification on a defined configuration of some computer system. { 'sȯf,wer ˌpak·ij }

software path length [COMPUT SCI] The number of machine-language instructions required to carry out some specified task. Also known as path length. { 'sȯf,wer 'path ˌleŋkth }

software protection [COMPUT SCI] The use of various techniques to prevent the unauthorized duplication of software. Also known as copy protection. { 'sȯf,wer prəˌtek·shən }

soft-wired numerical control *See* computer numerical control. { 'sȯf ˌwīrd nü'mer·ə·kəl kən'trōl }

solar battery [ELECTR] An array of solar cells, usually connected in parallel and series. { 'sō·lər 'bad·ə·rē }

solar cell [ELECTR] A *pn*-junction device which converts the radiant energy of sunlight directly and efficiently into electrical energy. { 'sō·lər 'sel }

solar generator [ELEC] An electric generator powered by radiation from the sun and used in some satellites. { 'sō·lər 'jen·əˌrād·ər }

solar noise *See* solar radio noise. { 'sō·lər 'nȯiz }

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solar radio noise [ELECTROMAG] Radio noise originating at the sun, and increasing greatly in intensity during sunspots and flares; it is heard as a hissing noise on shortwave radio receivers. Also known as solar noise. { 'sō·lər 'rād·ē·ō ˌnȯiz }

solar sensor [ELECTR] A light-sensitive diode that sends a signal to the attitude-control system of a spacecraft when it senses the sun. Also known as sun sensor. { 'sō·lər 'sen·sər }

solder-ball flip chip *See* flip chip. { ¦säd·ər ˌbȯl 'flip ˌchip }

soldering lug [ELEC] A stamped metal strip used as a terminal to which wires can be soldered. { 'säd·ə·riŋ ˌləg }

solderless contact *See* crimp contact. { 'säd·ər·ləs 'kän¦takt }

solderless wrapped connection *See* wire-wrap connection. { 'säd·ər·ləs 'rapt kə'nek·shən }

solder track [ELECTR] A conducting path on a printed circuit board that is formed by applying molten solder to the board. { 'säd·ər ˌtrak }

sole [ELECTR] Electrode used in magnetrons and backward-wave oscillators to carry a current that generates a magnetic field in the direction wanted. { sōl }

solenoid [ELECTROMAG] **1.** Also known as electric solenoid. **2.** An electrically energized coil of insulated wire which produces a magnetic field within the coil. **3.** In particular, a coil that surrounds a movable iron core which is pulled to a central position with respect to the coil when the coil is energized by sending current through it. { 'säl·əˌnȯid }

solid-dielectric capacitor [ELEC] A capacitor whose dielectric is one of several solid materials such as ceramic, mica, glass, plastic film, or paper. { 'säl·əd ¦dī·ə¦lek·trik kə'pas·əd·ər }

solid-electrolyte battery [ELEC] A primary battery whose electrolyte is either a solid crystalline salt, such as silver iodide or lead chloride, or an ion-exchange membrane; in either case, conductivity is almost entirely ionic. { 'säl·əd i'lek·trəˌlīt 'bad·ə·rē }

solid-electrolyte fuel cell [ELEC] Self-contained fuel cell in which oxygen is the oxidant and hydrogen is the fuel; the oxidant and fuel are kept separated by a solid electrolyte which has a crystalline structure and a low conductivity. { 'säl·əd i'lek·trəˌlīt 'fyül ˌsel }

solid electrolytic capacitor [ELEC] An electrolytic capacitor in which the dielectric is an anodized coating on one electrode, with a solid semiconductor material filling the rest of the space between the electrodes. { 'säl·əd i¦lek·trə¦lid·ik kə'pas·əd·ər }

solid insulator [ELEC] An electric insulator made of a solid substance, such as sulfur, polystyrene, rubber, or porcelain. { 'säl·əd 'in·səˌlād·ər }

solid logic technology [ELECTR] A method of computer construction that makes use of miniaturized modules, resulting in faster circuitry because of the reduced distances that current must travel. { 'säl·əd ¦läj·ik tek'näl·ə·jē }

solid state [ENG] Pertaining to a circuit, device, or system that depends on some combination of electrical, magnetic, and optical phenomena within a solid that is usually a crystalline semiconductor material. { 'säl·əd 'stāt }

solid-state battery [ELEC] A battery in which both the electrodes and the electrolyte are solid-state materials. { 'säl·əd ¦stāt 'bad·ə·rē }

solid-state circuit [ELECTR] Complete circuit formed from a single block of semiconductor material. { 'säl·əd ¦stāt 'sər·kət }

solid-state circuit breaker [ELECTR] A circuit breaker in which a Zener diode, silicon controlled rectifier, or solid-state device is connected to sense when load terminal voltage exceeds a safe value. { 'säl·əd ¦stāt 'sər·kət ˌbrāk·ər }

solid-state component [ELECTR] A component whose operation depends on the control of electrical or magnetic phenomena in solids, such as a transistor, crystal diode, or ferrite device. { 'säl·əd ¦stāt kəm'pō·nənt }

solid-state device [ELECTR] A device, other than a conductor, which uses magnetic, electrical, and other properties of solid materials, as opposed to vacuum or gaseous devices. { 'säl·əd ¦stāt di'vīs }

solid-state image sensor *See* charge-coupled image sensor. { 'säl·əd ¦stāt 'im·ij ˌsen·sər }

solid-state lamp *See* light-emitting diode. { 'säl·əd ¦stāt 'lamp }

solid-state laser [OPTICS] A laser in which a semiconductor material produces the coherent output beam. { 'säl·əd ¦stāt 'lā·zər }

solid-state memory [COMPUT SCI] A computer memory whose elements consist of integrated-circuit bistable multivibrators in which bits of information are stored as one of two states. { 'säl·əd ¦stāt 'mem·rē }

solid-state power amplifier [ELECTR] An amplifier that uses field-effect transistors to provide useful amplification at gigahertz frequencies. { ˌsäl·əd ˌstāt 'paù·ər ˌam·plə,fī·ər }

solid-state relay [ELECTR] A relay that uses only solid-state components, with no moving parts. Abbreviated SSR. { 'säl·əd ¦stāt 'rē,lā }

solid-state switch [ELECTR] A microwave switch in which a semiconductor material serves as the switching element; a zero or negative potential applied to the control electrode will reverse-bias the switch and turn it off, and a slight positive voltage will turn it on. { 'säl·əd ¦stāt 'swich }

solid-state thyratron [ELECTR] A semiconductor device, such as a silicon controlled rectifier, that approximates the extremely fast switching speed and power-handling capability of a gaseous thyratron tube. { 'säl·əd ¦stāt 'thī·rəˌträn }

solid-state uninterruptible power system [ELEC] An uninterruptible power system in which the load operates continuously from the output of a dc-to-ac static inverter powered by a battery. { 'säl·əd ¦stāt ˌən,int·ə'rəp·tə·bəl 'paù·ər ˌsis·təm }

solid tantalum capacitor [ELEC] An electrolytic capacitor in which the anode is a porous pellet of tantalum; the dielectric is an extremely thin layer of tantalum pentoxide formed by anodization of

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the exterior and interior surfaces of the pellet; the cathode is a layer of semiconducting manganese dioxide that fills the pores of the anode over the dielectric. { 'säl·əd ¦tant·əl·əm kə'pas·əd·ər }

solion [ELEC] An electrochemical device in which amplification is obtained by controlling and monitoring a reversible electrochemical reaction. { ¦sōl'ī,än }

solution ceramic [ELEC] A nonbrittle, inorganic ceramic insulating coating that can be applied to wires at a low temperature; examples include ceria, chromia, titania, and zirconia. { sə'lü·shən sə'ram·ik }

solvent welding [ENG] A technique for joining plastic pipework in which a mixture of solvent and cement is applied to the pipe end and to the socket, with the parts then being joined and allowed to set. { 'säl·vənt ,weld·iŋ }

Sommerfeld equation *See* Sommerfeld formula. { 'zōm·ər,felt i,kwā·zhən }

Sommerfeld formula [ELECTROMAG] An approximate formula for the field strength of electromagnetic radiation generated by an antenna at distances small enough so that the curvature of the earth may be neglected, in terms of radiated power, distance from the antenna, and various constants and parameters. Also known as Sommerfeld equation. { 'zȯm·ər,felt ,fȯr·myə·lə }

sonar [ENG] **1.** A system that uses underwater sound, at sonic or ultrasonic frequencies, to detect and locate objects in the sea, or for communication; the commonest type is echo-ranging sonar; other versions are passive sonar, scanning sonar, and searchlight sonar. Derived from sound navigation and ranging. **2.** *See* sonar set. { 'sō,när }

sonar array [ELECTR] An arrangement of several sonar transducers or sonar projectors, appropriately spaced and energized to give proper directional characteristics. { 'sō,när ə,rā }

sonar detector *See* sonar receiver. { 'sō,när di ,tek·tər }

sonar projector [ENG ACOUS] An electromechanical device used under water to convert electrical energy to sound energy; a crystal or magnetostriction transducer is usually used for this purpose. { 'sō,när prə,jek·tər }

sonar receiver [ELECTR] A receiver designed to intercept and amplify the sound signals reflected by an underwater target and display the accompanying intelligence in useful form; it may also pick up other underwater sounds. Also known as sonar detector. { 'sō,när ri'sē·vər }

sonar resolver [ELECTR] A resolver used with echo-ranging and depth-determining sonar to calculate and record the horizontal range of a sonar target, as required for depth-bombing. { 'sō,när ri,zäl·vər }

sonar self-noise [ELECTR] Unwanted sonar signals generated in the sonar equipment itself. { 'sō,när 'self'nȯiz }

sonar set [ENG] A complete assembly of sonar equipment for detecting and ranging or for communication. Also known as sonar. { 'sō,när ,set }

sonar transducer [ENG ACOUS] A transducer used under water to convert electrical energy to sound energy and sound energy to electrical energy. { 'sō,när tranz,dü·sər }

sonar transmitter [ELECTR] A transmitter that generates electrical signals of the proper frequency and form for application to a sonar transducer or sonar projector, to produce sound waves of the same frequency in water; the sound waves may carry intelligence. { 'sō,när tranz ,mid·ər }

son file [COMPUT SCI] The master file that is currently being updated. { 'sən ,fīl }

sonic delay line *See* acoustic delay line. { 'sän·ik di'lā ,līn }

sophisticated robot [CONT SYS] A robot that can be programmed and is controlled by a microprocessor. { sə'fis·tə,kād·əd 'rō,bät }

sophisticated vocabulary [COMPUT SCI] An advanced and elaborate set of instructions; a computer with a sophisticated vocabulary can go beyond the more common mathematical calculations such as addition, multiplication, and subtraction, and perform operations such as linearize, extract square root, and select highest number. { sə'fis·tə,kād·əd və'kab·yə,ler·ē }

sort [COMPUT SCI] **1.** To rearrange a set of data items into a new sequence, governed by specific rules of precedence. **2.** The program designed to perform this activity. { sȯrt }

sort algorithm [COMPUT SCI] The methods followed in arranging a set of data items into a sequence according to precise rules. { 'sȯrt ¦al·gə,rith·əm }

sorter *See* sequencer. { 'sȯrd·ər }

sort field [COMPUT SCI] A field in a record that is used in determining the final sorted sequence of the records. { 'sȯrt ,fēld }

sort generator [COMPUT SCI] A computer program that produces other programs which arrange collections of items into sequences as specified by parameters in the original program. { 'sȯrt ,jen·ə,rād·ər }

sort key [COMPUT SCI] A key used as a basis for determining the sequence of items in a set. { 'sȯrt ,kē }

sort/merge [COMPUT SCI] To combine two or more similar files, with the records arranged in the appropriate order, according to precise rules. { 'sȯrt 'mərj }

sort/merge package [COMPUT SCI] A set of programs capable of sorting and merging data files. { 'sȯrt 'mərj ,pak·ij }

sort order [COMPUT SCI] The sequence into which a collection of records are arranged after they have been sorted. { 'sȯrt ,ȯr·dər }

sort pass [COMPUT SCI] Any one of a collection of similar procedures carried out during a sort operation in which a part of the sort is completed. { 'sȯrt ,pas }

sortworker [COMPUT SCI] A file created temporarily by a computer program to hold intermediate results when the amount of data to be sorted exceeds the available storage space. { 'sȯrt ,wər·kər }

SOS [COMMUN] The distress signal in radiotelegraphy, consisting of the letters S, O, and S of the international Morse code.

sound analyzer [ENG] An instrument which measures the amount of sound energy in various frequency bands; it generally consists of a set of fixed electrical filters or a tunable electrical filter, along with associated amplifiers and a meter which indicates the filter output. { 'saùnd ˌan·əˌlīz·ər }

sound board [COMPUT SCI] An adapter which provides a computer with the capability of reproducing and recording digitally encoded sound. Also known as audio adapter; sound card. { 'saùn ˌbȯrd }

sound card *See* sound board. { 'saùn kärd }

sound carrier [COMMUN] The analog television carrier that is frequency-modulated by the sound portion of a television program; the unmodulated center frequency of the sound carrier is 4.5 megahertz higher than the video carrier frequency for the same television channel. { 'saùnd ˌkar·ē·ər }

sound channel [ELECTR] The series of stages that handles only the sound signal in a television receiver. { 'saùnd ˌchan·əl }

sound filmstrip [ENG ACOUS] A filmstrip that has accompanying sound on a separate disk or tape, which is manually or automatically synchronized with projection of the pictures in the strip. { 'saùnd 'filmˌstrip }

sound gate [ENG ACOUS] The gate through which film passes in a sound-film projector for conversion of the sound track into audio-frequency signals that can be amplified and reproduced. { 'saùnd ˌgāt }

sound head [ENG ACOUS] **1.** The section of a sound motion picture projector that converts the photographic or magnetic sound track to audible sound signals. **2.** In a sonar system, the cylindrical container for the transmitting projector and the receiving hydrophone. { 'saùnd ˌhed }

sound-level meter [ENG] An instrument used to measure noise and sound levels in a specified manner, the meter may be calibrated in decibels or volume units and includes a microphone, an amplifier, an output meter, and frequency-weighting networks. { 'saùnd ˈlev·əl ˌmēd·ər }

sound navigation and ranging *See* sonar. { 'saùnd ˌnav·əˈgā·shən ən 'rānj·iŋ }

sound-powered telephone [ENG ACOUS] A telephone operating entirely on current generated by the speaker's voice, with no external power supply; sound waves cause a diaphragm to move a coil back and forth between the poles of a powerful but small permanent magnet, generating the required audio-frequency voltage in the coil. { 'saùnd ˈpaù·ərd 'tel·əˌfōn }

sound production [ENG ACOUS] Conversion of energy from mechanical or electrical into acoustical form, as in a siren or loudspeaker. { 'saùnd prəˌdək·shən }

sound reception [ENG ACOUS] Conversion of acoustical energy into another form, usually electrical, as in a microphone. { 'saùnd riˌsep·shən }

sound recording [ENG ACOUS] The process of recording sound signals so they may be reproduced at any subsequent time, as on a disk, sound track, or magnetic tape. { 'saùnd riˌkȯrd·iŋ }

sound-reinforcement system [ENG ACOUS] An electronic means for augmenting the sound output of a speaker, singer, or musical instrument in cases where it is either too weak to be heard above the general noise or too reverberant; basic elements of such a system are microphones, amplifiers, volume controls, and loudspeakers. Also known as public address system. { 'saùnd ˌrē·inˈfȯrs·mənt ˌsis·təm }

sound-reproducing system [ENG ACOUS] A combination of transducing devices and associated equipment for picking up sound at one location and time and reproducing it at the same or some other location and at the same or some later time. Also known as audio system; reproducing system; sound system. { 'saùnd ˌrē·prəˈdüs·iŋ ˌsis·təm }

sound spectrograph [ENG ACOUS] An instrument that records and analyzes the spectral composition of audible sound. { 'saùnd 'spek·trəˌgraf }

soundstripe [ENG ACOUS] A longitudinal stripe of magnetic material placed on some motion picture films for recording a magnetic sound track. { 'saùndˌstrīp }

sound system *See* sound-reproducing system. { 'saùnd ˌsis·təm }

sound track [ENG ACOUS] A narrow band, usually along the margin of a sound film, that carries the sound record; it may be a variable-width or variable-density optical track or a magnetic track. { 'saùnd ˌtrak }

sound transducer *See* electroacoustic transducer. { 'saùnd tranzˌdüs·ər }

sound trap [ELECTR] A wave trap in an analog television receiver circuit that prevents sound signals from entering the picture channels. { 'saùnd ˌtrap }

source [ELEC] The circuit or device that supplies signal power or electric energy or charge to a transducer or load circuit. [ELECTR] The terminal in a field-effect transistor from which majority carriers flow into the conducting channel in the semiconductor material. { sȯrs }

source address [COMPUT SCI] The first address of a two-address instruction (the sound address is known as the destination address). { 'sȯrs 'adˌres }

source code [COMPUT SCI] The statements in which a computer program is initially written before translation into machine language. { 'sȯrs ˌkōd }

source data automation equipment [COMPUT SCI] Equipment (except paper tape and magnetic tape cartridge typewriters acquired separately and not operated in support of a computer) which, as a by-product of its operation, produces a record in a medium which is acceptable by automatic data-processing equipment. { 'sȯrs ˈdad·əˌȯd·əˈmā·shən iˌkwip·mənt }

source data capture [COMPUT SCI] The procedures for entering source data into a computer system. { 'sȯrs 'dad·əˌkap·chər }

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source data entry [COMPUT SCI] Entry of data into a computer system directly from its source, without transcription. { 'sȯrs 'dad·ə ˌen·trē }

source degeneration [ELECTR] The addition of a circuit element between a transistor source and ground, with several effects, including a reduction in gain. { 'sȯrs dəˌjen·ə'rā·shən }

source document [COMPUT SCI] The original medium containing the basic data to be used by a data-processing system, from which the data are converted into a form which can be read into a computer. Also known as original document. { 'sȯrs ˌdäk·yə·mənt }

source-follower amplifier *See* common-drain amplifier. { 'sȯrs 'fäl·ə·wər 'am·pləˌfī·ər }

source impedance [ELEC] Impedance presented by a source of energy to the input terminals of a device. { 'sȯrs imˌpēd·əns }

source language [COMPUT SCI] The language in which a program (or other text) is originally expressed. { 'sȯrs ˌlaŋ·gwij }

source library [COMPUT SCI] A collection of computer programs in compiler language or assembler language. { 'sȯrs ˈlīˌbrer·ē }

source listing [COMPUT SCI] A printout of a source program. { 'sȯrs ˌlist·iŋ }

source module [COMPUT SCI] An organized set of statements in any source language recorded in machine-readable form and suitable for input to an assembler or compiler. { 'sȯrs ˌmäj·ül }

source program [COMPUT SCI] The form of a program just as the programmer has written it, often on coding forms or machine-readable media, a program expressed in a source-language form. { 'sȯrs ˌprōˌgram }

source program optimizer [COMPUT SCI] A routine for examining the source code of a program under development and providing information about use of the various portions of the code, enabling the programmer to modify those sections of the target program that are most heavily used in order to improve performance of the final, operational program. { 'sȯrs ˌprōˌgram ˌäp·təˌmīz·ər }

source stream [COMMUN] A single, nonmultiplexed stream of samples before compression coding. { 'sȯrs ˌstrēm }

source time [COMPUT SCI] The time involved in fetching the contents of the register specified by the first address of a two-address instruction. { 'sȯrs ˌtīm }

source transition loss [ELECTR] The transmission loss at the junction between an energy source and a transducer connecting that source to an energy load; measured by the ratio of the source power to the input power. { 'sȯrs tranˈzish·ən ˌlȯs }

sourcing [ELECTR] Redesign or the modification of existing equipment to eliminate a source of radio-frequency interference. { 'sȯrs·iŋ }

space [COMMUN] The open-circuit condition or the signal causing the open-circuit condition in telegraphic communication; the closed-circuit condition is called the mark. { spās }

space character *See* blank character. { 'spās ˌkar·ik·tər }

space charge [ELEC] The net electric charge within a given volume. { 'spās ˌchärj }

space-charge balanced flow [ELECTR] A method of focusing an electron beam in the interaction region of a traveling-wave tube; there is an axial magnetic field in the interaction region which is stronger than that in the gun region; at the transition between the two values of magnetic field strength, the beam is given a rotation in such a direction as to produce an inward force that counterbalances the outward forces from space charge and from the centrifugal forces set up by rotation. { 'spās ˈchärj 'bal·ənst 'flō }

space-charge debunching [ELECTR] A process in which the mutual interactions between electrons in a stream spread out the electrons of a bunch. { 'spās ˈchärj diˈbənch·iŋ }

space-charge effect [ELECTR] Repulsion of electrons emitted from the cathode of a thermionic vacuum tube by electrons accumulated in the space charge near the cathode. { 'spās ˈchärj iˌfekt }

space-charge grid [ELECTR] Grid operated at a low positive potential and placed between the cathode and control grid of a vacuum tube to reduce the limiting effect of space charge on the current through the tube. { 'spās ˈchärj ˌgrid }

space-charge layer *See* depletion layer. { 'spās ˈcharj ˌlā·ər }

space-charge limitation [ELECTR] The current flowing through a vacuum between a cathode and an anode cannot exceed a certain maximum value, as a result of modification of the electric field near the cathode due to space charge in this region. { 'spās ˈcharj ˌlim·əˈtā·shən }

space-charge polarization [ELEC] Polarization of a dielectric which occurs when charge carriers are present which can migrate an appreciable distance through the dielectric but which become trapped or cannot discharge at an electrode. Also known as interfacial polarization. { 'spās ˈchärj ˌpō·lə·rəˈzā·shən }

space-charge region [ELECTR] Of a semiconductor device, a region in which the net charge density is significantly different from zero. { 'spās ˈchärj ˌrē·jən }

space communication [COMMUN] Communication between a vehicle in outer space and the earth, using high-frequency electromagnetic radiation. { 'spās kəˌmyü·nəˈkā·shən }

spacecraft ground instrumentation [ENG] Instrumentation located on the earth for monitoring, tracking, and communicating with manned spacecraft, satellites, and space probes. Also known as ground instrumentation. { 'spāsˌkraft 'graund ˌin·strəˌmənˈtā·shən }

space current [ELECTR] Total current flowing between the cathode and all other electrodes in a tube; this includes the plate current, grid current, screen grid current, and any other electrode current which may be present. { 'spās ˌkə·rənt }

spaced antenna [ELECTROMAG] Antenna system consisting of a number of separate antennas spaced a considerable distance apart, used to minimize local effects of fading at short-wave receiving stations. { 'spāst anˈten·ə }

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space diversity reception [ELECTROMAG] Radio reception involving the use of two or more antennas located several wavelengths apart, feeding individual receivers whose outputs are combined; the system gives an essentially constant output signal despite fading due to variable propagation characteristics, because fading affects the spaced-out antennas at different instants of time. { 'spās di'vər·səd·ē ri'sep·shən }

space-division multiple access [COMMUN] The use of the same portion of the electromagnetic spectrum over two or more transmission paths; in most applications, the paths are formed by multibeam antennas, and each beam is directed toward a different geographic area. Abbreviated SDMA. { ¦spās də¸vizh·ən ¸məl·tə·pəl 'ak¸ses }

space reflection symmetry *See* parity. { 'spās ri ¦flek·shən 'sim·ə·trē }

space request [COMPUT SCI] A parameter that specifies the amount of storage space required by a new file at the time the file is created. { 'spās ri¸kwest }

space suppression [COMPUT SCI] Prevention of the normal movement of paper in a computer printer after the printing of a line of characters. { 'spās sə¸presh·ən }

space-time adaptive processing [ELECTR] Radar techniques in which the antenna is subject to automatic pattern shaping to counter angularly displace noise sources (such as jammers), and the coherent signal processing is subject to automatic processes in which Doppler filters are optimally shaped to counter nonuniform distribution of background signals (such as surface clutter in airborne radar) in Doppler. { 'spās 'tīm ə'dap·tiv 'präs¸es·iŋ }

space-to-mark transition [COMMUN] The transition from the space condition to the mark condition in telegraphic communication. { ¦spās tə ¦märk tran'zish·ən }

space wave [ELECTROMAG] The component of a ground wave that travels more or less directly through space from the transmitting antenna to the receiving antenna; one part of the space wave goes directly from one antenna to the other; another part is reflected off the earth between the antennas. { 'spās ¸wāv }

spacing pulse [COMMUN] In teletypewriter operation, the signal interval during which the selector unit is not operated. { 'spās·iŋ ¸pəls }

spacistor [ELECTR] A multiple-terminal solid-state device, similar to a transistor, that generates frequencies up to about 10,000 megahertz by injecting electrons or holes into a space-charge layer which rapidly forces these carriers to a collecting electrode. { spā'sis·tər }

spaghetti [ELEC] Insulating tubing used over bare wires or as a sleeve for holding two or more insulated wires together; the tubing is usually made of a varnished cloth or a plastic. { spə'ged·ē }

spaghetti code [COMPUT SCI] Computer program code that lacks a coherent structure, and in which the sequence of program execution frequently jumps to a distant instruction in the program listing, making the program very difficult to follow. { spə'ged·ē ¸kōd }

spanned record [COMPUT SCI] A logical record which covers more than one block, used when the size of a data buffer is fixed or limited. { 'spand 'rek·ərd }

spark [ELEC] A short-duration electric discharge due to a sudden breakdown of air or some other dielectric material separating two terminals, accompanied by a momentary flash of light. Also known as electric spark; spark discharge; sparkover. { spärk }

spark arrester [ELEC] A device that reduces or eliminates electric sparks at a point where a circuit is opened and closed. { 'spärk ə¸res·tər }

spark capacitor [ELEC] Capacitor connected across a pair of contact points, or across the inductance which causes the spark, for the purpose of diminishing sparking at these points. { 'spärk kə¸pas·əd·ər }

spark discharge *See* spark. { 'spärk 'dis¸chärj }

spark gap [ELEC] An arrangement of two electrodes between which a spark may occur; the insulation (usually air) between the electrodes is self-restoring after passage of the spark; used as a switching device, for example, to protect equipment against lightning or to switch a radar antenna from receiver to transmitter and vice versa. { 'spärk ¸gap }

spark-gap generator [ELEC] A high-frequency generator in which a capacitor is repeatedly charged to a high voltage and allowed to discharge through a spark gap into an oscillatory circuit, generating successive trains of damped high-frequency oscillations. { 'spärk ¦gap ¸jen·ə¸rād·ər }

sparking potential *See* breakdown voltage. { 'spärk·iŋ pə¸ten·chəl }

sparking voltage *See* breakdown voltage. { 'spärk·iŋ ¸vōl·tij }

spark killer *See* spark suppressor. { 'spärk ¸kil·ər }

sparkover *See* spark. { 'spärk¸ō·vər }

sparkover voltage *See* flashover voltage. { 'spärk ¸ō·vər ¸vōl·tij }

spark plate [ELEC] A metal plate insulated from the chassis of an auto radio by a thin sheet of mica, and connected to the battery lead to bypass noise signals picked up by battery wiring in the engine compartment. { 'spärk ¸plāt }

spark plug [ELEC] A device that screws into the cylinder of an internal combustion engine to provide a pair of electrodes between which an electrical discharge is passed to ignite the explosive mixture. { 'spärk ¸pləg }

spark suppressor [ELEC] A device used to prevent sparking between a pair of contacts when the contacts open, such as a resistor and capacitor in series between the contacts, or, in the case of an inductive circuit, a rectifier in parallel with the inductor. Also known as spark killer. { 'spärk sə ¸pres·ər }

spark transmitter [ELECTR] A radio transmitter that utilizes the oscillatory discharge of a capacitor through an inductor and a spark gap as the source of radio-frequency power. { 'spärk tranz'mid·ər }

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spark voltage [ELEC] The voltage required to create an arc across the gap of a spark plug. { 'spärk ˌvōl·tij }

spatial data management [COMPUT SCI] A technique whereby users retrieve information in databases, document files, or other sources by making contact with picture symbols displayed on the screen of a video terminal through the use of such devices as light pens, joy sticks, and heat-sensitive screens for finger-touch activation. { 'spā·shəl 'dad·ə ˌman·ij·mənt }

SPC *See* stored-program control.

SPDT *See* single-pole double-throw.

speaker *See* loudspeaker. { 'spēk·ər }

speaker identification [ENG ACOUS] The use of automated equipment to find the identity of a talker, in a known population of talkers, using the speech input. { ˌspēk·ər ī,dent·ə·tə'kā·shən }

speaker verification [ENG ACOUS] The use of automated equipment to authenticate a claimed speaker identity from a voice signal based on speaker-specific characteristics reflected in spoken words or sentences. Abbreviated SV. { ˌspēk·ər ˌver·i·fə'kā·shən }

special character [COMPUT SCI] A computer-representable character that is not alphabetic, numeric, or blank. { 'spesh·əl 'kar·ik·tər }

special-purpose computer [COMPUT SCI] A digital or analog computer designed to be especially efficient in a certain class of applications. { 'spesh·əl ˌpər·pəs kəm'pyüd·ər }

special-purpose language [COMPUT SCI] A programming language designed to solve a particular type of problem. { 'spesh·əl ˌpər·pəs 'laŋ·gwij }

specific charge [ELEC] The ratio of a particle's charge to its mass. { spə'sif·ik 'chärj }

specific conductance *See* conductivity. { spə'sif·ik kən'dək·təns }

specific cryptosystem [COMMUN] A general cryptosystem and a cryptographic key or set of keys for controlling the cryptographic process. { spə'sif·ik 'krip·tōˌsis·təm }

specific inductive capacity *See* dielectric constant. { spə'sif·ik in'dək·tiv kə'pas·əd·ē }

specific insulation resistance *See* volume resistivity. { spə'sif·ik ˌin·sə'lā·shən riˌzis·təns }

specific repetition rate [ELECTR] The pulse repetition rate of a pair of transmitting stations of an electronic navigation system using various rates differing slightly from each other, as in loran. { spə'sif·ik ˌrep·ə'tish·ən ˌrāt }

specific resistance *See* electrical resistivity. { spə'sif·ik ri'zis·təns }

specific routine [COMPUT SCI] Computer routine to solve a particular data-handling problem in which each address refers to explicitly stated registers and locations. { spə'sif·ik rü'tēn }

spectral pyrometer *See* narrow-band pyrometer. { 'spek·trəl pī'räm·əd·ər }

spectral response *See* spectral sensitivity. { 'spek·trəl ri'späns }

spectral selective photoelectric effect *See* selective photoelectric effect. { ˌspek·trəl si ˌlek·tiv ˌfōd·ō·i'lek·trik iˌfekt }

spectral sensitivity [ELECTR] Radiant sensitivity, considered as a function of wavelength. { 'spek·trəl ˌsen·sə'tiv·əd·ē }

spectrum level [COMMUN] The level of the part of a specified signal at a specified frequency that is contained within a specified frequency bandwidth, centered at the particular frequency. { 'spek·trəm ˌlev·əl }

spectrum-selectivity characteristic [ELECTR] Measure of the increase in the minimum input signal power over the minimum detectable signal required to produce an indication on a radar indicator, if the received signal has a spectrum different from that of the normally received signal. { 'spek·trəm ˌsiˌlek'tiv·əd·ē ˌkar·ik·tə ˌris·tik }

spectrum signature [ELECTR] The spectral characteristics of the transmitter, receiver, and antenna of an electronic system, including emission spectra, antenna patterns, and other characteristics. { 'spek·trəm ˌsig·nə·chər }

spectrum signature analysis [ELECTR] The evaluation of electromagnetic interference from transmitting and receiving equipment to determine operational and environment compatibility. { 'spek·trəm ˌsig·nə·chər əˌnal·ə·səs }

speech amplifier [ENG ACOUS] An audio-frequency amplifier designed specifically for amplification of speech frequencies, as for public-address equipment and radiotelephone systems. { 'spēch ˌam·pləˌfī·ər }

speech bandwidth [COMMUN] The range of speech frequencies that can be transmitted by a carrier telephone system. { 'spēch 'band ˌwidth }

speech clipper [ENG ACOUS] A clipper used to limit the peaks of speech-frequency signals, as required for increasing the average modulation percentage of a radiotelephone or amateur radio transmitter. { 'spēch ˌklip·ər }

speech coder [COMMUN] A device that uses data-compression techniques to convert a high-bit-rate signal resulting from digital pulse-code modulation of speech to a low-rate digital signal that can be transmitted or stored. { 'spēch ˌkōd·ər }

speech coil *See* voice coil. { 'spēch ˌkȯil }

speech compression [COMMUN] Modulation technique that takes advantage of certain properties of the speech signal to permit adequate information quality, characteristics, and the sequential pattern of a speaker's voice to be transmitted over a narrower frequency band than would otherwise be necessary. { 'spēch kəmˌpresh·ən }

speech frequency *See* voice frequency. { 'spēch ˌfrē·kwən·sē }

speech intelligibility *See* intelligibility. { 'spēch inˌtel·ə·jə'bil·əd·ē }

speech interpolation [COMMUN] Method of obtaining more than one voice channel per voice circuit by giving each subscriber a speech path in the proper direction only at times when the subscriber's speech requires it. { 'spēch ˌin·tər·pəl'ā·shən }

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speech inverter See scrambler. { 'spēch in,vərd·ər }

speech recognition [ENG ACOUS] The process of analyzing an acoustic speech signal to identify the linguistic message that was intended, so that a machine can correctly respond to spoken commands. { 'spēch ,rek·ig'nish·ən }

speech scrambler See scrambler. { 'spēch ,skram·blər }

speech synthesis See voice response. { 'spēch 'sin·thə·səs }

speed control [ELEC] A control that changes the speed of a motor or other drive mechanism, as for a phonograph or magnetic tape recorder. { 'spēd kən,trōl }

speed-matching buffer [COMPUT SCI] A small computer storage unit that connects two devices operating at different data transfer rates; each device writes into and reads from the buffer at its own rate. { 'spēd ¦mach·iŋ 'bəf·ər }

speed of light [ELECTROMAG] The speed of propagation of electromagnetic waves in a vacuum, which is a physical constant equal to exactly 299,792.458 kilometers per second. Also known as electromagnetic constant; velocity of light. { 'spēd əv 'līt }

speed-power product [ELECTR] The product of the gate speed or propagation delay of an electronic circuit and its power dissipation. { 'spēd'paù·ər ,präd·əkt }

speed regulator [ELEC] A device that maintains the speed of a motor or other device at a predetermined value or varies it in accordance with a predetermined plan. { 'spēd ,reg·yə ,lād·ər }

spelling checker [COMPUT SCI] A program, used in conjunction with word-processing software, which automatically checks words in a text against a dictionary of commonly used words and identifies words that appear to be misspelled. { 'spel·iŋ ,chek·ər }

sphere gap [ELEC] A spark gap between two equal-diameter spherical electrodes. { 'sfir ,gap }

spherical capacitor [ELEC] A capacitor made of two concentric metal spheres with a dielectric filling the space between the spheres. { 'sfir·ə·kəl kə'pas·əd·ər }

spherical-coordinate robot [CONT SYS] A robot in which the degrees of freedom of the manipulator arm are defined primarily by spherical coordinates. { 'sfir·ə·kəl kō¦ord·ən·ət 'rō,bät }

spherical-earth attenuation [ELECTROMAG] Attenuation over an imperfectly conducting spherical earth in excess of that over a perfectly conducting plane. { 'sfir·ə·kəl ¦ərth ə,ten·yə ,wā·shən }

spherical-earth factor [ELECTROMAG] The ratio of the electric field strength that would result from propagation over an imperfectly conducting spherical earth to that which would result from propagation over a perfectly conducting plane. { 'sfir·ə·kəl ¦ərth ,fak·tər }

spider [COMPUT SCI] A program that searches the Internet for new, publicly accessible resources and transmits its findings to a database that is accessible to search engines. [ELEC] A structure on the shaft of an electric rotating machine that supports the core or poles of the rotor, consisting of a hub, spokes, and rim, or some similar arrangement. [ENG ACOUS] A highly flexible perforated or corrugated disk used to center the voice coil of a dynamic loudspeaker with respect to the pole piece without appreciably hindering in-and-out motion of the voice coil and its attached diaphragm. { 'spīd·ər }

spiderweb antenna [ELECTROMAG] All-wave receiving antenna having several different lengths of doublets connected somewhat like the web of a spider to give favorable pickup characteristics over a wide range of frequencies. { 'spīd·ər,web an,ten·ə }

spike antenna See monopole antenna. { 'spīk an ,ten·ə }

spike microphone [ENG ACOUS] A device for clandestine aural surveillance in which the sensor is a spike driven into the wall of the target area and mechanically coupled to the diaphragm of a microphone on the other side of the wall. { 'spīk ,mī·krə,fōn }

spillover [COMMUN] The receiving of a radio signal of a different frequency from that to which the receiver is tuned, due to broad tuning characteristics. { 'spil,ō·vər }

spillover positions [COMMUN] When a transmitting channel is unusually busy or inoperative, the resulting backlogged traffic can be switched to spillover (storage) positions where it is held for immediate transmission when a channel becomes available. { 'spil,ō·vər pə,zish·ənz }

spin electronics See magnetoelectronics. { 'spin ,i·lek,trän·iks }

spin filter [ELECTR] A device used in a Lamb-shift polarized ion source to cause those atoms having an undesired nuclear spin orientation to decay from their metastable state to the ground state, while those with the desired spin orientation are allowed to pass through without decay. { 'spin ,fil·tər }

spinthariscope [ELECTR] An instrument for viewing the scintillations of alpha particles on a luminescent screen, usually with the aid of a microscope. { spin'thar·ə,skōp }

spin transistor See magnetic switch. { 'spin tran ,zis·tər }

spintronics See magnetoelectronics. { spin 'trän·iks }

spin valve See magnetic switch. { 'spin ,valv }

spiral delay line [ELECTROMAG] A transmission line which has a helical inner conductor. { 'spī·rəl di'lā ,līn }

spiral four cable [ELEC] A quad cable in which the four conductors are twisted about a common axis, the two sets of opposite conductors being used as pairs. { 'spī·rəl 'fór ,kā·bəl }

spiral scanning [ENG] Scanning in which the direction of maximum radiation describes a portion of a spiral; the rotation is always in one direction; used with some types of radar antennas. { 'spī·rəl 'skan·iŋ }

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splatter [COMMUN] Distortion due to overmodulation of a transmitter by peak signals of short duration, particularly sounds containing high-frequency harmonics; it is a form of adjacent-channel interference. { 'splad·ər }

splice [ELEC] A joint used to connect two lengths of conductor with good mechanical strength and good conductivity. { splīs }

splicing [COMMUN] The concatenation, performed on the system level, of two different elementary streams. { 'splīs·iŋ }

split [COMPUT SCI] To divide a database, file, or other data set into two or more separate parts. { split }

split-anode magnetron [ELECTR] A magnetron in which the cylindrical anode is divided longitudinally into halves, between which extremely high-frequency oscillations are produced. { 'split ¦an ˌōd 'mag·nəˌträn }

split-phase motor [ELEC] A single-phase induction motor having an auxiliary winding connected in parallel with the main winding, but displaced in magnetic position from the main winding so as to produce the required rotating magnetic field for starting; the auxiliary circuit is generally opened when the motor has attained a predetermined speed. { 'split ¦fāz 'mōd·ər }

split screen *See* partitioned display. { 'split 'skrēn }

split-stator variable capacitor [ELECTR] Variable capacitor having a rotor section that is common to two separate stator sections; used in grid and plate tank circuits of transmitters for balancing purposes. { 'split ¦stād·ər 'ver·ē·ə·bəl kəˈpas·əd·ər }

splitting [ELECTR] In the scope presentation of the standard loran (2000 kilohertz), signals the slow diminution of the leading or lagging edge of the pulse so that it resembles two pulses and eventually a single pulse, which appears to be normal but which may be displaced in time by as much as 10,000 microseconds; this phenomenon is caused by shifting of the E_1 reflections from the ionosphere, and if the deformation is that of the leading edge and is not detected, it will cause serious errors in the reading of the navigational parameter. { 'splid·iŋ }

split transducer [ENG] A directional transducer with electroacoustic transducing elements which are divided and arranged so that there is an electrical separation of each division. { 'split tranz'dü·sər }

split-word operation [COMPUT SCI] A computer operation performed with portions of computer words rather than whole words as is normally done. { 'split ¦wərd ˌäp·əˈrā·shən }

SPMD [COMPUT SCI] A type of programming on a multiprocessor in which parallel programs all run the same subroutine but operate on different data. Acronym for single-program, multiple-data.

spoiler [ELECTROMAG] Rod grating mounted on a parabolic reflector to change the pencil-beam pattern of the reflector to a cosecant-squared pattern; rotating the reflector and grating 90° with respect to the feed antenna changes one pattern to the other. { 'spȯi·lər }

spontaneous polarization [ELEC] Electric polarization that a substance possesses in the absence of an external electric field. { spänˈtā·nē·əs ˌpō·lə·rəˈzā·shən }

spoofing [COMPUT SCI] A method of gaining unauthorized access to computers or networkds by sending messages with someone else's IP address, so that the message appears, to the targeted system, to be coming from a trusted host. [ELECTR] Deceiving or misleading an enemy in electronic operations, as by continuing transmission on a frequency after it has been effectively jammed by the enemy, using decoy radar transmitters to lead the enemy into a useless jamming effort, or transmitting radio messages containing false information for intentional interception by the enemy. { 'spüf·iŋ }

spooling [COMPUT SCI] The temporary storage of input and output on high-speed input-output devices, typically magnetic disks and drums, in order to increase throughput. Acronym for simultaneous peripheral operations on line. { 'spül·iŋ }

sporadic fault [COMPUT SCI] A hardware malfunction that occurs intermittently and at unpredictable times. { spəˈrad·ik 'fōlt }

sporadic reflections [ELECTROMAG] Sharply defined reflections of substantial intensity from the sporadic E layer at frequencies greater than the critical frequency of the layer; they are variable with respect to time of occurrence, geographic location, and range of frequencies at which they are observed. { spəˈrad·ik riˈflek·shənz }

spot [ELECTR] In a cathode-ray tube, the area instantaneously affected by the impact of an electron beam. { spät }

spot beam [COMMUN] A beam generated by a communications satellite antenna of sufficient size that the angular spread of energy in the beam is small, always smaller than the earth's angular beam width as seen from the satellite. { 'spät ˌbēm }

spot jammer [ELECTR] A jammer that interferes with reception of a specific channel or frequency. { 'spät ˌjam·ər }

spot jamming [ELECTR] An electronic attack technique in which a continuous narrow-band signal is transmitted, giving a stronger jamming signal to a particular victim radar than had a wide-band transmission been used. { 'spät ˌjam·iŋ }

spotlight [ELEC] **1.** A strong beam of light that illuminates only a small area about an object. **2.** A lamp that has a strongly focused beam. { 'spätˌlīt }

spot noise figure [ELECTR] Of a transducer at a selected frequency, the ratio of the output noise power per unit bandwidth to a portion thereof attributable to the thermal noise in the input termination per unit bandwidth, the noise temperature of the input termination being standard (290 K). { 'spät 'nȯiz ˌfig·yər }

spot-size error [ELECTR] The distortion of the radar returns on the radarscope presentation caused by the diameter of the electron beam which displays the returns of the scope and the

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lateral radiation across the scope of part of the glow produced when the electron beam strikes the phosphorescent coating of the cathode-ray tube. { 'spät ¦sīz ˌer·ər }

spot speed [COMMUN] **1.** In a video system, the product of the length (in units of elemental area, that is, in spots) of scanning line by the number of scanning lines per second. **2.** In facsimile transmission, the speed of the scanning or recording spot within the available line. Also known as scanning speed. { 'spät ˌspēd }

spottiness [ELECTR] Bright spots scattered irregularly over the reproduced image in a television receiver, due to man-made or static interference entering the television system at some point. { 'späd·ē·nəs }

spray point [ELEC] One of the sharp points arranged in a row and charged to a high direct-current potential, used to charge and discharge the conveyor belt in a Van de Graaff generator. { 'sprā ˌpȯint }

spread *See* sensitivity. { spred }

spreader [ELEC] An insulating crossarm used to hold apart the wires of a transmission line or multiple-wire antenna. { 'spred·ər }

spreading method [ELEC] A method of calculating the potential due to a set of point charges by replacing them with a continuous distribution of charge or a distribution of charge and polarization. { 'spred·iŋ ˌmeth·əd }

spreadsheet program [COMPUT SCI] A computer program that simulates an accountant's worksheet on screen as an array of rows (usually numbered) and columns (usually assigned alphabetical letters) whose intersections are called cells; the program allows the user to enter data in the cells and to embed formulas which relate the values in different cells. { 'spred ˌshēt 'prō·grəm }

spread spectrum transmission [ELECTR] Communications technique in which many different signal waveforms are transmitted in a wide band; power is spread thinly over the band so narrow-band radios can operate within the wide-band without interference; used to achieve security and privacy, prevent jamming, and utilize signals buried in noise. { 'spred ¦spek·trəm tranz,mish·ən }

spring contact [ELEC] A relay or switch contact mounted on a flat spring, usually of phosphor bronze. { 'spriŋ ¦kän,takt }

sprocket pulse [COMPUT SCI] **1.** A pulse generated by a magnetized spot which accompanies every character recorded on magnetic tape; this pulse is used during read operations to regulate the timing of the read circuits, and also to provide a count on the number of characters read from the tape. **2.** A pulse generated by the sprocket or driving hole in paper tape which serves as the timing pulse for reading or punching the paper tape. { 'spräk·ət ˌpəls }

SPST *See* single-pole single-throw.

spurious emission *See* spurious radiation. { 'spyůr·ē·əs i'mish·ən }

spurious modulation [ELECTR] Undesired modulation occurring in an oscillator, such as frequency modulation caused by mechanical vibration. { 'spyůr·ē·əs ˌmäj·ə'lā·shən }

spurious radiation [ELECTROMAG] Any emission from a radio transmitter at frequencies outside its frequency band. Also known as spurious emission. { 'spyůr·ē·əs ˌrād·ē'ā·shən }

spurious response [ELECTR] Response of a radio receiver to a frequency different from that to which the receiver is tuned. { 'spyůr·ē·əs ri'späns }

spurt tone [COMMUN] Short audio-frequency tone used for signaling or dialing selection. { 'spərt ˌtōn }

sputtering [ELECTR] Also known as cathode sputtering. **1.** The ejection of atoms or groups of atoms from the surface of the cathode of a vacuum tube as the result of heavy-ion impact. **2.** The use of this process to deposit a thin layer of metal on a glass, plastic, metal, or other surface in vacuum. { 'spad·ə·riŋ }

SQL *See* Structured Query Language.

square-law demodulator *See* square-law detector. { 'skwer ¦lȯ dē'mäj·ə,lād·ər }

square-law detector [ELECTR] A demodulator whose output voltage is proportional to the square of the amplitude-modulated input voltage. Also known as square-law demodulator. { 'skwer ¦lȯ di,tek·tər }

square wave [ELEC] An oscillation the amplitude of which shows periodic discontinuities between two values, remaining constant between jumps. { 'skwer 'wāv }

square-wave amplifier [ELECTR] Resistance-coupled amplifier, the circuit constants of which are to amplify a square wave with the minimum amount of distortion. { 'skwer ¦wāv 'am·plə,fī·ər }

square-wave generator [ELECTR] A signal generator that generates a square-wave output voltage. { 'skwer ¦wāv 'jen·ə,rād·ər }

square-wave response [ELECTR] The response of a circuit or device when a square wave is applied to the input. { 'skwer ¦wāv ri,späns }

squaring circuit [ELECTR] **1.** A circuit that reshapes a sine or other wave into a square wave. **2.** A circuit that contains nonlinear elements proportional to the square of the input voltage. { 'skwer·iŋ ˌsər·kət }

squawker *See* midrange. { 'skwȯk·ər }

squealing [ELECTR] A condition in which a radio receiver produces a high-pitched note or squeal along with the desired radio program, due to interference between stations or to oscillation in some receiver circuit. { 'skwēl·iŋ }

squeezable waveguide [ELECTROMAG] A waveguide whose dimensions can be altered periodically; used in rapid scanning. { 'skwēz·ə·bəl'wāv ˌgīd }

squeeze section [ELECTROMAG] Length of waveguide constructed so that alteration of the critical dimension is possible with a corresponding alteration in the electrical length. { 'skwēz ˌsek·shən }

squegger *See* blocking oscillator. { 'skweg·ər }

squegging [ELECTR] Condition of self-blocking in an electron-tube-oscillator circuit. { 'skweg·iŋ }

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squegging oscillator *See* blocking oscillator. { 'skweg·iŋ ˌäs·əˌlād·ər }

squelch [ELECTR] To automatically quiet a receiver by reducing its gain in response to a specified characteristic of the input. { skwelch }

squelch circuit *See* noise suppressor. { 'skwelch ˌsər·kət }

SQUID *See* superconducting quantum interference device. { skwid }

squint [ELECTROMAG] **1.** The angle between the two major lobe axes in a radar lobe-switching antenna. **2.** The angular difference between the axis of radar antenna radiation and a selected geometric axis, such as the axis of the reflector. **3.** The angle between the full-right and full-left positions of the beam of a conical-scan radar antenna. { skwint }

squirrel-cage motor [ELEC] An induction motor in which the secondary circuit consists of a squirrel-cage winding arranged in slots in the iron core. { 'skwərl ˈkāj ˌmōd·ər }

squirrel-cage rotor *See* squirrel-cage winding. { 'skwərl ˈkāj ˌrōd·ər }

squirrel-cage winding [ELEC] A permanently short-circuited winding, usually uninsulated, around the periphery of the rotor and joined by continuous end rings. Also known as squirrel-cage rotor. { 'skwərl ˈkāj ˌwīnd·iŋ }

squishing *See* compaction. { 'skwish·iŋ }

squitter [ELECTR] Random firing, intentional or otherwise, of the transponder transmitter in the absence of interrogation. { 'skwid·ər }

SRAM *See* static random-access memory. { 'es ˌram }

SRC *See* stored response chain.

SSA Service *See* S-band single-access service. { ˈesˈesˈā ˌsər·vəs }

SSB *See* single-sideband.

SSI *See* small-scale integration.

SSR *See* solid-state relay.

SSTV *See* slow-scan television.

stability [CONT SYS] The property of a system for which any bounded input signal results in a bounded output signal. { stəˈbil·əd·ē }

stability criterion [CONT SYS] A condition which is necessary and sufficient for a system to be stable, such as the Nyquist criterion, or the condition that poles of the system's overall transmittance lie in the left half of the complex-frequency plane. { stəˈbil·əd·ē krīˌtir·ē·ən }

stability exchange principle [CONT SYS] In a linear system, which is either dynamically stable or unstable depending on the value of a parameter, the complex frequency varies with the parameter in such a way that its real and imaginary parts pass through zero simultaneously; the principle is often violated. { stəˈbil·əd·ē iksˈchānj ˌprin·sə·pəl }

stability factor [ELECTR] A measure of a transistor amplifier's bias stability, equal to the rate of change of collector current with respect to reverse saturation current. { stəˈbil·əd·ē ˌfak·tər }

stabilivolt [ELECTR] Gas tube that maintains a constant voltage drop across its terminals, essentially independent of current, over a relatively wide range. { stəˈbil·əˌvōlt }

stabilization [CONT SYS] *See* compensation. [ELECTR] Feedback introduced into transistor amplifier stages to reduce distortion by making the amplification substantially independent of electrode voltages. { ˌstā·bə·ləˈzā·shən }

stabilized feedback *See* negative feedback. { ˈstā·bəˌlīzd ˈfēdˌbak }

stabilized winding [ELEC] Auxiliary winding used particularly in star-connected transformers to stabilize the neutral point of the fundamental frequency voltages, to protect the transformer and the system from excessive third-harmonic voltages; and to prevent telephone interference caused by third-harmonic currents and voltages in the lines and earth. Also known as tertiary winding. { ˈstā·bəˌlīzd ˈwīnd·iŋ }

stabistor [ELECTR] A diode component having closely controlled conductance, controlled storage charge, and low leakage, as required for clippers, clamping circuits, bias regulators, and other logic circuits that require tight voltage-level tolerances. { stāˈbis·tər }

stable local oscillator *See* stalo. { ˈstā·bəl ˈlō·kəl ˈäs·əˌlād·ər }

stable strobe [ELECTR] Series of strobes which behaves as if caused by a single jammer. { ˈstā·bəl ˈströb }

stack [COMPUT SCI] A portion of a computer memory used to temporarily hold information, organized as a linear list for which all insertions and deletions, and usually all accesses, are made at one end of the list. { stak }

stack automaton [COMPUT SCI] A variation of a pushdown automaton in which the read-only head of the input tape is allowed to move both ways, and the read-write head on the pushdown storage is allowed to scan the entire pushdown list in a read-only mode. { ˈstak ȯˈtäm·əˌtän }

stacked array [ELECTROMAG] An array in which the antenna elements are stacked one above the other and connected in phase to increase the gain. { ˈstakt əˈrā }

stacked-dipole antenna [ELECTROMAG] Antenna in which directivity is increased by providing a number of identical dipole elements, excited either directly or parasitically; the resultant radiation pattern depends on the number of dipole elements used, the spacing and phase difference between the elements, and the relative magnitudes of the currents. { ˈstakt ˈdīˌpōl anˌten·ə }

stacked-job processing [COMPUT SCI] A technique of automatic job-to-job transition, with little or no operator intervention. { ˈstakt ˈjäb ˌprāˌses·iŋ }

stacked loops [ELECTROMAG] Two or more loop antennas arranged above each other on a vertical supporting structure and connected in phase to increase the gain. Also known as vertically stacked loops. { ˈstakt ˈlüps }

stacking [ELECTROMAG] The placing of antennas one above the other, connecting them in phase to increase the gain. { ˈstak·iŋ }

stack model [COMPUT SCI] A model for describing the run-time execution of programs written

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in block-structured languages, consisting of a program component, which remains unchanged throughout the execution of the program; a control component, consisting of an instruction pointer and an environment pointer; and a stack of records containing all the data the program operates on. { 'stak ,mäd·əl }

stack operation [COMPUT SCI] A computer system in which flags, return address, and all temporary addresses are saved in the core in sequential order for any interrupted routine so that a new routine (including the interrupted routine) may be called in. { 'stak ,äp·ə,rā·shən }

stack pointer [COMPUT SCI] A register which contains the last address of a stack of addresses. { 'stak ,point·ər }

stadiometry [COMPUT SCI] In computer vision, the determination of the distance to an object based on the size of its image. { ,stād·ē'äm·ə·trē }

stage gain [ELECTR] The ratio of the output power of an amplifier stage to the input power, usually expressed in decibels. { 'stāj ,gān }

stagger [COMMUN] Periodic error in the position of the recorded spot along a recorded facsimile line. { 'stag·ər }

staggered tuning [ELECTR] Alignment of successive tuned circuits to slightly different frequencies in order to widen the overall amplitude-frequency response curve. { 'stag·ərd 'tün·iŋ }

staggering [COMMUN] Offsetting of two channels of different carrier systems from exact sideband frequency coincidence to avoid mutual interference. { 'stag·ə·riŋ }

staggering advantage [COMMUN] Effective reduction of interference between carrier channels, due to staggering. { 'stag·ə·riŋ ad,van·tij }

stagger-tuned amplifier [ELECTR] An amplifier that uses staggered tuning to give a wide bandwidth. { 'stag·ər ¦tünd 'am·plə,fī·ər }

stagger-tuned filter [ELECTR] A filter consisting of a cascade of amplifier stages with tuned coupling networks whose resonant frequencies and bandwidths may be easily adjusted to achieve an overall transmission function of desired shape (maximally flat or equal ripple). { 'stag·ər ¦tünd 'fil·tər }

staging [COMPUT SCI] Moving blocks of data from one storage device to another. { 'stā|·iŋ }

staircase signal [COMMUN] In analog television transmissions, a waveform that consists of a series of discrete steps resembling a staircase. { 'ster,kās ,sig·nəl }

stake [ELEC] An iron peg used as a power electrode to transfer current into the ground in electrical prospecting. { stāk }

stale link [COMPUT SCI] A hyperlink to a document that has been erased or removed from the World Wide Web. Also known as black hole. { ¦stāl 'liŋk }

stalo [ELECTR] A highly stable local radio-frequency oscillator used in coherent radar both for up-converting the transmit signal to the carrier frequency and down-converting the received signals to the intermediate frequency. { 'stā,lō }

stamping [ELECTR] A transformer lamination that has been cut out of a strip or sheet of metal by a punch press. { 'stam·piŋ }

stand-alone machine [COMPUT SCI] A machine capable of functioning independently of a master computer, either part of the time or all of the time. { 'stand ə¦lōn mə'shēn }

standard antenna [ELECTROMAG] An open single-wire antenna (including the lead-in wire) having an effective height of 4 meters. { 'stan·dərd an'ten·ə }

standard blocked F-format data set *See* FBS data set. { 'stan·dərd 'bläkt ¦ef'fȯr,mat 'dad·ə ,set }

standard broadcast band *See* broadcast band. { 'stan·dərd 'bród,kast ,band }

standard broadcast channel [COMMUN] Band of frequencies occupied by the carrier and two side bands of a radio broadcast signal, with the carrier frequency at the center. { 'stan·dərd 'bród,kast ,chan·əl }

standard broadcasting [COMMUN] Radio broadcasting using amplitude modulation in the band of frequencies from 535 to 1605 kilohertz; carrier frequencies are placed 10 kilohertz apart. { 'stan·dərd 'bród,kast·iŋ }

standard capacitor [ELEC] A capacitor constructed in such a manner that its capacitance value is not likely to vary with temperature and is known to a high degree of accuracy. Also known as capacitance standard. { 'stan·dərd kə'pas·əd·ər }

standard cell [ELEC] A primary cell whose voltage is accurately known and remains sufficiently constant for instrument calibration purposes; the Weston standard cell has a voltage of 1.018636 volts at 20°C. { 'stan·dərd 'sel }

standard definition television [COMMUN] Term used to signify a digital television system in which the quality is approximately equivalent to that of NTSC. Also called standard digital television. Abbreviated SDTV. { 'stan·dərd def·ə¦nish·ən 'tel·ə,vizh·ən }

standard digital television *See* standard definition television. { 'stan·dərd 'dij·əd·əl 'tel·ə,vizh·ən }

standard form [COMPUT SCI] The form of a floating point number whose mantissa lies within a standard specified range of values. { 'stan·dərd 'fȯrm }

standard-frequency signal [COMMUN] One of the highly accurate signals broadcast by government radio stations and used for testing and calibrating radio equipment all over the world; in the United States signals are broadcast by the National Bureau of Standards' radio stations WWV, WWVH, WWVB, and WWVL. { 'stan·dərd ¦frē·kwən·sē ,sig·nəl }

standard function *See* built-in function. { 'stan·dərd 'fəŋk·shən }

Standard Generalized Markup Language [COMPUT SCI] A system that encodes the logical structure and content of a document rather than its display formatting, or even the medium in which the document will be displayed; widely used in the publishing business and for producing technical documentation. Abbreviated SGML. { ¦stan·dərd ¦jen·rə,līzd 'märk,əp ,laŋ·gwij }

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standard interface [COMPUT SCI] **1.** A joining place of two systems or subsystems that has a previously agreed-upon form, so that two systems may be readily connected together. **2.** In particular, a system of uniform circuits and input/output channels connecting the central processing unit of a computer with various units of peripheral equipment. { 'stan·dərd 'in·tər,fās }

standardize [COMPUT SCI] To replace any given floating point representation of a number with its representation in standard form; that is, to adjust the exponent and fixed-point part so that the new fixed-point part lies within a prescribed standard range. { 'stan·dər,dīz }

standard noise temperature [ELECTR] The standard reference temperature for noise measurements, equal to 290 K. { 'stan·dərd 'nóiz ,tem·prə·chər }

standard parallel port [COMPUT SCI] A parallel port that can transfer data in only one direction. { ¦stan·dərd ,par·ə,lel 'pórt }

standard preemphasis [COMMUN] Preemphasis in frequency-modulation and analog television aural broadcasting whose level lies between upper and lower limits specified by the Federal Communications Commission. { 'stan·dərd prē'em·fə·səs }

standard propagation [ELECTROMAG] Propagation of radio waves over a smooth spherical earth of specified dielectric constant and conductivity, under conditions of standard refraction in the atmosphere. { 'stan·dərd ,präp·ə'gā·shən }

standard refraction [ELECTROMAG] Refraction which would occur in an idealized atmosphere in which the index of refraction decreases uniformly with height at a rate of 39×10^{-6} per kilometer; standard refraction may be included in ground wave calculations by use of an effective earth radius of 8.5×10^{6} meters, or $\frac{4}{3}$ the geometrical radius of the earth. { 'stan·dərd ri'frak·shən }

standard subroutine [COMPUT SCI] In computers, a subroutine which is applicable to a class of problems. { 'stan·dərd 'səb·rü,tēn }

standard test-tone power [ELECTR] One milliwatt (0 decibels above one milliwatt) at 1000 hertz. { 'stan·dərd 'test ¦tōn ,paù·ər }

standby battery [ELEC] A storage battery held in reserve as an emergency power source in event of failure of regular power facilities at a radio station or other location. { 'stand¦bī ,bad·ə·rē }

standby computer [COMPUT SCI] A computer in a duplex system that takes over when the need arises. { 'stand¦bī kəm,pyüd·ər }

standby mode [ELEC] The operation of a circuit or device with unused portions of the circuit disconnected to reduce power consumption. { 'stan,bī mōd }

standby power source [ELEC] An uninterruptible power system in which the load normally operated from the commercial power line is switched to the output of a dc-to-ac static inverter powered by a battery in the event of a power failure. { 'stand¦bī 'paù·ər ,sōrs }

standby register [COMPUT SCI] In computers, a register into which information can be copied to be available in case the original information is lost or mutilated in processing. { 'stand¦bī ,rej·ə·stər }

standby replacement redundancy [COMPUT SCI] A form of redundancy in which there is a single active unit and a reserve of spare units, one of which replaces the active unit if it fails. { 'stand ¦bī ri'plās·mənt ri,dən·dən·sē }

standby time [COMPUT SCI] **1.** The time during which two or more computers are tied together and available to answer inquiries or process intermittent actions on stored data. **2.** The elapsed time between inquiries when the equipment is operating on an inquiry application. { 'stand¦bī ,tīm }

standing-on-nines carry [COMPUT SCI] In high-speed parallel addition of decimal numbers, an arrangement that causes carry digits to pass through one or more nine digits, while signaling that the skipped nines are to be reset to zero. { ¦stand·iŋ ón ¦nīnz 'kar·ē }

standing wave [PHYS] A wave in which the ratio of an instantaneous value at one point to that at any other point does not vary with time. Also known as stationary wave. { 'stand·iŋ 'wāv }

standing-wave loss factor [ELECTROMAG] The ratio of the transmission loss in an unmatched waveguide to that in the same waveguide when matched. { 'stand·iŋ ¦wāv 'lós ,fak·tər }

standoff insulator [ELEC] An insulator used to support a conductor at a distance from the surface on which the insulator is mounted. { 'stan,dóf 'in·sə,lād·ər }

standoff jammer [ELECTR] An aircraft that patrols the target air space and engages in high-power jamming of both the acquisition or tracking devices and the closing vehicles, by using powerful transmitters excited by travelling-wave tubes. { 'stan,dóf 'jam·ər }

standstill feature [CONT SYS] A device which insures that false signals such as fluctuations in the power supply do not cause a controller to be altered. { 'stan,stil ,fē·chər }

star-connected circuit [ELEC] Polyphase circuit in which all the current paths within the region that delimits the circuit extend from each of the points of entry of the phase conductors to a common conductor (which may be the neutral conductor). { 'stär kə¦nek·təd 'sər·kət }

star-delta switching starter [ELEC] A type of motor starter, used with three-phase induction motors, that switches the stator windings from a star connection to a delta connection. { 'stär 'del·tə ¦swich·iŋ ,stärd·ər }

star-free expression [COMPUT SCI] An expression containing only Boolean operations and concatenation, used to define the language corresponding to a counter-free machine. { 'stär ¦frē ik'spresh·ən }

star lamp [ELEC] A high-pressure xenon arc, used in a planetarium, which produces a tiny, intense point of light focused through thousands of individual lenses and pinholes, and projected to the planetarium's dome. { 'stär ,lamp }

star network [COMMUN] A communications network in which all communications between any

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two points must pass through a central node. Also known as centralized configuration. { 'stär ¦net,wərk }

start bit [COMPUT SCI] The first bit transmitted in asynchronous data transmission to unequivocally indicate the start of the word. { 'stärt ,bit }

start codes [COMMUN] 32-bit codes embedded in the coded bit stream that are unique; used for several purposes including identifying some of the layers in the coding syntax. { 'stärt ,kōdz }

start dialing signal [COMMUN] Signal transmitted from the incoming end of a circuit, following the receipt of a seizing signal, to indicate that the necessary circuit conditions have been established for receiving the numerical routine information. { 'stärt 'dīl-iŋ ,sig-nəl }

started task [COMPUT SCI] A computer program that is kept permanently in main storage and, though not a part of the operating system, is treated as though it were. { 'stärd-əd 'task }

start element [COMMUN] The first element of a character in certain serial transmissions, used to permit synchronization. { 'stärt ,el-ə-mənt }

starter [ELEC] **1.** A device used to start an electric motor and to accelerate the motor to normal speed. **2.** *See* engine starter. [ELECTR] An auxiliary control electrode used in a gas tube to establish sufficient ionization to reduce the anode breakdown voltage. Also known as trigger electrode. { 'stär-dər }

starting box [ELEC] A device for providing extra resistance in the armature of a motor while it is being started. { 'stärd-iŋ ,bäks }

starting motor *See* engine starter. { 'stärd-iŋ ,mōd-ər }

starting reactor [ELEC] A reactor that is used to limit the starting current of electric motors, and usually consists of an iron-core inductor connected in series with the machine stator winding. { 'stärd-iŋ rē,ak-tər }

startover [COMPUT SCI] Program function that causes a computer that is not active to become active. { 'stär,dō-vər }

startover data transfer and processing program [COMPUT SCI] Program which controls the transfer of startover data from the active to the standby machine and their subsequent processing by the standby machine. { 'stär,dō-vər 'dad-ə ,tranz-fər ən 'prä,ses-iŋ ,prō,gram }

start-stop multivibrator *See* monostable multivibrator. { 'stärt 'stäp ,məl-tī'vī,brād-ər }

start-stop printing telegraph [COMMUN] Form of printing telegraph in which the signal-receiving mechanisms, normally at rest, are started in operation at the beginning and stopped at the end of each character transmitted over the channel. { 'stärt 'stäp 'print-iŋ 'tel-ə-graf }

start-stop system [COMMUN] A telegraph system in which each group of code elements corresponding to a character is preceded by a start signal that prepares the receiving mechanism to receive and register a character, and is followed by a stop signal that brings the receiving mechanism to rest in preparation for the reception of the next character. { 'stärt 'stäp ,sis-təm }

stat- [ELEC] A prefix indicating an electrical unit in the electrostatic centimeter-gram-second system of units; it is attached to the corresponding SI unit. { stat }

stat℧ *See* statmho.

statΩ *See* statohm.

statA *See* statampere. { 'stat¦ā }

statampere [ELEC] The unit of electric current in the electrostatic centimeter-gram-second system of units, equal to a flow of charge of 1 statcoulomb per second; equal to approximately 3.3356×10^{-10} ampere. Abbreviated statA. { stad'am,pir }

statC *See* statcoulomb. { 'stat,sē }

statcoulomb [ELEC] The unit of charge in the electrostatic centimeter-gram-second system of units, equal to the charge which exerts a force of 1 dyne on an equal charge at a distance of 1 centimeter in a vacuum; equal to approximately 3.3356×10^{-10} coulomb. Abbreviated statC. Also known as franklin (Fr); unit charge. { 'stat¦kō ,läm }

state [CONT SYS] A minimum set of numbers which contain enough information about a system's history to enable its future behavior to be computed. { stāt }

state equations [CONT SYS] Equations which express the state of a system and the output of a system at any time as a single valued function of the system's input at the same time and the state of the system at some fixed initial time. { 'stāt i,kwā-zhənz }

state estimator *See* observer. { 'stāt ,es-tə,mād-ər }

state feedback [CONT SYS] A class of feedback control laws in which the control inputs are explicit memoryless functions of the dynamical system state, that is, the control inputs at a given time t_d are determined by the values of the state variables at t_d and do not depend on the values of these variables at earlier times $t \geq t_d$. { 'stāt 'fēd,bak }

state graph [COMPUT SCI] A directed graph whose nodes correspond to internal states of a sequential machine and whose edges correspond to transitions among these states. { 'stāt ,graf }

statement [COMPUT SCI] An elementary specification of a computer action or process; complete and not divisible into smaller meaningful units; it is analogous to the simple sentence of a natural language. { 'stāt-mənt }

statement editor [COMPUT SCI] A text editor in which the text is divided into superlines, that is, units greater than ordinary lines, resulting in easier editing and freedom from truncation problems. { 'stāt-mənt ,ed-əd-ər }

state observer *See* observer. { 'stāt əb,zər-vər }

state space [CONT SYS] The set of all possible values of the state vector of a system. { 'stāt ,spās }

state table [COMPUT SCI] A table that represents a sequential machine, in which the rows correspond to the internal states, the columns to the input combinations, and the entries to the next state. { 'stāt ,tā-bəl }

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state transition equation [CONT SYS] The equation satisfied by the $n \times n$ state transition matrix $\Phi(t,t_0)$: $\partial\Phi(t,t_0)/\partial t = A(t)\,\Phi(t,t_0)$, $\Phi(t_0,t_0) = I$; here I is the unit $n \times n$ matrix, and $A(t)$ is the $n \times n$ matrix which appears in the vector differential equation $dx(t)/dt = A(t)x(t)$ for the n-component state vector $x(t)$. { 'stāt tran'zish·ən i,kwā·zhən }

state transition matrix [CONT SYS] A matrix $\Phi(t,t_0)$ whose product with the state vector x at an initial time t_0 gives the state vector at a later time t; that is, $x(t) = \Phi(t,t_0)x(t_0)$. { 'stāt tran'zish·ən ,mā·triks }

state variable [CONT SYS] One of a minimum set of numbers which contain enough information about a system's history to enable computation of its future behavior. { 'stāt ,ver·ē·ə·bəl }

state-variable filter [ELECTR] A multiple-amplifier active filter that has three outputs for high-pass, band-pass, and low-pass transfer functions respectively. Also known as KHN filter. { 'stāt ,ver·ē·ə·bəl ,fil·tər }

state vector [COMPUT SCI] *See* task descriptor. [CONT SYS] A column vector whose components are the state variables of a system. { 'stāt ,vek·tər }

statF *See* statfarad. { 'stad,ef }

statfarad [ELEC] Unit of capacitance in the electrostatic centimeter-gram-second system of units, equal to the capacitance of a capacitor having a charge of 1 statcoulomb, across the plates of which the charge is 1 statvolt, equal to approximately 1.1126×10^{-12} farad. Abbreviated statF. { 'stat,fa,rad }

static [COMMUN] A hissing, crackling, or other sudden sharp sound that tends to interfere with the reception, utilization, or enjoyment of desired signals or sounds. { 'stad·ik }

static algorithm [COMPUT SCI] An algorithm whose operation is known in advance. Also known as deterministic algorithm. { 'stad·ik 'al·gə,rith·əm }

static breeze *See* convective discharge. { 'stad·ik 'brēz }

static characteristic [ELECTR] A relation between a pair of variables, such as electrode voltage and electrode current, with all other operating voltages for an electron tube, transistor, or other amplifying device maintained constant. { 'stad·ik ,kar·ik·tə'ris·tik }

static charge [ELEC] An electric charge accumulated on an object. { 'stad·ik 'chärj }

static check [COMPUT SCI] Of a computer, one or more tests of computing elements, their interconnections, or both, performed under static conditions. { 'stad·ik 'chek }

static debugging routine [COMPUT SCI] A debugging routine which is used after the program being checked has been run and has stopped. { 'stad·ik dē'bəg·iŋ rü,tēn }

static discharger [ELEC] A rubber-covered cloth wick about 6 inches (15 centimeters) long, sometimes attached to the trailing edges of the surfaces of an aircraft to discharge static electricity in flight. { 'stad·ik 'dis,chär·jər }

static dump [COMPUT SCI] An edited printout of the contents of main memory or of the auxiliary storage, performed in a fixed way; it is usually taken at the end of a program run either automatically or by operator intervention. { 'stad·ik 'dəmp }

static electricity [ELEC] **1.** The study of the effects of macroscopic charges, including the transfer of a static charge from one object to another by actual contact or by means of a spark that bridges an air gap between the objects. **2.** *See* electrostatics. { 'stad·ik ,i,lek'tris·əd·ē }

static eliminator [ELECTR] Device intended to reduce the effect of atmospheric static interference in a radio receiver. { 'stad·ik i,lim·ə,nād·ər }

static induction transistor [ELECTR] A type of transistor capable of operating at high current and voltage, whose current-voltage characteristics do not saturate, and are similar in form to those of a vacuum triode. Abbreviated SIT. { 'stad·ik in'dək·shən tran,zis·tər }

static inverter [ELEC] A device that converts a dc voltage to a stable ac voltage for use in an uninterruptible power system. { 'stad·ik in'vərd·ər }

staticize [COMPUT SCI] **1.** To capture transient data in stable form, thus converting fleeting events into examinable information. **2.** To extract an instruction from the main computer memory and store the various component parts of it in the appropriate registers, preparatory to interpreting and executing it. { 'stad·ə,sīz }

static machine [ELEC] A machine for generating electric charges, usually by electric induction, sometimes used to build up high voltages for research purposes. { 'stad·ik mə,shēn }

static random-access memory [COMPUT SCI] A read-write random-access memory that uses either four transistors and two resistors to form a passive-load flip-flop, or six transistors to form a flip-flop with dynamic loads, for each cell in an array. Once data are loaded into the flip-flop storage elements, the flip-flop will indefinitely remain in that state until the information is intentionally changed or the power to the memory circuit is shut off. Abbreviated SRAM. { 'stad·ik 'rand·əm ,ak,ses 'mem·rē }

static reactive compensator [ELEC] A thyristor-controlled generator of reactive power that is used to compensate for reactive power in an electric power system in order to limit voltage variations. Also known as static var compensator. { 'stad·ik rē,ak·tiv ,käm·pən'sād·ər }

static regulator [ELECTR] Transmission regulator in which the adjusting mechanism is in self-equilibrium at any setting and requires control power to change the setting. { 'stad·ik ,reg·yə ,lād·ər }

static sensitivity [ELECTR] In phototubes, quotient of the direct anode current divided by the incident radiant flux of constant value. { 'stad·ik ,sen·sə'tiv·əd·ē }

static storage [COMPUT SCI] Computer storage such that information is fixed in space and available at any time, as in flip-flop circuits, electrostatic memories, and coincident-current magnetic-core storage. { 'stad·ik 'stȯr·ij }

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static subroutine [COMPUT SCI] In computers, a subroutine which involves no parameters other than the addresses of the operands. { 'stad·ik 'səb·rü,tēn }

static switching [ELEC] Switching of circuits by means of magnetic amplifiers, semiconductors, and other devices that have no moving parts. { 'stad·ik 'swich·iŋ }

static var compensator *See* static reactive compensator. { 'stad·ik 'vär ,käm·pən,sād·ər }

static variable [COMPUT SCI] A local variable that does not cease to exist upon termination of the block in which it can be accessed, but instead retains its most recent value until the next execution of this block. { 'stad·ik 'ver·ē·ə·bəl }

station [COMMUN] *See* broadcast station. [COMPUT SCI] One of a series of essentially similar positions or facilities occurring in a data-processing system. [ELEC] An assembly line or assembly machine location at which a wiring board or chassis is stopped for insertion of one or more parts. [ELECTR] A location at which radio, television, radar, or other electric equipment is installed. { stā·shən }

stationary ergodic noise [ELECTR] A stationary noise for which the probability that the noise voltage lies within any given interval at any time is nearly equal to the fraction of time that the noise voltage lies within this interval if a sufficiently long observation interval is recorded. { 'stā·shə ,ner·ē ər'gäd·ik 'nóiz }

stationary noise [ELECTR] A random noise for which the probability that the noise voltage lies within any given interval does not change with time. { 'stā·shə,ner·ē 'nóiz }

stationary wave *See* standing wave. { 'stā·shə ,ner·ē 'wāv }

station authentication [COMMUN] Security measure designed to establish the authenticity of a transmitting or receiving station. { 'stā·shən ó,then·tə'kā·shən }

statistical monitor [COMPUT SCI] A software monitor that collects information by periodically sampling activity in the system. { stə'tis·tə·kəl 'män·əd·ər }

statistical multiplexer [ELECTR] A device which combines several low-speed communications channels into a single high-speed channel, and which can manage more communications traffic than a standard multiplexer by analyzing traffic and choosing different transmission patterns. { stə'tis·tə·kəl 'məl·tə,plek·sər }

statistical multiplexing [COMMUN] Time-division multiplexing in which time on a communications channel is assigned to multiple users on a demand basis, rather than periodically to each user. { stə,tis·ti·kəl 'məl·tə,pleks·iŋ }

statmho [ELEC] The unit of conductance, admittance, and susceptance in the electrostatic centimeter-gram-second system of units, equal to the conductance between two points of a conductor when a constant potential difference of 1 statvolt applied between the points produces in this conductor a current of 1 statampere, the conductor not being the source of any electromotive force; equal to approximately 1.1126×10^{-12} mho. Abbreviated stat℧. Also known as statsiemens (statS). { 'stat,mō }

statohm [ELEC] The unit of resistance, reactance, and impedance in the electrostatic centimeter-gram-second system of units, equal to the resistance between two points of a conductor when a constant potential difference of 1 statvolt between these points produces a current of 1 statampere; it is equal to approximately 8.9876×10^{11} ohms. Abbreviated statΩ. { 'stad,ōm }

stator [ELEC] The portion of a rotating machine that contains the stationary parts of the magnetic circuit and their associated windings. { 'stād·ər }

stator armature [ELEC] A stator which includes the main current-carrying winding in which electromotive force produced by magnetic flux rotation is induced, it is found in most alternating-current machines. { 'stād·ər 'är·mə·chər }

stator plate [ELEC] One of the fixed plates in a variable capacitor; stator plates are generally insulated from the frame of the capacitor. { 'stād·ər ,plāt }

statS *See* statmho. { ¦stat'es }

statsiemens *See* statmho. { ¦stat'sē·mənz }

status byte [COMPUT SCI] A byte of storage whose contents indicate the activities currently taking place in some part of the computer or various conditions governing the execution of a computer program; often, each bit is assigned a particular meaning. { 'stad·əs ,bīt }

status check [COMPUT SCI] The detection of software failures and verification of programs through the use of redundant computers. { 'stad·əs ,chek }

status line [COMPUT SCI] A conductor on the bus of a computer over which an addressed storage location or component transmits its status to the central processing unit. { 'stad·əs ,līn }

status register [COMPUT SCI] A register maintained by the central processing unit that contains a status byte with information about activities currently taking place there. { 'stad·əs ,rej·ə·stər }

status word [COMPUT SCI] A word indicating the state of the system or the diagnosis of a state into which the system has entered. { 'stad·əs ,wərd }

statV *See* statvolt.

statvolt [ELEC] The unit of electric potential and electromotive force in the electrostatic centimeter-gram-second system of units, equal to the potential difference between two points such that the work required to transport 1 statcoulomb of electric charge from one to the other is equal to 1 erg; equal to approximately 299.79 volts. Abbreviated statV. { 'stat,vōlt }

STD *See* system target decoder.

STD input buffer [COMMUN] A first-in, first-out buffer at the input of a system target decoder for storage of compressed data from elementary streams before decoding. { ¦es¦tē¦dē 'in,půt ,bəf·ər }

STDM *See* synchronous time-division multiplexing.

steady-state current [ELEC] An electric current that does not change with time. { 'sted·ē ¦stāt 'kə·rənt }

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steady-state error [CONT SYS] The error that remains after transient conditions have disappeared in a control system. { 'sted·ē ¦stāt 'er·ər }

steam-electric generator [ELEC] An electric generator driven by a steam turbine. { ¦stēm i¦lek·trik 'jen·ə,rād·ər }

steerable antenna [ELECTROMAG] A directional antenna whose major lobe can be readily shifted in direction. { 'stir·ə·bəl an'ten·ə }

steganography [COMPUT SCI] The art and science of hiding a message in a medium, such as a digital picture or audio file, so as to defy detection. { ˌsteg·ə'näg·rə·fē }

STEM *See* scanning transmission electron microscope. { stem }

stenode circuit [ELECTR] Superheterodyne receiving circuit in which a piezoelectric unit is used in the intermediate-frequency amplifier to balance out all frequencies except signals at the crystal frequency, thereby giving very high selectivity. { 'ste,nōd ˌsər·kət }

step [COMPUT SCI] A single computer instruction or operation. { step }

step angle [ELEC] The angle between two successive positions of a stepping motor. { 'step ˌaŋ·gəl }

step attenuator [ELECTR] An attenuator in which the attenuation can be varied in precisely known steps by means of switches. { 'step ə,ten·yə ˌwād·ər }

step-by-step operation *See* single-step operation. { ¦step bī ¦step ˌäp·ə'rā·shən }

step-by-step switch [ELEC] A bank-and-wiper switch in which the wipers are moved by electromagnet ratchet mechanisms individual to each switch. { ¦step bī ¦step 'swich }

step-by-step system [COMMUN] *See* Strowger system. [CONT SYS] A control system in which the drive motor moves in discrete steps when the input element is moved continuously. { ¦step bī ¦step 'sis·təm }

step change [ELECTR] The change of a variable from one value to another in a single process, taking a negligible amount of time. { 'step ˌchānj }

step counter [COMPUT SCI] In computers, a counter in the arithmetic unit used to count the steps in multiplication, division, and shift operations. { 'step ˌkau̇nt·ər }

step-down transformer [ELEC] A transformer in which the alternating-current voltages of the secondary windings are lower than those applied to the primary winding. { 'step ¦dau̇n tranz'fȯr·mər }

step-function generator [ELECTR] A function generator whose output waveform increases and decreases suddenly in steps that may or may not be equal in amplitude. { 'step ¦fəŋk·shən 'jen·ə,rād·ər }

stepped-wave static inverter [ELEC] A static inverter that generates several pulses in each half cycle and combines them to achieve an output voltage which needs very little filtering. { 'stept ¦wāv 'stad·ik in'vərd·ər }

stepper motor [ELEC] A motor that rotates in short and essentially uniform angular movements rather than continuously; typical steps are 30, 45, and 90°; the angular steps are obtained electromagnetically rather than by the ratchet and pawl mechanisms of stepping relays. Also known as magnetic stepping motor; stepping motor; step-servo motor. { 'step·ər ˌmōd·ər }

stepping *See* zoning. { 'step·iŋ }

stepping motor *See* stepper motor. { 'step·iŋ ˌmōd·ər }

stepping relay [ELEC] A relay whose contact arm may rotate through 360° but not in one operation. Also known as rotary stepping relay; rotary stepping switch; stepping switch. { 'step·iŋ ˌrē ˌlā }

stepping switch *See* stepping relay. { 'step·iŋ ˌswich }

step-recovery diode [ELECTR] A varactor in which forward voltage injects carriers across the junction, but before the carriers can combine, voltage reverses and carriers return to their origin in a group; the result is abrupt cessation of reverse current and a harmonic-rich waveform. { 'step ri¦kəv·rē 'dī,ōd }

step response [CONT SYS] The behavior of a system when its input signal is zero before a certain time and is equal to a constant nonzero value after this time. { 'step ri,späns }

step-servo motor *See* stepper motor. { 'step 'sər·vō ˌmōd·ər }

step strobe marker [ELECTR] Form of strobe marker in which the discontinuity is in the form of a step in the time base. { 'step 'strōb ˌmär·kər }

step-up transformer [ELEC] Transformer in which the energy transfer is from a low-voltage winding to a high-voltage winding or windings. { 'step¦əp tranz,fȯr·mər }

step voltage regulator [ELEC] A type of voltage regulator used on distribution feeder lines; it provides increments or steps of voltage change. { 'step 'vōl·tij ˌreg·yə,lād·ər }

sterba curtain [ELECTROMAG] Type of stacked dipole antenna array consisting of one or more phased half-wave sections with a quarter-wave section at each end; the array can be oriented for either vertical or horizontal radiation, and can be either center or end fed. { 'stər·bə ˌkərt·ən }

stereo *See* stereophonic; stereo sound system. { 'ste·rē·ō }

stereo amplifier [ENG ACOUS] An audio-frequency amplifier having two or more channels, as required for use in a stereo sound system. { 'ste·rē·ō 'am·plə ˌfī·ər }

stereo broadcasting [COMMUN] Broadcasting two sound channels for reproduction by a stereo sound system having a stereo tuner at its input, to afford a listener a sense of the spatial distribution of the sound sources. { 'ster·ē·ō 'bród,kast·iŋ }

stereofluoroscopy [ELECTR] A fluoroscopic technique that gives three-dimensional images. { ¦ster·ē·ə·flu'räs·kə·pē }

stereo multiplex [COMMUN] Stereo broadcasting by a frequency-modulation station, in which the outputs of two channels are transmitted on the same carrier by frequency-division multiplexing. { 'ster·ē·ō 'məl·tə,pleks }

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stereophonic [ENG ACOUS] Pertaining to three-dimensional pickup or reproduction of sound, as achieved by using two or more separate audio channels. Also known as stereo. { ¦ster·ē·ə 'fän·ik }

stereophonics [ENG ACOUS] The study of reproducing or reinforcing sound in such a way as to produce the sensation that the sound is coming from sources whose spatial distribution is similar to that of the original sound sources. { ¦ster·ē·ə'fän·iks }

stereophonic sound system *See* stereo sound system. { ¦ster·ē·ə'fan·ik 'saund ,sis·təm }

stereo preamplifier [ENG ACOUS] An audio-frequency preamplifier having two channels, used in a stereo sound system. { 'ster·ē·ō ¦prē'am·plə,fī·ər }

stereo recorded tape [ENG ACOUS] Recorded magnetic tape having two separate recordings, one for each channel of a stereo sound system. { 'ster·ē·ō ri¦kȯrd·əd 'tāp }

stereo sound system [ENG ACOUS] A sound reproducing system in which a stereo pickup, stereo tape recorder, stereo tuner, or stereo microphone system feeds two independent audio channels, each of which terminates in one or more loudspeakers arranged to give listeners the same audio perspective that they would get at the original sound source. Also known as stereo; stereophonic sound system. { 'ster·ē·ō 'saund ,sis·təm }

stereo subcarrier [COMMUN] A subcarrier whose frequency is the second harmonic of the pilot subcarrier frequency used in frequency-modulation stereo broadcasting. { 'ster·ē·ō ¦səb'kar·ē·ər }

stereo tape recorder [ENG ACOUS] A magnetic-tape recorder having two stacked playback heads, used for reproduction of stereo recorded tape. { 'ster·ē·ō 'tāp ri,kȯrd·ər }

stereo tuner [ENG ACOUS] A tuner having provisions for receiving both channels of a stereo broadcast. { 'ster·ē·ō 'tün·ər }

sticking [COMPUT SCI] In computers, the tendency of a flip-flop to remain in, or to spontaneously switch to, one of its two stable states. { 'stik·iŋ }

stigmator [ELECTR] A device that corrects asymmetries in an electron lens by superposing on the field of the lens a second adjustable field. { stig'mäd·ər }

stiletto [ELECTR] An advanced electronic subsystem contained in United States strike aircraft type F-4D for detection, identification, and location of ground-based radars; the location of radar targets is determined by direction finding and passive ranging techniques; it is used for the delivery of guided and unguided weapons against the target radars under all weather conditions. { stə'led·ō }

stimulated-emission device [ELECTR] A device that uses the principle of amplification of electromagnetic waves by stimulated emission, namely, a maser or a laser. { 'stim·yə,lād·əd i'mish·ən di ,vīs }

stimulus [CONT SYS] A signal that affects the controlled variable in a control system. { 'stim·yə·ləs }

STN LCD *See* supertwisted nematic liquid-crystal display.

stochastic automaton *See* probabilistic automaton. { stō'kas·tik ȯ'täm·ə,tän }

stochastic control theory [CONT SYS] A branch of control theory that aims at predicting and minimizing the magnitudes and limits of the random deviations of a control system through optimizing the design of the controller. { stō'kas·tik kən'trōl ,thē·ə·rē }

stochastic sequential machine *See* probabilistic sequential machine. { stō'kas·tik si'kwen·chəl mə'shēn }

stop [CONT SYS] A bound or final position of a robot's movement. { stäp }

stop band *See* rejection band. { 'stäp ,band }

stop bits [COMPUT SCI] The last two bits transmitted in asynchronous data transmission to unequivocally indicate the end of a word. { 'stäp ,bits }

stop code [COMPUT SCI] A character that is placed in a storage medium and, when encountered, causes the computer system to cease processing until it is directed to continue. { 'stäp ,kōd }

stop element [COMMUN] The last element of a character in certain serial transmissions, used to ensure the recognition of the next start element. { 'stäp ,el·ə·mənt }

stop instruction [COMPUT SCI] An instruction in a computer program that causes execution of the program to stop. { 'stäp in,strək·shən }

stoplight [ELEC] One of the lights that are installed at the rear of an automotive vehicle and are automatically turned on when the driver applies the brakes. { 'stäp,līt }

stop loop *See* loop stop. { 'stäp ,lüp }

stopping capacitor *See* coupling capacitor. { 'stäp·iŋ kə,pas·əd·ər }

stopping potential [ELECTR] Voltage required to stop the outward movement of electrons emitted by photoelectric or thermionic action. { 'stäp·iŋ pə,ten·chəl }

stop signal [COMMUN] Signal that initiates the transfer of facsimile equipment from active to standby conditions. { 'stäp ,sig·nəl }

storage [COMPUT SCI] Any device that can accept, retain, and read back one or more times; the means of storing data may be chemical, electrical, magnetic, mechanical, or sonic. { 'stȯr·ij }

storage address register [COMPUT SCI] A register used to hold the address of a location in storage containing data that is being processed. { 'stȯr·ij ¦ad,res ,rej·ə·stər }

storage allocation [COMPUT SCI] The process of assigning storage locations to data or instructions in a digital computer. { 'stȯr·ij ,al·ə'kā·shən }

storage and retrieval system [COMPUT SCI] An organized method of putting items away in a manner which permits their recall or retrieval from storage. Also known as storetrieval system. { 'stȯr·ij ən ri'trē·vəl ,sis·təm }

storage area [COMPUT SCI] A specified set of locations in a storage unit. Also known as zone. { 'stȯr·ij ,er·ē·ə }

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storage battery [ELEC] A connected group of two or more storage cells or a single storage cell. Also known as accumulator; accumulator battery; rechargeable battery; secondary battery. { 'stór·ij ˌbad·ə·rē }

storage block [COMPUT SCI] A contiguous area of storage whose contents can be handled in a single operation. { 'stór·ij ˌbläk }

storage buffer register [COMPUT SCI] A register used in some microcomputers during input or output operations to temporarily hold a copy of the contents of a storage location. { 'stór·ij ˌbəf·ər ˌrej·ə·stər }

storage calorifier See cylinder. { 'stór·ij kə'lór·ə ˌfī·ər }

storage camera See iconoscope. { 'stór·ij ˌkam·rə }

storage capacity [COMPUT SCI] The quantity of data that can be retained simultaneously in a storage device; usually measured in bits, digits, characters, bytes, or words. Also known as capacity; memory capacity. { 'stór·ij kə,pas·əd·ē }

storage cell [COMPUT SCI] An elementary (logically indivisible) unit of storage; the storage cell can contain one bit, character, byte, digit (or sometimes word) of data. [ELEC] An electrolytic cell for generating electric energy, in which the cell after being discharged may be restored to a charged condition by sending a current through it in a direction opposite to that of the discharging current. Also known as secondary cell. { 'stór·ij ˌsel }

storage compacting [COMPUT SCI] The practice, followed on multiprogramming computers which use dynamic allocation, of assigning and reassigning programs so that the largest possible area of adjacent locations remains available for new programs. { 'stór·ij kəm,pakt·iŋ }

storage cycle [COMPUT SCI] **1.** Periodic sequence of events occurring when information is transferred to or from the storage device of a computer. **2.** Storing, sensing, and regeneration from parts of the storage sequence. { 'stór·ij ˌsī·kəl }

storage cycle time [COMPUT SCI] The time required to read and restore one word from a computer storage, or to write one word in computer storage. { 'stór·ij ˌsī·kəl ˌtīm }

storage density [COMPUT SCI] The number of characters stored per unit-length of area of storage medium (for example, number of characters per inch of magnetic tape). { 'stór·ij ˌden·səd·ē }

storage device [COMPUT SCI] A mechanism for performing the function of data storage: accepting, retaining, and emitting (unchanged) data items. Also known as computer storage device. { 'stór·ij di,vīs }

storage dump [COMPUT SCI] A printout of the contents of all or part of a computer storage. Also known as memory dump; memory print. { 'stór·ij ˌdəmp }

storage element [COMPUT SCI] Smallest part of a digital computer storage used for storing a single bit. { 'stór·ij ˌel·ə·mənt }

storage factor See Q. { 'stór·ij ˌfak·tər }

storage fill [COMPUT SCI] Storing a pattern of characters in areas of a computer storage that are not intended for use in a particular machine run; these characters cause the machine to stop if one of these areas is erroneously referred to. Also known as memory fill. { 'stór·ij ˌfil }

storage hierachy [COMPUT SCI] The sequence of storage devices, characterized by speed, type of access, and size for the various functions of a computer; for example, core storage for programs and data, disks or drums for temporary storage of massive amounts of data, magnetic tapes and disks for backup storage. { 'stór·ij 'hī·ər,är·kē }

storage integrator [COMPUT SCI] In an analog computer, an integrator used to store a voltage in the hold condition for future use while the rest of the computer assumes another computer control state. { 'stór·ij ˌint·ə,grād·ər }

storage key [COMPUT SCI] A special set of bits associated with every word or character in some block of storage, which allows tasks having a matching set of protection key bits to use that block of storage. { 'stór·ij ˌkē }

storage location [COMPUT SCI] A digital-computer storage position holding one machine word and usually having a specific address. { 'stór·ij lō,kā·shən }

storage mark [COMPUT SCI] The name given to a point location which defines the character space immediately to the left of the most significant character in accumulator storage. { 'stór·ij ˌmärk }

storage medium [COMPUT SCI] Any device or recording medium into which data can be copied and held until some later time, and from which the entire original data can be obtained. { 'stór·ij ˌmēd·ē·əm }

storage oscilloscope [ELECTR] An oscilloscope that can retain an image for a period of time ranging from minutes to days, or until deliberately erased to make room for a new image. { 'stór·ij ə'sil·ə,skōp }

storage pool [COMPUT SCI] A collection of similar data storage devices. { 'stór·ij ˌpül }

storage print [COMPUT SCI] In computers, a utility program that records the requested core image, core memory, or drum locations in absolute or symbolic form either on the line-printer or on the delayed-printer tape. { 'stór·ij ˌprint }

storage protection [COMPUT SCI] Any restriction on access to storage blocks, with respect to reading, writing, or both. Also known as memory protection. { 'stór·ij prə,tek·shən }

storage register [COMPUT SCI] A register in the main internal memory of a digital computer storing one computer word. Also known as memory register. { 'stór·ij rej·ə·stər }

storage-retrieval machine [CONT SYS] A computer-controlled machine for an automated storage and retrieval system that operates on rails and moves material either vertically or horizontally between a storage compartment and a transfer station. { 'stór·ij ri'trēv·əl mə ˌshēn }

storage ripple [COMPUT SCI] A hardware function, used during maintenance periods, which reads or writes zeros or ones through available storage

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locations to detect a malfunctioning storage unit. { 'stór·ij ,rip·əl }

storage surface [COMPUT SCI] In computers, the surface (screen), in an electrostatic storage tube, on which information is stored. { 'stór·ij ,sər·fəs }

storage tank *See* tank. { 'stór·ij ,taŋk }

storage time [ELECTR] **1.** The time required for excess minority carriers stored in a forward-biased *pn* junction to be removed after the junction is switched to reverse bias, and hence the time interval between the application of reverse bias and the cessation of forward current. **2.** The time required for excess charge carriers in the collector region of a saturated transistor to be removed when the base signal is changed to cut-off level, and hence for the collector current to cease. { 'stór·ij ,tīm }

storage-to-register instruction [COMPUT SCI] A machine-language instruction to move a word of data from a location in main storage to a register. { 'stór·ij tə 'rej·ə·stər in,strək·shən }

storage-to-storage instruction [COMPUT SCI] A machine-language instruction to move a word of data from one location in main storage to another. { 'stór·ij tə 'stór·ij in,strək·shən }

storage tube [ELECTR] An electron tube employing cathode-ray beam scanning and charge storage for the introduction, storage, and removal of information. Also known as electrostatic storage tube; memory tube (deprecated usage). { 'stór·ij ,tüb }

storage-type camera tube *See* iconoscope. { 'stór·ij ¦tīp 'kam·rə ,tüb }

store [COMPUT SCI] **1.** To record data into a (static) data storage device. **2.** To preserve data in a storage device. { stór }

store and forward [COMMUN] A procedure in data communications in which data are stored at some point between the sender and the receiver and are later forwarded to the receiver. { 'stór ən 'fór·wərd }

stored program [COMPUT SCI] A computer program that is held in a computer's main storage and carried out by a central processing unit that reads and acts on its instructions. { 'stórd 'prō ,gram }

stored-program computer [COMPUT SCI] A digital computer which executes instructions that are stored in main memory as patterns of data. { 'stórd ¦prō,gram kəm'pyüd·ər }

stored-program control [COMMUN] Electronic control of a telecommunications switching system by means of a program of instructions stored in bulk electronic memory. Abbreviated SPC. { 'stórd 'prō,gram kən'trōl }

stored-program logic [COMPUT SCI] Program that is stored in a memory unit containing logical commands in order to perform the same processes on all problems. { 'stórd 'prō,gram ,läj·ik }

stored-program numerical control *See* computer numerical control. { 'stórd ¦prō,gram nü'mer·ə·kəl kən,trōl }

stored response chain [COMPUT SCI] A fixed sequence of instructions that are stored in a file and acted on by an interactive computer program at a point where it would normally request instructions from the user, in order to save the user the trouble of repeatedly keying the same commands for a frequently used function. Abbreviated SRC. { 'stórd ri'späns ,chān }

stored routine [COMPUT SCI] In computers, a series of instructions in storage to direct the step-by-step operation of the machine. { 'stórd rü'tēn }

stored word [COMPUT SCI] The actual linear combination of letters (or their machine equivalents) to be placed in the machine memory; this may be physically quite different from a dictionary word. { 'stórd 'wərd }

storethrough [COMPUT SCI] The process of updating data in main memory each time the central processing unit writes into a cache. { 'stór,thrü }

store transmission bridge [ELEC] Transmission bridge, which consists of four identical impedance coils (the two windings of the back-bridge relay and line relay of a connector, respectively) separated by two capacitors, which couples the calling and called telephones together electrostatically for the transmission of voice-frequency (alternating) currents, but separates the two lines for the transmission of direct current for talking purposes (talking current). { 'stór tranz'mish·ən ,brij }

storetrieval system *See* storage and retrieval system. { 'stó·ri,trē·vəl ,sis·təm }

STR *See* self-tuning regulator.

straightforward circuit [COMMUN] Circuit in which signaling is automatic and in one direction. { 'strāt¦fór·wərd 'sər·kət }

straight-line coding [COMPUT SCI] A digital computer program or routine (section of program) in which instructions are executed sequentially, without branching, looping, or testing. { 'strāt ¦līn 'kōd·iŋ }

strained-layer superlattice [ELECTR] A structure consisting of alternating layers of two different semiconducting materials, each several nanometers thick, in which a mismatch between the lattice spacings of the two materials of up to several percent is accommodated by elastic strains in the thin layers without the generation of mismatch defects. { 'strānd ¦lā·ər ¦sü·pər'lad·əs }

strain insulator [ELEC] An insulator used between sections of a stretched wire or antenna to break up the wire into insulated sections while withstanding the total pull of the wire. { 'strān ,in·sə,lād·ər }

stranded conductor *See* stranded wire. { 'stran·dəd kən'dək·tər }

stranded wire [ELEC] A conductor composed of a group of wires or a combination of groups of wires, usually twisted together. Also known as stranded conductor. { 'stran·dəd 'wīr }

strapped magnetron [ELECTR] A multicavity magnetron in which resonator segments having the same polarity are connected together by small conducting strips to suppress undesired modes of oscillation. { 'strapt 'mag·nə,trän }

strapping [ELEC] Connecting two or more points in a circuit or device with a short piece of

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wire or metal. [ELECTR] Connecting together resonator segments having the same polarity in a multicavity magnetron to suppress undesired modes of oscillation. { 'strap·iŋ }

strapping option [COMPUT SCI] The rearrangement of jumpers on a printed circuit board to render a hardware feature operative or inoperative. { 'strap·iŋ ˌäp·shən }

stray capacitance [ELECTR] Undesirable capacitance between circuit wires, between wires and the chassis, or between components and the chassis of electronic equipment. { 'strā kə'pas·əd·əns }

stray current [ELEC] **1.** A portion of a current that flows over a path other than the intended path, and may cause electrochemical corrosion of metals in contact with electrolytes. **2.** An undesirable current generated by discharge of static electricity; it commonly arises in loading and unloading petroleum fuels and some chemicals, and can initiate explosions. { 'strā ˌkə·rənt }

stream [COMPUT SCI] A collection of binary digits that are transmitted in a continuous sequence, and from which extraneous data such as control information or parity bits are excluded. { strēm }

stream cipher [COMMUN] A cipher that makes use of an algorithmic procedure to produce an unending sequence of binary digits which is then combined either with plaintext to produce ciphertext or with ciphertext to recover plaintext. { 'strēm ˌsī·fər }

stream editor [COMPUT SCI] A modification of a statement editor to allow superlines that expand and contract as necessary; the most powerful type of text editor. Also known as string editor. { 'strēm ˌed·əd·ər }

streaming [COMPUT SCI] A malfunction in which a communicating device constantly transmits worthless data and thereby locks out all other devices on the line. { 'strēm·iŋ }

streaming current [ELEC] The electric current which is produced when a liquid is forced to flow through a diaphragm, capillary, or porous solid. { 'strēm·iŋ ˌkə·rənt }

streaming media [COMPUT SCI] Audio or video files that can begin playing as they are being downloaded to a computer. { ¦strēm·iŋ 'mēd·ē·ə }

streaming potential [ELEC] The difference in electric potential between a diaphragm, capillary, or porous solid and a liquid that is forced to flow through it. { 'strēm·iŋ pəˌten·chəl }

streaming tape [COMPUT SCI] A type of high-speed magnetic tape that is used as a backup storage for disks, particularly hard disks in microcomputer systems. { 'strēm·iŋ 'tāp }

STRESS [COMPUT SCI] A problem-oriented programming language used to solve structural engineering problems. Derived from structural engineering system solver. { stres }

stress sensor [CONT SYS] A contact sensor that responds to the forces produced by mechanical contact. { 'stres ˌsen·sər }

stress test [COMPUT SCI] A test of new software or hardware under unusually heavy work loads. { 'stres ˌtest }

striation [ELECTR] A succession of alternately luminous and dark regions sometimes observed in the positive column of a glow-discharge tube near the anode. { strī'ā·shən }

striking potential [ELECTR] **1.** Voltage required to start an electric arc. **2.** Smallest grid-cathode potential value at which plate current begins flowing in a gas-filled triode. { 'strīk·iŋ pə ˌten·chəl }

string [COMPUT SCI] A set of consecutive, adjacent items of similar type; normally a bit string or a character string. { striŋ }

string break [COMPUT SCI] In the sorting of records, the situation that arises when there are no records having keys with values greater than the highest key already written in the sequence of records currently being processed. { 'striŋ ˌbrāk }

string constant [COMPUT SCI] An arbitrary combination of letters, digits, and other symbols that is treated in a manner completely analogous to numeric constants. { 'striŋ ˌkän·stənt }

string editor See stream editor. { 'striŋ ˌed·əd·ər }

string electrometer [ENG] An electrometer in which a conducting fiber is stretched midway between two oppositely charged metal plates; the electrostatic field between the plates displaces the fiber laterally in proportion to the voltage between the plates. { 'striŋ ˌi¦lek'träm·əd·ər }

string galvanometer [ENG] A galvanometer consisting of a silver-plated quartz fiber under tension in a magnetic field, used to measure oscillating currents. Also known as Einthoven galvanometer. { 'striŋ ˌgal·və'näm·əd·ər }

string manipulation [COMPUT SCI] The handling of strings of characters in a computer storage as though they were single units of data. { 'striŋ məˌnip·yəˌlā·shən }

string manipulation language See string processing language. { 'striŋ məˌnip·yəˌlā·shən ˌlaŋ·gwij }

String-Oriented-Symbolic Language See SNOBOL. { 'striŋ ¦ȯr·ē,ent·əd sim'bäl·ik 'laŋ·gwij }

string processing language [COMPUT SCI] A higher-level programming language equipped with facilities to synthesize and decompose character strings, search them in response to arbitrarily complex criteria, and perform a variety of other manipulations. Also known as string manipulation language. { 'striŋ 'prä ˌses·iŋ ˌlaŋ·gwij }

stringy floppy [COMPUT SCI] A peripheral storage device for microcomputers that uses a removable magnetic tape cartridge with a $\frac{1}{16}$-inch-wide (1.5875-millimeter) loop of magnetic tape. { 'striŋ·ē 'fläp·ē }

strip-line circuit [ELECTROMAG] A circuit in which one or more strip transmission lines serve as filters or other circuit components. { 'strip ¦līn ˌsər·kət }

strip transmission line [ELECTROMAG] A microwave transmission line consisting of a thin, narrow, rectangular metal strip that is supported above a ground-plane conductor or between two wide ground-plane conductors and is usually

separated from them by a dielectric material. { 'strip tranz'mish·ən ,līn }

strobe [ELECTR] **1.** Intensified spot in the sweep of a deflection-type indicator, used as a reference mark for ranging or expanding the presentation. **2.** Intensified sweep on a radar's plan-position indicator or B-scope; such a strobe may result from certain types of interference, or it may be purposely applied as a bearing or heading marker, or to show the estimated azimuth of a jamming source, as a "jam strobe." **3.** A signaling pulse of very short duration. { strōb }

strobe circuit [ELECTR] A circuit that produces an output pulse only at certain times or under certain conditions, such as a gating circuit or a coincidence circuit. { 'strōb ,sər·kət }

strobe marker [ELECTR] A small bright spot, or a short gap, or other discontinuity produced on the trace of a radar display to indicate that part of the time base which is receiving attention. { 'strōb 'mär·kər }

strobe pulse [ELECTR] Pulse of duration less than the time period of a recurrent phenomenon used for making a close investigation of that phenomenon; the frequency of the strobe pulse bears a simple relation to that of the phenomenon, and the relative timing is usually adjustable. { 'strōb ,pəls }

strobing [COMPUT SCI] The technique required to time-synchronize data appearing as pulses at the output of a computer memory. { 'strōb·iŋ }

stroboscopic lamp *See* flash lamp. { ¦sträb·ə ¦skäp·ik 'lamp }

stroboscopic tube *See* strobotron. { ¦sträb·ə ¦skäp·ik 'tüb }

strobotron [ELECTR] A cold-cathode gas-filled arc-discharge tube having one or more internal or external grids to initiate current flow and produce intensely bright flashes of light for a stroboscope. Also known as stroboscopic tube. { 'strō·bə ,trän }

stroke [COMPUT SCI] **1.** In optical character recognition, straight or curved portion of a letter, such as is commonly made with one smooth motion of a pen. Also known as character stroke. **2.** That segment of a printed or handwritten character which has been temporarily isolated from other segments for the purpose of analyzing it, particularly with regard to its dimensions and relative reflectance. Also known as character stroke. [ELECTR] The penlike motion of a focused electron beam in cathode-ray-tube diplays. { strōk }

stroke analysis [COMPUT SCI] In character recognition, a method employed in character property detection in which an input specimen is dissected into certain prescribed elements; the sequence, relative positions, and number of detected elements are then used to identify the characters. { 'strōk ə,nal·ə·səs }

stroke center line [COMPUT SCI] In character recognition, a line midway between the two average-edge lines; the center line describes the stroke's direction of travel. Also known as center line. { 'strōk 'sen·tər ,līn }

stroke edge [COMPUT SCI] In character recognition, a continuous line, straight or otherwise, which traces the outermost part of intersection of the stroke along the two sides of its greatest dimension. { 'strōk ,ej }

stroke speed [COMMUN] Number of times per minute that a fixed line, perpendicular to the direction of scanning, is crossed in one direction by a scanning or recording spot in a facsimile system. Also known as scanning frequency, scanning line frequency. { 'strōk ,spēd }

stroke width [COMPUT SCI] In character recognition, the distance that obtains, at a given location, between the points of intersection of the stroke edges and a line drawn perpendicular to the stroke center line. { 'strōk ,width }

strong algorithm [COMMUN] A cryptographic algorithm for which the cost or time required to obtain the message or key is prohibitively great in practice even though the message may be obtainable in theory. { 'strōŋ 'al·gə,rith·əm }

strongly typed language [CONT SYS] A high-level programming language in which the type of each variable must be declared at the beginning of the program, and the language itself then enforces rules concerning the manipulation of variables according to their types. { 'strōŋ·lē ¦tīpt 'laŋ·gwij }

Strowger system [COMMUN] An automatic telephone switching system that uses successive step-by-step selector switches actuated by current pulses produced by rotation of a telephone dial. Also known as step-by-step system. { 'strō·gər ,sis·təm }

structural engineering system solver *See* STRESS. { 'strək·chə·rəl ,en·jə'nir·iŋ 'sis·təm ,säl·vər }

structural information [COMPUT SCI] Information specifying the number of independently variable features or degrees of freedom of a pattern. { 'strək·chə·rəl ,in·fər'mā·shən }

structure [COMPUT SCI] For a data-processing system, the nature of the chain of command, the origin and type of data collected, the form and destination of results, and the procedures used to control operations. { 'strək·chər }

structured analysis [SYS ENG] A method of breaking a large problem or process into smaller components to aid in understanding, and then identifying the components and their interrelationships and reassembling them. { 'strək·chərd ə'nal·ə·səs }

structured data type [COMPUT SCI] The manner in which a collection of data items, which may have the same or different scalar data types, is represented in a computer program. { 'strək·chərd 'dad·ə ,tīp }

structured programming [COMPUT SCI] The use of program design and documentation techniques that impose a uniform structure on all computer programs. { 'strək·chərd 'prō,gram·iŋ }

Structured Query Language [COMPUT SCI] The standard language for accessing relational databases. Abbreviated SQL. { ,strək·chərd 'kwir·ē ,laŋ·gwij }

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structured variable See record variable. { 'strək·chərd 'ver·ē·ə·bəl }

structured walkthrough [COMPUT SCI] A formal method of debugging a computer system or program, involving a systematic review to search for errors and inefficiencies. { 'strək·chərd 'wȯk ˌthrü }

stub [COMPUT SCI] **1.** The left-hand portion of a decision table, consisting of a single column, and comprising the condition stub and the action stub. **2.** A program module that is only partly completed, to the extent needed to fulfill the requirements of other modules in the computer system. [ELECTROMAG] **1.** A short section of transmission line, open or shorted at the far end, connected in parallel with a transmission line to match the impedance of the line to that of an antenna or transmitter. **2.** A solid projection one-quarter-wavelength long, used as an insulating support in a waveguide or cavity. { stəb }

stub angle [ELECTROMAG] Right-angle elbow for a coaxial radio-frequency transmission line which has the inner conductor supported by a quarter-wave stub. { 'stəb ˌaŋ·gəl }

stub cable [ELEC] Short branch off a principal cable; the end is often sealed until it is used at a later date; pairs in the stub are referred to as stubbed-out pairs. { 'stəb ˌkā·bəl }

stub matching [ELECTROMAG] Use of a stub to match a transmission line to an antenna or load; matching depends on the spacing between the two wires of the stub, the position of the shorting bar, and the point at which the transmission line is connected to the stub. { 'stəb ˌmach·iŋ }

stub-supported line [ELECTROMAG] A transmission line that is supported by short-circuited quarter-wave sections of coaxial line; a stub exactly a quarter-wavelength long acts as an insulator because it has infinite reactance. { 'stəb səˌpȯrd·əd 'līn }

stub tuner [ELECTROMAG] Stub which is terminated by movable short-circuiting means and used for matching impedance in the line to which it is joined as a branch. { 'stəb ˌtün·ər }

studio [COMMUN] A facility in which video or audio programs are produced. { 'stüd·ē·ō }

stunt box [ELEC] A device to control the nonprinting functions of a teletypewriter terminal. { 'stənt ˌbäks }

stutter [COMMUN] Series of undesired black and white lines sometimes produced when a facsimile signal undergoes a sharp amplitude change. { 'stəd·ər }

stylus [COMPUT SCI] The pointed device used to draw images on a graphics tablet. { 'stī·ləs }

stylus printing See matrix printing. { 'stī·ləs ˌprint·iŋ }

subalphabet [COMPUT SCI] A subset of an alphabet. { səb'al·fəˌbet }

subaperture [ENG] Any subset of an array of transmitters of acoustic or electromagnetic radiation. { səb'ap·ə·chər }

subassembly [ELECTR] Two or more components combined into a unit for convenience in assembling or servicing equipment; an intermediate-frequency strip for a receiver is an example. { ˌsəb·ə'sem·blē }

subcarrier [ELECTR] **1.** A carrier that is applied as a modulating wave to modulate another carrier. **2.** See chrominance subcarrier. { ˌsəb'kar·ē·ər }

subcarrier oscillator [ELECTR] **1.** The crystal oscillator that operates at the chrominance subcarrier or burst frequency of 3.579545 megahertz in an analog color television receiver; this oscillator, synchronized in frequency and phase with the transmitter master oscillator, furnishes the continuous subcarrier frequency required for demodulators in the receiver. **2.** An oscillator used in a telemetering system to translate variations in an electrical quantity into variations of a frequency-modulated signal at a subcarrier frequency. { ˌsəb'kar·ē·ər 'äs·əˌlād·ər }

subchannel [COMPUT SCI] The portion of an input/output channel associated with a specific input/output operation. { ˌsəb'chan·əl }

subclutter visibility [ELECTR] A measure of the effectiveness of moving-target indicator radar, equal to the ratio of the signal from a fixed target that can be canceled to the signal from a just visible moving target; often calculated for a target moving at an optimum velocity (unlike improvement factor). { 'səbˌklad·ər ˌviz·ə'bil·əd·ē }

subcommutation [COMMUN] In telemetry, commutation of additional channels with output applied to individual channels of the primary commutator. { ˌsəbˌkäm·yə'tā·shən }

subcycle generator [ELECTR] Frequency-reducing device used in telephone equipment which furnishes ringing power at a submultiple of the power supply frequency. { 'səbˌsī·kəl 'jen·əˌrād·ər }

subdivided capacitor [ELEC] Capacitor in which several capacitors known as sections are mounted so that they may be used individually or in combination. { ˌsəb·di'vīd·əd kə'pas·əd·ər }

subframe [COMMUN] In telemetry, a complete sequence of frames during which all subchannels of a specific channel are sampled once. { 'səb ˌfrām }

subharmonic triggering [ELECTR] A method of frequency division which makes use of a triggered multivibrator having a period of one cycle which allows triggering only by a pulse that is an exact integral number of input pulses from the last effective trigger. { ˌsəb·här'män·ik 'trig·ə·riŋ }

submarine cable [ELEC] A cable designed for service under water, usually a lead-covered cable with steel armor applied between layers of jute. { ˌsəb·mə'rēn 'kā·bəl }

submillimeter wave [ELECTROMAG] An electromagnetic wave whose wavelength is less than 1 millimeter, corresponding to frequencies above 300 gigahertz. { ˌsəbˌmil·əˌmēd·ər ˌwāv }

subminiature tube [ELECTR] An extremely small electron tube designed for use in hearing aids and other miniaturized equipment; a typical

subminiature tube is about 1½ inches (4 centimeters) long and 0.4 inch (1 centimeter) in diameter, with the pins emerging through the glass base. { ¦səb'min·yə·chər 'tüb }

sub-Nyquist sampling [COMMUN] **1.** Any technique of sampling an analog signal at a rate lower than the Nyquist rate in such a way as to preserve signal content without aliasing distortion. **2.** In particular, the sampling of video signals at a rate lower than the Nyquist rate and at an odd multiple of the frame rate, so that the aliasing components are placed into periodically spaced voids in the video spectrum where they can be removed by a comb filter at the receiver. { ¦səb 'nī,kwist ,sam·pliŋ }

suboptimization [SYS ENG] The process of fulfilling or optimizing some chosen objective which is an integral part of a broader objective; usually the broad objective and lower-level objective are different. { ¦səb,äp·tə·mə'zā·shən }

subprogram [COMPUT SCI] A part of a larger program which can be converted independently into machine language. { ¦səb'prō,gram }

subrefraction [ELECTROMAG] Atmospheric refraction which is less than standard refraction. { ¦səb·ri'frak·shən }

subroutine [COMPUT SCI] **1.** A body of computer instruction (and the associated constants and working-storage areas, if any) designed to be used by other routines to accomplish some particular purpose. **2.** A statement in FORTRAN used to define the beginning of a closed subroutine (first definition). { 'səb·rü,tēn }

subroutine library [COMPUT SCI] A collection of subroutines that is stored on a disk or other direct-access storage device and can be used by a programmer through facilities of the computer's operating system. { 'səb·rü,tēn 'lī,brēr·ē }

subschema [COMPUT SCI] An individual user's partial view of a database. { 'səb,skē·mə }

subscriber line [ELEC] A telephone line between a central office and a telephone station, private branch exchange, or other end equipment. Also known as central office line; subscriber loop. { səb'skrīb·ər ,līn }

subscriber loop *See* subscriber line. { səb 'skrīb·ər ,lüp }

subscriber multiple [ELEC] Bank of jacks in a manual switchboard providing outgoing access to subscriber lines, and usually having more than one appearance across the face of the switchboard. { səb'skrīb·ər 'məl·tə·pəl }

subscriber set *See* subset. { səb'skrīb·ər ,set }

subscriber station [COMMUN] The connection between a central office and an outside location, including the circuit, some circuit termination equipment, and possibly some associated input/output equipment. { səb'skrīb·ər ,stā·shən }

subscription database *See* information network. { səb'skrip·shən 'dad·ə,bās }

subscription television [COMMUN] A television service in which programs are broadcast in coded or scrambled form, for reception only by subscribers who make payments for use of the decoding or unscrambling devices required to obtain a clear program. Also known as pay television. { səb'skrip·shən 'tel·ə,vizh·ən }

subset [COMMUN] A telephone or other subscriber equipment connected to a communication system, such as a modem. Derived from subscriber set. { 'səb,set }

substandard propagation [ELECTROMAG] The propagation of radio energy under conditions of substandard refraction in the atmosphere; that is, refraction by an atmosphere or section of the atmosphere in which the index of refraction decreases with height at a rate of less than 12 N units (unit of index of refraction) per 1000 feet (304.8 meters). { ¦səb'stan·dərd ,präp·ə'gā·shən }

substation *See* electric power substation. { 'səb ,stā·shən }

substitute mode [COMPUT SCI] One method of exchange buffering, in which segments of storage function alternately as buffer and as program work area. { 'səb·stə,tüt ,mōd }

substitution alphabet [COMMUN] An alphabet used in a coded message in which each letter in the original message is replaced by another letter in the coded message, according to a set of rules. { ,səb·stə¦tü·shən 'al·fə,bet }

substitution cipher [COMMUN] A cipher in which the characters of the original message are replaced by other characters according to a key. { ,səb·stə'tü·shən ,sī·fər }

substrate [ELECTR] The physical material on which a microcircuit is fabricated, used primarily for mechanical support and insulating purposes, as with ceramic, plastic, and glass substrates; however, semiconductor and ferrite substrates may also provide useful electrical functions. [ENG] Basic surface on which a material adheres, for example, paint or laminate. { 'səb ,strāt }

substring [COMPUT SCI] A sequence of successive characters within a string. { 'səb,striŋ }

subsurface radar *See* ground-probing radar. { ,səb,sər·fəs 'rā·dar }

subsurface wave [ELECTROMAG] Electromagnetic wave propagated through water or land; operating frequencies for communications may be limited to approximately 35 kilohertz due to attenuation of high frequencies. { ¦səb'sər·fəs 'wāv }

subsynchronous [ELEC] Operating at a frequency or speed that is related to a submultiple of the source frequency. { ¦səb'siŋ·krə·nəs }

subsynchronous resonance [ELEC] An electrical resonant frequency on an alternating-current transmission line that is less than the line frequency, and results from the insertion of series capacitors to cancel out part of the line and system reactance. { səb¦siŋ·krə·nəs 'rez·ən·əns }

subsystem [ENG] A major part of a system which itself has the characteristics of a system, usually consisting of several components. { 'səb ,sis·təm }

subtracter [COMPUT SCI] A computer device that can form the difference of two numbers or quantities. { səb'trak·tər }

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subtractive synthesis [ENG ACOUS] A method of synthesizing musical tones, in which an electronic circuit produces a standard waveform (such as a sawtooth wave), which contains a very large number of harmonics at known relative amplitudes, and this circuit is followed by a variety of electric or electronic filters to convert the basic tone signals into the desired musical waveforms. { səb,trak·tiv 'sin·thə·səs }

subtractor [ELECTR] A circuit whose output is determined by the differences in analog or digital input signals. { səb'trak·tər }

subvoice-grade channel [COMMUN] A channel whose bandwidth is smaller than the bandwidth of a voice-grade channel; it is usually a subchannel of a voice-grade line. { ¦səb'vȯis ˌgrād ˌchan·əl }

subway-type transformer [ELEC] Transformer of submersible construction. { 'səbˌwā ¦tīp tranz'fȯr·mər }

subwoofer [ENG ACOUS] A loudspeaker designed to reproduce extremely low audio frequencies, extending into the infrasonic range, generally used in conjunction with a crossover network, a woofer, and a tweeter. { 'səbˌwůf·ər }

successive approximation converter [COMPUT SCI] An analog-to-digital converter which operates by successively considering each bit position in the digital output and setting that bit equal to 0 or 1 on the basis of the output of a comparator. { sək'ses·iv əˌpräk·sə'mā·shən kənˌvərd·ər }

successor job [COMPUT SCI] A job that uses the output of another job (predecessor) as its input, so that it cannot start until the other job has been successfully completed. { sək'ses·ər ˌjäb }

suffix notation *See* reverse Polish notation. { 'səf ˌiks nōˌtā·shən }

Suhl effect [ELECTR] When a strong transverse magnetic field is applied to an *n*-type semiconducting filament, holes injected into the filament are deflected to the surface, where they may recombine rapidly with electrons or be withdrawn by a probe. { 'sül iˌfekt }

suite [COMPUT SCI] A collection of related computer programs run one after another. { swēt }

sulfating [ELEC] The formation of lead sulfate on the plates of lead-acid storage batteries reducing the energy-storing ability of the battery and eventually causing failure. { 'səlˌfād·iŋ }

summary recorder [COMPUT SCI] In computers, output equipment which records a summary of the information handled. { 'səm·ə·rē ri'kȯrd·ər }

summation check [COMPUT SCI] An error-detecting procedure involving adding together all the digits of some number and comparing this sum to a previously computed value of the same sum. { sə'mā·shən ˌchek }

summation network *See* summing network. { sə'mā·shən ˌnetˌwərk }

summing amplifier [ELECTR] An amplifier that delivers an output voltage which is proportional to the sum of two or more input voltages or currents. { 'səm·iŋ 'am·pləˌfī·ər }

summing network [ELEC] A passive electric network whose output voltage is proportional to the sum of two or more input voltages. Also known as summation network. { 'səm·iŋ 'netˌwərk }

sun follower [ELECTR] A photoelectric pickup and an associated servomechanism used to maintain a sun-facing orientation, as for a space vehicle. Also known as sun seeker. { 'sən ˌfäl·ə·wər }

S-unit meter *See* signal-strength meter. { 'es ˌyü·nət ˌmēd·ər }

sunlamp [ELEC] A mercury-vapor gas-discharge tube used to produce ultraviolet radiation for therapeutic or cosmetic purposes. { 'sənˌlamp }

sun seeker *See* sun follower. { 'sən ˌsēk·ər }

sun sensor *See* solar sensor. { 'sən ˌsen·sər }

sun strobe [ELECTR] The signal display seen on a radar plan-position-indicator screen when the radar antenna is aimed at the sun, the pattern resembles that produced by continuous-wave interference, and is due to radio-frequency energy radiated by the sun. { 'sən ˌströb }

supercardioid microphone [ENG ACOUS] A microphone whose response pattern resembles a cardioid but is exaggerated along the axis of maximum response, so that it is highly sensitive in one direction and insensitive in all others. Also known as superdirectional microphone. { ¦sü·pərˌkärd·ēˌȯid 'mī·krəˌfōn }

superchip *See* super-large-scale integrated circuit. { 'sü·pərˌchip }

supercomputer [COMPUT SCI] A computer which is among those with the highest speed, largest functional size, biggest physical dimensions, or greatest monetary cost in any given period of time. { 'sü·pər·kəmˌpyüd·ər }

superconducting computer [COMPUT SCI] A high-performance computer whose circuits employ superconductivity and the Josephson effect to reduce computer cycle time. { ¦sü·pər·kən'dək·tiŋ kəm'pyüd·ər }

superconducting fault-current limiter [ELEC] A device which uses the transition of superconductors from zero to finite resistance to limit the fault current that results from a short circuit in an electric power system to a value that is not much higher than the nominal current. { ¦sü·pər·kən ˌduk·tiŋ ˌfȯlt ˌkər·ənt ˌlim·əd·ər }

superconducting magnetic energy storage [ELEC] The storing of electrical energy, generally for use by an electrical utility during peak load period, as a circulating current in a large superconducting coil or magnet. { ¦sü·pər·kən ¦dək·tiŋ magˈned·ik ¦en·ər·jē 'stȯr·ij }

superconducting material *See* superconductor. { ¦sü·pər·kən'dək·tiŋ mə'tir·ē·əl }

superconducting quantum interference device [ELECTR] A superconducting ring that couples with one or two Josephson junctions; applications include high-sensitivity magnetometers, near-magnetic-field antennas, and measurement of very small currents or voltages. Abbreviated SQUID. { ¦sü·pər·kən'dək·tiŋ 'kwän·təm ˌin·tər ¦fir·ənsˌdiˌvīs }

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superconductivity [SOLID STATE] A property of many metals, alloys, and chemical compounds at temperatures near absolute zero by virtue of which their electrical resistivity vanishes and they become strongly diammagnetic. { |sü·pər·kən'dək'tiv·əd· }

superconductor [SOLID STATE] Any material capable of exhibiting superconductivity; examples include iridium, lead, mercury, niobium, tin, tantalum, vanadium, and many alloys. Also known as cryogenic conductor; superconducting material { |sü·pər·kən'dək·r }

superdirectional microphone *See* supercardioid microphone. { ˌsü·pər·diˌrek·shən·əl 'mī·krəˌfōn }

superemitron camera *See* image iconoscope. { |sü·pər'em·əˌträn ˌkam·rə }

supergroup [COMMUN] In carrier telephony, five groups (60 voice channels) multiplexed together and treated as a unit; a basic supergroup occupies the band between 312 and 552 kilohertz. { 'sü·pərˌgrüp }

superhet *See* superheterodyne receiver. { 'sü·pərˌhet }

superheterodyne receiver [ELECTR] A receiver in which all incoming modulated radio-frequency carrier signals are converted to a common intermediate-frequency carrier value for additional amplification and selectivity prior to demodulation, using heterodyne action; the output of the intermediate-frequency amplifier is then demodulated in the second detector to give the desired audio-frequency signal. Also known as superhet. { |sü·pər'he·trəˌdīn ri'sē·vər }

superhigh frequency [COMMUN] A frequency band from 3000 to 30,000 megahertz, corresponding to wavelengths from 1 to 10 centimeters. Abbreviated SHF. { |sü·pər'hī |frē·kwən·sē }

super-large-scale integrated circuit [ELECTR] A very complex integrated circuit that has a high density of transistors and other components, for a total of 10^6 or more components. Also known as superchip. Abbreviated SLSI circuit. { |sü·pər |lärj |skāl ˌin·tə'grād·əd 'sər·kət }

superlattice [ELECTR] A structure consisting of alternating layers of two different semiconductor materials, each several nanometers thick. { |sü·pər'lad·əs }

superline [COMPUT SCI] A unit of text longer than an ordinary line, used in some of the more powerful text editors. { 'sü·pərˌlīn }

supermicro [COMPUT SCI] A computer resembling a supermini in design but scaled down to the size of a microcomputer, usually capable of working with a small number of users at once. { |sü·pər'mī·krō }

superposed circuit [COMMUN] Additional channel obtained from one or more circuits, normally provided for other channels, in a way that all channels can be used simultaneously without mutual interference. { |sü·pər'pōzd 'sər·kət }

superposition integral [CONT SYS] An integral which expresses the response of a linear system to some input in terms of the impulse response or step response of the system; it may be thought of as the summation of the responses to impulses or step functions occurring at various times. { ˌsü·pər·pə'zish·ən 'int·ə·grəl }

superposition theorem *See* principle of superposition. { ˌsü·pər·pə'zish·ən 'thir·əm }

superregeneration [ELECTR] Regeneration in which the oscillation is broken up or quenched at a frequency slightly above the upper audibility limit of the human ear by a separate oscillator circuit connected between the grid and anode of the amplifier tube, to prevent regeneration from exceeding the maximum useful amount. { |sü·pər·riˌjen·ə'rā·shən }

superscalar architecture [COMPUT SCI] A design that enables a central processing unit to send several instructions to different execution units simultaneously, allowing it to execute several instructions in each clock cycle. { |sü·pərˌskā·lər 'är·kəˌtek·chər }

supersensitive relay [ELEC] A relay that operates on extremely small currents, generally below 250 microamperes. { |sü·pər'sen·səd·iv 'rēˌlā }

superset [COMPUT SCI] A programming language that contains all the features of a given language and has been expanded or enhanced to include other features as well. { 'sü·pərˌset }

superstandard propagation [ELECTROMAG] The propagation of radio waves under conditions of superstandard refraction in the atmosphere, that is, refraction by an atmosphere or section of the atmosphere in which the index of refraction decreases with height at a rate of greater than 12 N units (unit of index of refraction) per 1000 feet (304.8 meters). { |sü·pər'stan·dərd ˌpräp·ə'gā·shən }

supertweeter [ENG ACOUS] A loudspeaker designed to reproduce extremely high audio frequencies, extending into the ultrasonic range, generally used in conjunction with a crossover network, a tweeter, and a woofer. { 'süp·ərˌtwēd·ər }

supertwisted nematic liquid-crystal display [ELECTR] A display in which nematic liquid-crystal molecules are twisted more than 90°, and the picture elements respond to the average (root-mean-square) voltage applied by transistors connected to each row and column to switch the liquid. Abbreviated STN LCD. Also known as passive-matrix liquid-crystal display (PM LCD). { |sü·pərˌtwis·təd nə|mad·ik ˌlik·wəd 'krist·əl di ˌsplā }

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supervisor [COMPUT SCI] A collection of programs, forming part of the operating system, that provides services for and controls the running of user programs. { 'sü·pər,vī·zər }

supervisor call [COMPUT SCI] A mechanism whereby a computer program can interrupt the normal flow of processing and ask the supervisor to perform a function for the program that the program cannot or is not permitted to perform for itself. Also known as system call. { 'sü·pər ,vī·zər ,kȯl }

supervisor interrupt [COMPUT SCI] An interruption caused by the program being executed which issues an instruction to the master control program. { 'sü·pər,vī·zər 'int·ə,rəpt }

supervisor mode [COMPUT SCI] A method of computer operation in which the computer can execute all its own instructions, including the privileged instruction not normally allowed to the programmer, in contrast to problem mode. { 'sü·pər,vī·zər ,mōd }

supervisory computer [COMPUT SCI] A computer which accepts test results from satellite computers, transmits new programs to the satellite computers, and may further communicate with a larger computer. { ¦sü·pər¦vīz·ə·rē kəm'pyüd·ər }

supervisory control and data acquisition [ENG] A version of telemetry commonly used in wide-area industrial applications, such as electrical power generation and distribution and water distribution, which includes supervisory control of remote stations as well as data acquisition from those stations over a bidirectional communications link. Abbreviated SCADA. { ,sü·pər ¦vīz·ə·rē kən,trōl ən 'dad·ə ,ak·wə,zish·ən }

supervisory controlled manipulation [ENG] A form of remote manipulation in which a computer enables the operator to teach the manipulator motion patterns to be remembered and repeated later. { ¦sü·pər¦vīz·ə·rē kən'trōld mə ,nip·yə'lā·shən }

supervisory expert control system [CONT SYS] A control system in which an expert system is used to supervise a set of control, identification, and monitoring algorithms. { ,sü·pər¦vīz·ə·rē ,ek,spərt kən'trōl ,sis·təm }

supervisory program [COMPUT SCI] A program that organizes and regulates the flow of work in a computer system, for example, it may automatically change over from one run to another and record the time of the run. { ¦sü·pər ¦vīz·ə·rē 'prō,gram }

supervisory routine [COMPUT SCI] A program or routine that initiates and guides the execution of several (or all) other routines and programs; it usually forms part of (or is) the operating system. { ¦sü·pər¦vīz·ə·rē rü'tēn }

supervisory signal [ELEC] A signal which indicates the operating condition of a circuit or a combination of circuits in a switching apparatus or other electrical equipment to an attendant. { ¦sü·pər¦vīz·ə·rē 'sig·nəl }

supervisory system [ELEC] A system of control, indicating, and telemetry devices which operates between the stations of an electric power distribution system, using a single common channel to transmit signals. { ¦sü·pər¦vīz·ə·rē 'sis·təm }

supervoltage [ELEC] A voltage in the range of 500 to 2000 kilovolts, used for some x-ray tubes. { ¦sü·pər'vōl·tij }

supplementary group [ELEC] In wire communications, a group of trunks that directly connects local or trunk switching centers over other than a fundamental (or backbone) route. { ¦səp·lə ¦men·trē 'grüp }

supply voltage [ELEC] The voltage obtained from a power source for operation of a circuit or device. { sə'plī ,vōl·tij }

suppressed carrier [COMMUN] A carrier in a modulated signal that is suppressed at the transmitter; the chrominance subcarrier in an analog color television transmitter is an example. { sə'prest 'kar·ē·ər }

suppressed-carrier modulation [COMMUN] Modulation resulting from elimination or partial suppression of the carrier component from an amplitude modulated wave. { sə'prest 'kar·ē·ər ,mäj·ə'lā·shən }

suppressed-carrier transmission [COMMUN] Transmission in which the carrier component of the modulated wave is eliminated or partially suppressed, leaving only the side bands to be transmitted. { sə'prest 'kar·ē·ər tranz'mish·ən }

suppression [COMPUT SCI] **1.** Removal or deletion usually of insignificant digits in a number, especially zero suppression. **2.** Optional function in either on-line or off-line printing devices that permits them to ignore certain characters or groups of characters which may be transmitted through them. [ELECTR] Elimination of any component of an emission, as a particular frequency or group of frequencies in a radio-frequency signal. { sə'presh·ən }

suppressor [ELEC] **1.** In general, a device used to reduce or eliminate noise or other signals that interfere with the operation of a communication system, usually at the noise source. **2.** Specifically, a resistor used in series with a spark plug or distributor of an automobile engine or other internal combustion engine to suppress spark noise that might otherwise interfere with radio reception. [ELECTR] *See* suppressor grid. { sə'pres·ər }

suppressor grid [ELECTR] A grid placed between two positive electrodes in an electron tube primarily to reduce the flow of secondary electrons from one electrode to the other; it is usually used between the screen grid and the anode. Also known as suppressor. { sə'pres·ər ,grid }

suppressor pulse [ELECTR] Pulse used to disable an ionized flow field or beacon transponder during intervals when interference would be encountered. { sə'pres·ər ,pəls }

surface-acoustic-wave device [ELECTR] Any device, such as a filter, resonator, or oscillator, which employs surface acoustic waves with frequencies in the range $10^7 - 10^9$ hertz, traveling on the optically polished surface of a piezoelectric substrate, to process electronic signals. { 'sər·fəs ə'kü·stik 'wāv di,vīs }

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surface-acoustic-wave filter [ELECTR] An electric filter consisting of a piezoelectric bar with a polished surface along which surface acoustic waves can propagate, and on which are deposited metallic transducers, one of which is connected, via thermocompression-bonded leads, to the electric source, while the other drives the load. { 'sər·fəs ə'kü·stik 'wāv ˌfiltər }

surface analysis [COMPUT SCI] A procedure in which a computer program writes a series of test characters onto a magnetic data storage medium and then reads them back to determine the location of any flaws in the medium. { 'sər·fəs əˌnal·ə·səs }

surface barrier [ELECTR] A potential barrier formed at a surface of a semiconductor by the trapping of carriers at the surface. { 'sər·fəs ˌbar·ē·ər }

surface-barrier diode [ELECTR] A diode utilizing thin-surface layers, formed either by deposition of metal films or by surface diffusion, to serve as a rectifying junction. { 'sər·fəs ˌbar·ē·ər 'dī,ōd }

surface-barrier transistor [ELECTR] A transistor in which the emitter and collector are formed on opposite sides of a semiconductor wafer, usually made of *n*-type germanium, by training two jets of electrolyte against its opposite surfaces to etch and then electroplate the surfaces. { 'sər·fəs ˌbar·ē·ər tran'zis·tər }

surface-charge transistor [ELECTR] An integrated-circuit transistor element based on controlling the transfer of stored electric charges along the surface of a semiconductor. { 'sər·fəs ˌchärj tran'zis·tər }

surface-controlled avalanche transistor [ELECTR] Transistor in which avalanche breakdown voltage is controlled by an external field applied through surface-insulating layers, and which permits operation at frequencies up to the 10-gigahertz range. { 'sər·fəs kənˌtrōld 'av·əˌlanch tranˌzis·tər }

surface leakage [ELEC] The passage of current over the surface of an insulator. { 'sər·fəs ˌlē·kij }

surface micromachining [ENG] A set of processes based upon deposition, patterning, and selective etching of thin films to form a free-standing microsensor on the surface of a silicon wafer. { ˌsər·fəs ˌmī·krə·mə'shēn·iŋ }

surface-mount technology [ELECTR] The technique of mounting electronic circuit components and their electrical connections on the surface of a printed board, rather than through holes. { 'sər·fəs ˌmaùnt tek'näl·ə·jē }

surface noise [ELECTR] The noise component in the electric output of a phonograph pickup due to irregularities in the contact surface of the groove. Also known as needle scratch. { 'sər·fəs ˌnòiz }

surface passivation [ELECTR] A method of coating the surface of a *p*-type wafer for a diffused junction transistor with an oxide compound, such as silicon oxide, to prevent penetration of the impurity in undesired regions. { 'sər·fəs ˌpas·ə'vā·shən }

surface-penetrating radar See ground-probing radar. { ˌsər·fəs ˌpen·əˌtrād·iŋ 'rāˌdär }

surface resistivity [ELEC] The electric resistance of the surface of an insulator, measured between the opposite sides of a square on the surface; the value in ohms is independent of the size of the square and the thickness of the surface film. { 'sər·fəs ˌrē,zis'tiv·əd·ē }

surface wave [COMMUN] See ground wave. [ELECTROMAG] A wave that can travel along an interface between two different mediums without radiation; the interface must be essentially straight in the direction of propagation; the commonest interface used is that between air and the surface of a circular wire. { 'sər·fəs ˌwāv }

surface-wave transmission line [ELECTROMAG] A single conductor transmission line energized in such a way that a surface wave is propagated along the line with satisfactorily low attenuation. { 'sər·fəs ˌwāv tranz'mish·ən ˌlīn }

surge [ELEC] A momentary large increase in the current or voltage in an electric circuit. [ENG] **1.** An upheaval of fluid in a processing system, frequently causing a carryover (puking) of liquid through the vapor lines. **2.** The peak system pressure. **3.** An unstable pressure buildup in a plastic extruder leading to variable throughput and waviness of the hollow plastic tube. { sərj }

surge admittance [ELEC] Reciprocal of surge impedance. { 'sərj ad,mit·əns }

surge arrester [ELEC] A protective device designed primarily for connection between a conductor of an electrical system and ground to limit the magnitude of transient overvoltages on equipment. Also known as arrester; lightning arrester. { 'sərj əˌres·tər }

surge current [ELEC] A short-duration, high-amperage electric current wave that may sweep through an electrical network, as a power transmission network, when some portion of it is strongly influenced by the electrical activity of a thunderstorm. { 'sərj ˌkə·rənt }

surge electrode current See fault electrode current. { 'sərj i'lek,trōd ˌkə·rənt }

surge generator [ELEC] A device for producing high-voltage pulses, usually by charging capacitors in parallel and discharging them in series. { 'sərj ˌjen·əˌrād·ər }

surge impedance See characteristic impedance. { 'sərj im,pēd·əns }

surge protector [ELEC] A device placed in an electrical circuit to prevent the passage of surges and spikes that could damage electronic equipment. { 'sərj prəˌtek·tər }

surge suppressor [ELECTR] A circuit that responds to the rate of change of a current or voltage to prevent a rise above a predetermined value; it may include resistors, capacitors, coils, gas tubes, and semiconducting disks. Also known as transient suppressor. { 'sərj səˌpres·ər }

surveillance radar [ENG] A search radar that includes significant means of associating

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detections of targets of interest (contacts) into tracks with additional sorting and labeling of data as the user system may require; normally more highly automated and equipped with data-processing computers than the simpler search radar. { sər'vā·ləns ˌrādˌdär }

survivable route |COMMUN| A communication cable system begun in 1960 in which the cable, main stations, amplifiers, and power feed stations are placed underground; it incorporates the latest techniques of protection against natural disasters and nuclear blasts, and avoids possible target areas. { sər'vī·və·bəl 'rüt }

susceptance |ELEC| The imaginary component of admittance. { sə'sep·təns }

susceptance standard |ELEC| Standard that introduces calibrated small values of shunt capacitance into 50-ohm coaxial transmission arrays. { sə'sep·təns ˌstan·dərd }

susceptibility *See* electric susceptibility. { sə ˌsep·tə'bil·əd·ē }

susceptometer |ENG| An instrument that measures paramagnetic, diamagnetic, or ferromagnetic susceptibility. { ˌsə'sep'täm·əd·ər }

suspension insulator |ELEC| A type of insulator used to support a conductor of an overhead transmission line, consisting of one or a string of insulating units suspended from a pole or tower, with the conductor attached to the end. { sə'spen·shən ˌin·səˌlād·ər }

sustained oscillation |CONT SYS| Continued oscillation due to insufficient attenuation in the feedback path. { sə'stānd ˌäs·ə'lā·shən }

SV *See* speaker verification.

swamping resistor |ELECTR| Resistor placed in the emitter lead of a transistor circuit to minimize the effects of temperature on the emitter-base junction resistance. { 'swämp·iŋ riˌzis·tər }

swap out |COMPUT SCI| The action of an operating system on a process wherein it blocks the process and writes the contents of its memory onto a disk in order to make available more memory for other current processes. { 'swäp ˌaůt }

swapping |COMPUT SCI| A procedure in which a running program is temporarily suspended and moved onto secondary storage, and primary storage is reassigned to a more pressing job, in order to maximize the efficient use of primary storage. { 'swäp·iŋ }

sweep |ELECTR| **1.** The steady movement of the electron beam across the screen of a cathode-ray tube, producing a steady bright line when no signal is present; the line is straight for a linear sweep and circular for a circular sweep. **2.** The steady change in the output frequency of a signal generator from one limit of its range to the other. { swēp }

sweep amplifier |ELECTR| An amplifier used with a cathode-ray tube, such as in a television receiver or cathode-ray oscilloscope, to amplify the sawtooth output voltage of the sweep oscillator, to shape the waveform for the deflection circuits of a television picture tube, or to provide balanced signals to the deflection plates. { 'swēp ˌam·pləˌfī·ər }

sweep circuit |ELECTR| The sweep oscillator, sweep amplifier, and any other stage used to produce the deflection voltage or current for a cathode-ray tube. Also known as scanning circuit. { 'swēp ˌsər·kət }

sweep generator |ELECTR| **1.** An electronic circuit that generates a voltage or current, usually recurrent, as a prescribed function of time; the resulting waveform is used as a time base to be applied to the deflection system of an electron-beam device, such as a cathode-ray tube. Also known as time-base generator; timing-axis oscillator. **2.** A test instrument that generates a radio-frequency voltage whose frequency varies back and forth through a given frequency range at a rapid constant rate; used to produce an input signal for circuits or devices whose frequency response is to be observed on an oscilloscope. Also known as sweep oscillator. { 'swēp ˌjen·əˌrād·ər }

sweeping receivers |ELECTR| Automatically and continuously tuned receivers designed to stop and lock on when a signal is found, or to continually plot band occupancy. { 'swēp·iŋ riˌsē·vərz }

sweep jamming |ELECTR| Jamming with a relatively narrow-band continuous signal being varied in frequency (swept) so that pulselike signals are produced in a radar as the jamming passes through its passband. { 'swēp ˌjam·iŋ }

sweep oscillator *See* sweep generator. { 'swēp ˌäs·əˌlad·ər }

sweep rate |ELECTR| The number of times a radar radiation pattern rotates during 1 minute; sometimes expressed as the duration of one complete rotation in seconds. { 'swēp ˌrāt }

sweep test |ELECTR| Test given coaxial cable with an oscilloscope to check attenuation. { 'swēp ˌtest }

sweep-through jammer |ELECTR| A jamming transmitter which is swept through a radio-frequency band in short steps to jam each frequency briefly. { 'swēpˌthrü 'jam·ər }

sweep voltage |ELECTR| Periodically varying voltage applied to the deflection plates of a cathode-ray tube to give a beam displacement that is a function of time, frequency, or other data base. { 'swēp ˌvōl·tij }

swept-frequency analyzer |ELECTR| A spectrum analyzer in which a ramp generator simultaneously moves a spot horizontally across an electronic display and increases the frequency of a local oscillator; and any signal at the input, at a frequency such that the difference between its frequency and the local oscillator is within the bandwidth of an intermediate-frequency filter, vertically deflects the spot on the display by an amount proportional to the amplitude of the input signal being analyzed. { ˌswept ˌfrē·kwən·sē 'an·əˌlīz·ər }

swing |ELEC| Variation in frequency or amplitude of an electrical quantity. { swiŋ }

swinging choke |ELEC| An iron-core choke having a core that can be operated almost at magnetic saturation; the inductance is then a

maximum for small currents, and swings to a lower value as current increases. Also known as swinging reactor. { 'swiŋ·iŋ 'chōk }

swinging reactor *See* swinging choke. { 'swiŋ·iŋ rē'ak·tər }

switch [COMPUT SCI] **1.** A hardware or programmed device for indicating that one of several alternative states or conditions have been chosen, or to interchange or exchange two data items. **2.** A symbol used to indicate a branch point, or a set of instructions to condition a branch. [ELEC] A manual or mechanically actuated device for making, breaking, or changing the connections in an electric circuit. Also known as electric switch. Symbolized SW. { swich }

switchboard [COMMUN] A manually or automatically operated apparatus at a telephone exchange, on which the various circuits from subscribers and other exchanges are terminated to enable communication either between two subscribers on the same exchange, or between subscribers on different exchanges. Also known as telephone switchboard. [ELEC] A single large panel or assembly of panels on which are mounted switches, circuit breakers, meters, fuses, and terminals essential to the operation of electric equipment. Also known as electric switchboard. { 'swich,bȯrd }

switched capacitor [ELECTR] An integrated circuit element, consisting of a capacitor with two metal oxide semiconductor (MOS) switches, whose function is approximately equivalent to that of a resistor. { 'swicht kə'pas·əd·ər }

switched-capacitor filter [ELECTR] An integrated-circuit filter in which a resistor is simulated by a combination of a capacitor and metal oxide semiconductor switches that are turned on and off periodically at a high frequency. Also known as switched-C filter. { ˌswicht kə'pas·əd·ər ˌfil·tər }

switched-C filter *See* switched-capacitor filter. { ˌswicht 'sē ˌfil·tər }

switched circuit [COMMUN] A communications circuit or channel that can be turned on and off and made to serve various users. { 'swicht 'sər·kət }

switched line [COMMUN] A communications line, such as a dial telephone line, whose path can vary each time the line is used. { 'swicht 'līn }

switched-message network [COMPUT SCI] A data transmission system in which a user can communicate with any other user of the network. { 'swicht ˌmes·ij 'net,wərk }

switched network [COMMUN] A communications network, such as the dial telephone network, in which any station may be connected with any other through the use of switching and control devices. { 'swicht 'net,wərk }

switch function [ELECTR] A circuit having a fixed number of inputs and outputs designed such that the output information is a function of the input information, each expressed in a certain code or signal configuration or pattern. { 'swich ˌfəŋk·shən }

switchgear [ELEC] The aggregate of switching devices for a power or transforming station, or for electric motor control. { 'swich,gir }

switch hook [ELECTR] A switch on a telephone set that closes the circuit when the receiver is removed from the hook or cradle. { 'swich ˌhůk }

switching [ELEC] Making, breaking, or changing the connections in an electrical circuit. { 'swich·iŋ }

switching center [COMMUN] The equipment in a relay station for automatically or semiautomatically relaying communications traffic. { 'swich·iŋ ˌsen·tər }

switching circuit [ELEC] A constituent electric circuit of a switching or digital processing system which receives, stores, or manipulates information in coded form to accomplish the specified objectives of the system. { 'swich·iŋ ˌsər·kət }

switching device [ENG] An electrical or mechanical device or mechanism, which can bring another device or circuit into an operating or nonoperating state. Also known as switching mechanism. { 'swich·iŋ di,vīs }

switching diode [ELECTR] A crystal diode that provides essentially the same function as a switch; below a specified applied voltage it has high resistance corresponding to an open switch, while above that voltage it suddenly changes to the low resistance of a closed switch. { 'swich·iŋ ˌdī,ōd }

switching gate [ELECTR] An electronic circuit in which an output having constant amplitude is registered if a particular combination of input signals exists; examples are the OR, AND, NOT, and INHIBIT circuits. Also known as logical gate. { 'swich·iŋ ˌgāt }

switching key *See* key. { 'swich·iŋ ˌkē }

switching mechanism *See* switching device. { 'swich·iŋ ˌmek·ə,niz·əm }

switching node [COMMUN] A location in a communications network where messages or lines are routed. { 'swich·iŋ ˌnōd }

switching pad [ELECTR] Transmission-loss pad automatically cut in and out of a toll circuit for different desired operating conditions. { 'swich·iŋ ˌpad }

switching substation [ELEC] An electric power substation whose equipment is mainly for connections and interconnections, and does not include transformers. { 'swich·iŋ 'səb ˌstā·shən }

switching surface [CONT SYS] In feedback control systems employing bang-bang control laws, the surface in state space which separates a region of maximum control effort from one of minimum control effort. { 'swich·iŋ ˌsər·fəs }

switching system [COMMUN] An assembly of switching and control devices provided so that any station in a communications system may be connected as desired with any other station. { 'swich·iŋ ˌsis·təm }

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switching theory [ELECTR] The theory of circuits made up of ideal digital devices; included are the theory of circuits and networks for telephone switching, digital computing, digital control, and data processing. { 'swich·iŋ ˌthē·ə·rē }

switching-through relay [ELEC] Control relay of a line-finder selector, connector, or other stepping switch, which extends the loop of a calling telephone through to the succeeding switch in a switch train. { 'swich·iŋ ¦thrü ˈrēˌlā }

switching time [ELECTR] **1.** The time interval between the reference time and the last instant at which the instantaneous voltage response of a magnetic cell reaches a stated fraction of its peak value. **2.** The time interval between the reference time and the first instant at which the instantaneous integrated voltage response of a magnetic cell reaches a stated fraction of its peak value. { 'swich·iŋ ˌtīm }

switching transistor [ELECTR] A transistor designed for on/off switching operation. { 'swich·iŋ tranˈzis·tər }

switching trunk [ELEC] Trunk from a long-distance office to a local exchange office used for completing a long-distance call. { 'swich·iŋ ˌtrəŋk }

switching tube [ELECTR] A gas tube used for switching high-power radio-frequency energy in the antenna circuits of radar and other pulsed radio-frequency systems; examples are those used in some radar modulators (pulsers) and those used for receiver protection in radar duplexers. { 'swich·iŋ ˌtüb }

switch jack [ELEC] Any of the devices that provide terminals for the control circuits of the switch. { 'swich ˌjak }

switch-over travel [ELEC] That movement of a switch-operating lever which takes place after the switch has been actuated either to close or open its contacts. { 'swich ˌō·vər 'trav·əl }

switch pretravel [ELEC] That movement of a switch-operating level that takes place before the switch is actuated either to close or to open its contacts. { 'swich 'prēˌtrav·əl }

switch register [COMPUT SCI] A manual switch on the control panel by means of which a bit may be entered in a processor register. { 'swich ˌrej·ə·stər }

switch room [COMMUN] Part of a central office building that houses switching mechanisms and associated apparatus. { 'swich ˌrüm }

switch selectable addressing [COMPUT SCI] The setting of DIP switches in a peripheral or terminal device to determine the address that identifies the device to the computer system. { 'swich si ¦lek·tə·bəl 'adˌres·iŋ }

switch train [ELEC] A series of switches in tandem. { 'swich ˌtrān }

syllabic compandor [ELECTR] A compandor in which the effective gain variations are made at speeds allowing response to the syllables of speech but not to individual cycles of the signal wave. { si'lab·ik kəm'pan·dər }

symbolic address [COMPUT SCI] In coding, a programmer-defined symbol that represents the location of a particular datum item, instruction, or routine. Also known as symbolic number. { sim'bäl·ik 'adˌres }

symbolic algebraic manipulation language [COMPUT SCI] An algebraic manipulation language which admits the most general species of mathematical expressions, usually representing them as general tree structures, but which lacks certain special algorithms. { sim'bäl·ik ˌal·jə'brā·ik mə ˌnip·yə'lā·shən ˌlaŋ·gwij }

symbolic assembly language listing [COMPUT SCI] A list that may be produced by a computer during the compilation of a program showing the source language statements together with the corresponding machine language instructions generated by them. { sim'bäl·ik ə'sem·blē ˌlaŋ·gwij ˌlist·iŋ }

symbolic assembly system [COMPUT SCI] A system for forming programs that can be run on a computer, consisting of an assembly language and an assembler. { sim'bäl·ik ə'sem·blē ˌsis·təm }

symbolic coding [COMPUT SCI] Instruction written in an assembly language, using symbols for operations and addresses. Also known as symbolic programming. { sim'bäl·ik 'kōd·iŋ }

symbolic computation system *See* symbolic system. { sim¦bäl·ik kəmˈpyü'tā·shən ˌsis·təm }

symbolic computing [COMPUT SCI] The development and use of symbolic systems. { sim¦bäl·ik kəm'pyüd·iŋ }

symbolic debugging [COMPUT SCI] A method of correcting known errors in a computer program written in a source language, in which certain statements are compiled together with the program. { sim'bäl·ik dē'bəg·iŋ }

symbolic language [COMPUT SCI] A language which expresses addresses and operation codes of instructions in symbols convenient to humans rather than in machine language. { sim'bäl·ik 'laŋ·gwij }

symbolic mathematical computation [COMPUT SCI] The manipulation of symbols, representing variables, functions, and other mathematical objects, and combinations of these symbols, representing formulas, equations, and expressions, according to mathematical rules, for example, the rules of algebra or calculus. { sim'bäl·ik ¦math·ə ¦mad·ə·kəl ˌkäm·pyə'tā·shən }

symbolic name [COMPUT SCI] A name given to some entity that is actually something else; for example, the name of a table in a computer program actually represents the physical storage locations used to hold the data stored in that table, as well as the values stored in those locations. { sim'bäl·ik 'nām }

symbolic number *See* symbolic address. { sim 'bäl·ik 'nəm·bər }

symbolic programming *See* symbolic coding. { sim'bäl·ik 'prōˌgram·iŋ }

symbolic system [COMPUT SCI] A computer program that performs computations with constants and variables according to the rules of algebra, calculus, and other branches of mathematics. Also known as algebraic computation system;

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computer algebra system; symbolic computation system. { sim¦bäl·ik 'sis·təm }

symbol input [COMPUT SCI] Includes all contextual symbols that may appear in a source text. { 'sim·bəl 'in,pùt }

symbol sequence [COMPUT SCI] A sequence of contextual symbols not interrupted by space. { 'sim·bəl 'sē·kwəns }

symbol table [COMPUT SCI] A mapping for a set of symbols to another set of symbols or numbers. { 'sim·bəl 'tā·bəl }

symmetrical architecture [COMPUT SCI] A type of computer design that allows any type of data to be used with any type of instruction. { si'me·trə·kəl 'ärk·ə,tek·chər }

symmetrical avalanche rectifier [ELECTR] Avalanche rectifier that can be triggered in either direction, after which it has a low impedance in the triggered direction. { sə'me·trə·kəl 'av·ə ,lanch ,rek·tə,fī·ər }

symmetrical band-pass filter [ELECTR] A band-pass filter whose attenuation as a function of frequency is symmetrical about a frequency at the center of the pass band. { sə'me·trə·kəl 'band ,pas ,fil·tər }

symmetrical band-reject filter [ELECTR] A band-rejection filter whose attenuation as a function of frequency is symmetrical about a frequency at the center of the rejection band. { sə'me·trə·kəl 'band ri,jekt ,fil·tər }

symmetrical clipper [ELECTR] A clipper in which the upper and lower limits on the amplitude of the output signal are positive and negative values of equal magnitude. { sə'me·trə·kəl 'klip·ər }

symmetrical deflection [ELECTR] A type of electrostatic deflection in which voltages that are equal in magnitude and opposite in sign are applied to the two deflector plates. { sə'me·trə·kəl di'flek·shən }

symmetrical H attenuator [ELECTR] An H attenuator in which the impedance near the input terminals equals the corresponding impedance near the output terminals. { sə'me·trə·kəl 'āch ə,ten·yə'wād·ər }

symmetrical inductive diaphragm [ELECTROMAG] A waveguide diaphragm which consists of two plates that leave a space at the center of the waveguide, and which introduces an inductance in the waveguide. { sə'me·trə·kəl in'dək·tiv 'dī·ə,fram }

symmetrical O attenuator [ELECTR] An O attenuator in which the impedance near the input terminals equals the corresponding impedance near the output terminals. { sə'me·trə·kəl 'ō ə ,ten·yə,wād·ər }

symmetrical pi attenuator [ELECTR] A pi attenuator in which the impedance near the input terminals equals the corresponding impedance near the output terminals. { sə'me·trə·kəl 'pī ə ,ten·yə,wād·ər }

symmetrical T attenuator [ELECTR] A T attenuator in which the impedance near the input terminals equals the corresponding impedance near the output terminals. { sə'me·trə·kəl 'tē ə ,ten·yə,wād·ər }

symmetrical transducer [ELECTR] A transducer is symmetrical with respect to a specified pair of terminations when the interchange of that pair of terminations will not affect the transmission. { sə'me·trə·kəl tranz'dü·sər }

symmetric list [COMPUT SCI] A list with sequencing pointers to previous as well as subsequent items. { sə'me·trik 'list }

sync *See* synchronization. { siŋk }

sync generator *See* synchronizing generator. { 'siŋk ,jen·ə,rād·ər }

synchro [ELEC] Any of several devices which are used for transmitting and receiving angular position or angular motion over wires, such as a synchro transmitter or synchro receiver. Also known as mag-slip (British usage); self-synchronous device; self-synchronous repeater; selsyn. { 'siŋ·krō }

synchro control transformer [ELEC] A transformer having its secondary winding on a rotor; when its three input leads are excited by angle-defining voltages, the two output leads deliver an alternating-current voltage that is proportional to the sine of the difference between the electrical input angle and the mechanical rotor angle. { 'siŋ·krō kən¦trōl tranz,fór·mər }

synchro control transmitter [ELEC] A high-accuracy synchro transmitter, having high-impedance windings. { 'siŋ·krō kən¦trōl tranz,mid·ər }

synchro differential motor [ELEC] Motor which is electrically similar to the synchro differential generator except that a damping device is added to prevent oscillations; both its rotor and stator are connected to synchro generators, and its function is to indicate the sum or difference between the two signals transmitted by the generators. { 'siŋ·krō ,dif·ə'ren·chəl ,mōd·ər }

synchro differential receiver [ELEC] A synchro receiver that subtracts one electrical angle from another and delivers the difference as a mechanical angle. Also known as differential synchro. { 'siŋ·krō ,dif·ə'ren·chəl ri'sē·vər }

synchro differential transmitter [ELEC] A synchro transmitter that adds a mechanical angle to an electrical angle and delivers the sum as an electrical angle. Also known as differential synchro. { 'siŋ·krō ,dif·ə'ren·chəl tranz'mid·ər }

synchro generator *See* synchro transmitter. { 'siŋ·krō 'jen·ə,rād·ər }

synchro motor *See* synchro receiver. { 'siŋ·krō ,mōd·ər }

synchronism [ELEC] Of a synchronous motor, the condition under which the motor runs at a speed which is directly related to the frequency of the power applied to the motor and is not dependent upon variables. { 'siŋ·krə,niz·əm }

synchronization [ENG] The maintenance of one operation in step with another, as in keeping the electron beam of a television picture tube in step with the electron beam of the television camera tube at the transmitter. Also known as sync. { ,siŋ·krə·nə'zā·shən }

synchronized blocking oscillator [ELECTR] A blocking oscillator which is synchronized with pulses occurring at a rate slightly faster than its

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own natural frequency. { 'siŋ·krə,nīzd 'blāk·iŋ 'äs·ə,lād·ər }

synchronizer [COMPUT SCI] A computer storage device used to compensate for a difference in rate of flow of information or time of occurrence of events when transmitting information from one device to another. [ELECTR] The component of a radar set which generates the timing voltage for the complete set. { 'siŋ·krə,nīz·ər }

synchronizing generator [ELECTR] An electronic generator that supplies synchronizing pulses to television studio and transmitter equipment. Also known as sync generator; sync-signal generator. { 'sin·krə,nīz·iŋ 'jen·ə,rād·ər }

synchronizing pulse [COMMUN] In pulse modulation, a pulse which is transmitted to synchronize the transmitter and the receiver, it is usually distinguished from signal-carrying pulses by some special characteristic. { 'sin·krə,nīz·iŋ ,pəls }

synchronizing reactor [ELEC] Current-limiting reactor for connecting momentarily across the open contacts of a circuit-interrupting device for synchronizing purposes. { 'sin·krə,nīz·iŋ rē'ak·tər }

synchronizing relay [ELEC] Relay which functions when two alternating-current sources are in agreement within predetermined limits of phase angle and frequency. { 'sin·krə,nīz·iŋ 'rē,lā }

synchronizing signal *See* sync signal. { 'sin·krə ,nīz·iŋ ,sig·nəl }

synchronous [ENG] In step or in phase, as applied to two or more circuits, devices, or machines. { 'siŋ·krə·nəs }

synchronous booster converter [ELEC] Synchronous converter having an alternating-current generator mounted on the same shaft and connected in series with it to adjust the voltage at the commutator of the converter. { 'siŋ·krə·nəs 'büs·tər kən'vərd·ər }

synchronous capacitor [ELEC] A synchronous motor running without mechanical load and drawing a large leading current, like a capacitor; used to improve the power factor and voltage regulation of an alternating-current power system. { 'siŋ·krə·nəs kə'pas·əd·ər }

synchronous clamp circuit *See* keyed clamp circuit. { 'siŋ·krə·nəs 'klamp ,sər·kət }

synchronous communications [COMPUT SCI] The high-speed transmission and reception of long groups of characters at a time, requiring synchronization of the sending and receiving devices. { 'siŋ·krə·nəs kə,myü·nə'kā·shənz }

synchronous computer [COMPUT SCI] A digital computer designed to operate in sequential elementary steps, each step requiring a constant amount of time to complete, and being initiated by a timing pulse from a uniformly running clock. { 'siŋ·krə·nəs kəm'pyüd·ər }

synchronous converter [ELEC] A converter in which motor and generator windings are combined on one armature and excited by one magnetic field; normally used to change alternating to direct current. Also known as converter; electric converter. { 'siŋ·krə·nəs kən'vərd·ər }

synchronous data-link control [COMMUN] A bit-oriented protocol for managing the flow of information in a data-communications system, in full, half-duplex, or multipoint modes, that uses an error-check algorithm. { 'siŋ·krə·nəs 'dad·ə ,liŋk kən,trōl }

synchronous data transmission [COMMUN] Data transmission in which a clock defines transmission times for data; since start and stop bits for each character are not needed, more of the transmission bandwidth is available for message bits. { 'siŋ·krə·nəs 'dad·ə tranz ,mish·ən }

synchronous demodulator *See* synchronous detector. { 'siŋ·krə·nəs dē'mäj·ə,lād·ər }

synchronous detection [ELECTR] The act of mixing two nearly identical frequencies, such as the oscillator reference signal and the signal received in a coherent radar, producing a voltage output sinusoidally related to the phase difference of the two. { 'siŋ·krə·nəs di,tek·shən }

synchronous detector [ELECTR] **1.** A detector that inserts a missing carrier signal in exact synchronism with the original carrier at the transmitter; when the input to the detector consists of two suppressed-carrier signals in phase quadrature, as in the chrominance signal of an analog color television receiver, the phase of the reinserted carrier can be adjusted to recover either one of the signals. Also known as synchronous demodulator. **2.** *See* cross-correlator. { 'siŋ·krə·nəs di'tek·tər }

synchronous dynamic random access memory [COMPUT SCI] High-speed memory that is controlled by the system clock and can run at bus speeds up to 100 megahertz. Abbreviated SDRAM. { 'siŋ·krə·nəs dī,nam·ik ,ran·dəm 'ak ,ses ,mem·rē }

synchronous gate [ELECTR] A time gate in which the output intervals are synchronized with an incoming signal. { 'siŋ·krə·nəs 'gāt }

synchronous generator [ELEC] A machine that generates an alternating voltage when its armature or field is rotated by a motor, an engine, or other means. The output frequency is exactly proportional to the speed at which the generator is driven. { 'siŋ·krə·nəs 'jen·ə,rād·ər }

synchronous inverter *See* dynamotor. { 'siŋ·krə·nəs in'vərd·ər }

synchronous machine [ELEC] An alternating-current machine whose average speed is proportional to the frequency of the applied or generated voltage. { 'siŋ·krə·nəs mə'shēn }

synchronous motor [ELEC] A synchronous machine that transforms alternating-current electric power into mechanical power, using field magnets excited with direct current. { 'siŋ·krə·nəs 'mōd·ər }

synchronous operation [ELECTR] **1.** An operation that takes place regularly or predictably with respect to the occurrence of a particular event in another process. **2.** In particular, an operation whose timing is controlled by pulses generated by an electronic clock. { 'siŋ·krə·nəs ,äp·ə'rā·shən }

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synchronous phase modifier [ELEC] A synchronous motor that runs without mechanical load, and is provided with means for varying its power factor to simulate a capacitive or inductive reactor; used in voltage regulation of alternating-current power systems. { 'siŋ·krə·nəs 'fāz ˌshif·tər }

synchronous rectifier [ELECTR] A rectifier in which contacts are opened and closed at correct instants of time for rectification by a synchronous vibrator or by a commutator driven by a synchronous motor. { 'siŋ·krə·nəs 'rek·təˌfī·ər }

synchronous switch [ELECTR] A thyratron circuit used to control the operation of ignitrons in such applications as resistance welding. { 'siŋ·krə·nəs 'swich }

synchronous system [COMMUN] A telecommunication system in which transmitting and receiving apparatus operate continuously at substantially the same rate, and correction devices are used, if necessary, to maintain them in a fixed time relationship. { 'siŋ·krə·nəs 'sis·təm }

synchronous time-division multiplexing [COMMUN] A data transmission technique in which several users make use of a single channel by means of a system in which time slots are allotted on a fixed basis, usually in round-robin fashion. Abbreviated STDM. { 'siŋ·krə·nəs 'tīm dəˌvizh·ən 'məl·təˌpleks·iŋ }

synchronous working [COMPUT SCI] The mode of operation of a synchronous computer, in which the starting of each operation is clock-controlled. { 'siŋ·krə·nəs 'wərk·iŋ }

synchro receiver [ELEC] A synchro that provides an angular position related to the applied angle-defining voltages; when two of its input leads are excited by an alternating-current voltage and the other three input leads are excited by the angle-defining voltages, the rotor rotates to the corresponding angular position; the torque of rotation is proportional to the sine of the difference between the mechanical and electrical angles. Also known as receiver synchro; selsyn motor; selsyn receiver; synchro motor. { 'siŋ·krō ri'sē·vər }

synchro resolver *See* resolver. { 'siŋ·krō ri'zäl·vər }

synchroscope [ELECTR] A cathode-ray oscilloscope designed to show a short-duration pulse by using a fast sweep that is synchronized with the pulse signal to be observed. { 'siŋ·krəˌskōp }

synchro system [ELEC] An electric system for transmitting angular position or motion; in the simplest form it consists of a synchro transmitter connected by wires to a synchro receiver; more complex systems include synchro control transformers and synchro differential transmitters and receivers. Also known as selsyn system. { 'siŋ·krō ˌsis·təm }

synchro transmitter [ELEC] A synchro that provides voltages related to the angular position of its rotor; when its two input leads are excited by an alternating-current voltage, the magnitudes and polarities of the voltages at the three output leads define the rotor position. Also known as selsyn generator; selsyn transmitter; synchro generator; transmitter; transmitter synchro. { 'siŋ·krō tranz'mid·ər }

sync separator [ELECTR] A circuit that separates synchronizing pulses from the video signal in an analog television receiver. { 'siŋkˌsep·əˌrād·ər }

sync signal [COMMUN] A signal transmitted after each line and field to synchronize the scanning process in a video system. Also known as synchronizing signal. { 'siŋkˌsig·nəl }

sync-signal generator *See* synchronizing generator. { 'siŋk ˌsig·nəl 'jen·əˌrād·ər }

syntactic analysis [COMPUT SCI] The problem of associating a given string of symbols through a grammar to a programming language, so that the question of whether the string belongs to the language may be answered. { sin'tak·tik ə'nal·ə·səs }

syntactic error *See* syntax error. { sin'tak·tik 'er·ər }

syntactic extension [COMPUT SCI] An extension mechanism which creates new notations for existing or user-defined mechanisms in an extensible language. { sin'tak·tik ik'sten·shən }

syntactic model *See* linguistic model. { sin 'tak·tik 'mäd·əl }

syntactic semigroup [SYS ENG] For a sequential machine, the set of all transformations performed by all input sequences. { sin'tak·tik 'sem·iˌgrüp }

syntax [COMPUT SCI] The set of rules needed to construct valid expressions or sentences in a language. { 'sinˌtaks }

syntax checker *See* syntax scanner. { 'sinˌtaks ˌchek·ər }

syntax diagram [COMPUT SCI] A pictorial diagram showing the rules for forming an instruction in a computer programming language, and how the components of the statement are related. { 'sin ˌtaks 'dī·əˌgram }

syntax-directed compiler [COMPUT SCI] A general-purpose compiler that can service a family of languages by providing the syntactic rules for language analysis in the form of data, typically in tabular form, rather than using a specific parsing algorithm for a particular language. Also known as syntax-oriented compiler. { 'sinˌtaks dəˌrek·təd kəm'pīl·ər }

syntax error [COMPUT SCI] An error in the format of a statement in a computer program that violates the rules of the programming language employed. Also known as syntactic error. { 'sin ˌtaks ˌer·ər }

syntax-oriented compiler *See* syntax-directed compiler. { 'sinˌtaks ˌȯr·ē,ent·əd kəm'pīl·ər }

syntax scanner [COMPUT SCI] A subprogram of a compiler or interpreter that checks the source program for syntax errors, and reports any such errors by printing the erroneous statement together with a diagnostic message. Also known as syntax checker. { 'sinˌtaks ˌskan·ər }

synthesis *See* system design. { 'sin·thə·səs }

synthesizer [ELECTR] **1.** An electronic instrument which combines simple elements to generate more complex entities; examples are

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frequency synthesizer and sound synthesizer. 2. Circuitry generating multiple frequencies at very low power that are used in radar transmissions, particularly in frequency-agile radars. { 'sin·thə,sīz·ər }

synthetic address *See* generated address. { sin'thed·ik 'ad,res }

synthetic aperture [ENG] A method of increasing the ability of an imaging system, such as radar or acoustical holography, to resolve small details of an object, in which a receiver of large size (or aperture) is in effect synthesized by the motion of a smaller receiver and the proper correlation of the detected signals. { sin'thed·ik 'ap·ə·chər }

synthetic-aperture radar [ENG] A radar system in which an aircraft moving along a very straight path emits microwave pulses continuously at a frequency constant enough to be coherent for a period during which the aircraft may have traveled about 1 kilometer; all echoes returned during this period can then be processed as if a single antenna as long as the flight path had been used. { sin'thed·ik ¦ap·ə·chər 'rā,där }

synthetic language [COMPUT SCI] A pseudocode or symbolic language; fabricated language. { sin'thed·ik 'laŋ·gwij }

syntony [ELEC] Condition in which two oscillating circuits have the same resonant frequency. { 'sin·tə·nē }

sysgen *See* system generation. { 'sis,jen }

SYSIN [COMPUT SCI] The principal input stream of an operating system. Derived from system input. { 'sis,in }

system [ELECTR] A combination of two or more sets generally physically separated when in operation, and such other assemblies, subassemblies, and parts necessary to perform an operational function or functions. [ENG] An assemblage of interrelated components designed to perform prescribed functions. { 'sis·təm }

system analysis [CONT SYS] The use of mathematics to determine how a set of interconnected components whose individual characteristics are known will behave in response to a given input or set of inputs. { 'sis·təm ə,nal·ə·səs }

systematic analog network testing approach [ELECTR] An on-line minicomputer-based system with an integrated data-based and optimal human intervention, which provides computer printouts used in automatic testing of electronic systems; aimed at maximizing cost effectivity. Abbreviated SANTA. { ,sis·tə'mad·ik 'an·ə,läg 'net,wərk ,test·iŋ ə,prōch }

systematic distortion [ELEC] Periodic or constant distortion, such as bias or characteristic distortion; the direct opposite of fortuitous distortion. { ,sis·tə'mad·ik di'stór·shən }

systematic error-checking code [COMPUT SCI] A type of self-checking code in which a valid character consists of the minimum number of digits needed to identify the character and distinguish it from any other valid character, and a set of check digits which maintain a minimum specified signal distance between any two valid characters. Also known as group code. { ,sis·tə'mad·ik'er·ər ¦chek·iŋ ,kōd }

system bandwidth [CONT SYS] The difference between the frequencies at which the gain of a system is $\sqrt{2}/2$ (that is, 0.707) times its peak value. { 'sis·təm 'band,width }

system calendar [COMPUT SCI] A register in a computer system that holds the date and year and provides them in response to supervisor calls to the operating system. { 'sis·təm 'kal·ən·dər }

system call *See* supervisor call. { 'sis·təm ,kȯl }

system catalog [COMPUT SCI] An index of all files controlled by the operating system of a large computer. { 'sis·təm 'kad·əl,äg }

system chart [COMPUT SCI] A flowchart that emphasizes the component operations which make up a system. { 'sis·təm ,chärt }

system check [COMPUT SCI] A check on the overall performance of the system, usually not made by built-in computer check circuits; for example, control total, hash totals, and record counts. { 'sis·təm ,chek }

system clock [COMPUT SCI] A circuit that emits regularly timed pulses that are used to synchronize the operations of all the circuits of a computer. { 'sis·təm 'kläk }

system clock reference [COMMUN] A time stamp in the program stream from which decoder timing is derived. Abbreviated SCR. { 'sis·təm ¦kläk 'ref·rəns }

system command [COMPUT SCI] A special instruction to a computer system to carry out a particular processing function, such as allowing a user to gain access to the system, running a program, activating a translator, or issuing a status report. { 'sis·təm kə,mand }

system design [COMPUT SCI] Determination in detail of the exact operational requirements of a system, resolution of these into file structures and input/output formats, and relation of each to management tasks and information requirements. [CONT SYS] A technique of constructing a system that performs in a specified manner, making use of available components. Also known as synthesis. { 'sis·təm di,zīn }

system designer [COMPUT SCI] A person who prepares final system documentation, analyzes findings, and synthesizes new system design. { 'sis·təm di,zīn·ər }

system documentation [COMPUT SCI] Detailed information, in either written or computerized form, about a computer system, including its architecture, design, data flow, and programming logic. { 'sis·təm ,däk·yə·mən'tā·shən }

system evaluation [COMPUT SCI] A periodic evaluation of the system to assess its status in terms of original or current expectations and to chart its future direction. { 'sis·təm i,val·yə'wā·shən }

system flowchart *See* data flow diagram. { 'sis·təm 'flō,chärt }

system generation [COMPUT SCI] A process that creates a particular and uniquely specified operating system; it combines user-specified options and parameters with manufacturer-supplied general-purpose or nonspecialized

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program subsections to produce an operating system (or other complex software) of the desired form and capacity. Abbreviated sysgen. { 'sis·təm ˌjen·ə'rā·shən }

system header [COMMUN] A data structure that carries information summarizing the system characteristics of the digital television multiplexed bit stream. { 'sis·təm ˌhed·ər }

system improvement time [COMPUT SCI] The machine downtime needed for the installation and testing of new components, large or small, and machine downtime necessary for modification of existing components; this includes all programming tests following the above actions to prove the machine is operating properly. { 'sis·təm im'prüv·mənt ˌtīm }

system input *See* SYSIN. { 'sis·təm 'inˌpůt }

system integration [COMPUT SCI] The procedures involved in combining separately developed modules of components so that they work together as a complete computer system. { 'sis·təm ˌin·tə'grā·shən }

system-level timer [COMPUT SCI] A hardware device that is set by the operating system to interrupt it after a specified time interval, either to set deadlines for events or to remind the operating system to take some action. { 'sis·təm ˌlev·əl 'tīm·ər }

system library [COMPUT SCI] An organized collection of computer programs that is maintained on-line with a computer system by being held on a secondary storage device and is managed by the operating system. { 'sis·təm 'līˌbrer·ē }

system loader [COMPUT SCI] A computer program that loads all the other programs, including the operating system, into a computer's main storage. { 'sis·təm ˌlōd·ər }

system master tapes [COMPUT SCI] Magnetic tapes containing programmed instructions necessary for preparing a computer prior to running programs. { 'sis·təm 'mas·tər 'tāps }

system operation [COMPUT SCI] The administration and operation of an automatic data-processing equipment-oriented system, including staffing, scheduling, equipment and service contract administration, equipment utilization practices, and time-sharing. { 'sis·təm ˌäp·ə'rā·shən }

system optimization *See* optimization. { 'sis·təm ˌäp·tə·mə'zā·shən }

system response *See* response. { 'sis·təm ri'späns }

systems management [SYS ENG] The management of information technology systems in an organization or commercial enterprise, including all activities involved in configuring, installing, maintaining, and updating these systems. { 'sis·təmz 'man·ij·mənt }

system software [COMPUT SCI] Computer software involved with data and program management, including operating systems, control programs, and database management systems. { 'sis·təm 'sôftˌwer }

systems programming [COMPUT SCI] The development and production of programs that have to do with translation, loading, supervision, maintenance, control, and running of computers and computer programs. { 'sis·təmz ˌprō,gram·iŋ }

systems specification *See* systems definition. { 'sis·təmz ˌspes·ə·fə,kā·shən }

systems test [COMPUT SCI] The running of whole computer system against test data; a complete simulation of the actual running system for purposes of testing the adequacy of the system. { 'sis·təmz ˌtest }

system study [COMPUT SCI] A detailed study to determine whether, to what extent, and how automatic data-processing equipment should be used; it usually includes an analysis of the existing system and the design of the new system, including the development of system specifications which provide a basis for the selection of equipment. { 'sis·təm ˌstəd·ē }

system supervisor [COMPUT SCI] A control program which ensures an efficient transition in running program after program and accomplishing setups and control functions. { 'sis·təm 'sü·pərˌvīz·ər }

system target decoder [COMMUN] A hypothetical reference model of a decoding process used to describe the semantics of the digital television multiplexed bit stream. Abbreviated STD. { 'sis·təm ˌtär·gət dē'kōd·ər }

system unit [COMPUT SCI] **1.** An individual card, section of tape, or the like, which is manipulated during operation of the system; class 1 systems have one unit per document; class 2 systems have one unit per vocabulary term or concept. **2.** *See* case. { 'sis·təm ˌyü·nət }

systolic array [COMPUT SCI] An array of processing elements of cells connected to a memory which pulses data through the array in such a way that each data item can be used effectively at each cell it passes while being pumped from cell to cell along the array. { si'stäl·ik ə'rā }

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TΩ *See* teraohm.

table [COMPUT SCI] A set of contiguous, related items, each uniquely identified either by its relative position in the set or by some label. { 'tā·bəl }

table-driven compiler [COMPUT SCI] A compiler in which the source language is described by a set of syntax rules. { 'tā·bəl ¦driv·ən kəm'pī·lər }

table-driven program [COMPUT SCI] A computer program that relies on tables stored outside of the program in the computer's memory to furnish data. { 'tā·bəl ¦driv·ən 'prō,gram }

table look-up [COMPUT SCI] A procedure for calculating the location of an item in a table by means of an algorithm, rather than by conducting a search for the item. { 'tā·bəl 'lůk ,əp }

table look-up device [ELECTR] A logic circuit in which the input signals are grouped as address digits to a memory device, and, in response to any particular combination of inputs, the memory device location that is addressed becomes the output. { 'tā·bəl ¦lůk ,əp di,vīs }

table management program [COMPUT SCI] A computer program that handles the creation and maintenance of tables and access to data stored in them. { 'tā·bəl ¦man·ij·mənt ,prō,gram }

tabular language [COMPUT SCI] A part of a program which represents the composition of a decision table required by the problem considered. { 'tab·yə·lər 'laŋ·gwij }

tabulate [COMPUT SCI] To order a set of data into a table form, or to print a set of data as a table, usually indicating differences and totals, or just totals. { 'tab·yə,lāt }

tabulation character [COMPUT SCI] A character that controls the action of a computer printer and is not itself printed, although it forms part of the data to be printed. { ,tab·yə'lā·shən ,kar·ik·tər }

tactical electronic warfare [ELECTR] The application of electronic warfare to tactical air operations; tactical electronic warfare encompasses the three major subdivisions of electronic warfare: electronic warfare support measures, electronic countermeasures, and electronic countercountermeasures. { 'tak·tə·kəl ,i,lek'trän·ik 'wȯr ,fer }

tactical frequency [COMMUN] Radio frequency assigned to a military unit to be used in the accomplishment of a tactical mission. { 'tak·tə·kəl 'frē·kwən·sē }

tactile feedback [COMPUT SCI] In haptics, devices that provide a user with the sensations of heat, pressure, and texture. { ,tak·təl 'fēd,bak }

tactile sensor [CONT SYS] A transducer, usually associated with a robot end effector, that is sensitive to touch; comprises stress and touch sensors. { 'tak·təl 'sen·sər }

Tafel slope [ELEC] The slope of a curve of overpotential or electrolytic polarization in volts versus the logarithm of current density. { 'tä·fəl ,slōp }

tag [COMPUT SCI] **1.** A unit of information used as a label or marker. **2.** The symbol written in the location field of an assembly-language coding form, and used to define the symbolic address of the data or instruction written on that line. { 'tag }

tag converting unit [COMPUT SCI] A device capable of reading the perforations of a price tag as input data. { 'tag kən'vərd·iŋ ,yü·nət }

tag field [COMPUT SCI] A data item within a variant record that identifies the format to be used in the record. { 'tag ,fēld }

tag format [COMPUT SCI] The arrangement of data in a short record inserted in a direct-access storage to indicate the location of an overflow record. { 'tag ,fȯr,mat }

tag image file format [COMPUT SCI] File format used for storing bitmap images at any resolution. Abbreviated TIFF. { ¦tag ,im·ij 'fī| ,fȯr,mat }

tag sort [COMPUT SCI] A method of sorting data in which the addresses of records rather than the records themselves are used to determine the sequence. { 'tag ,sȯrt }

tail [ELECTR] **1.** A small pulse that follows the main pulse of a radar set and rises in the same direction. **2.** The trailing edge of a pulse. { tāl }

tail clipping [ELECTR] Method of sharpening the trailing edge of a pulse. { 'tāl ,klip·iŋ }

takedown [COMPUT SCI] The actions performed at the end of an equipment operating cycle to prepare the equipment for the next setup; for example, to remove the tapes from the tape handlers at the end of a computer run is a takedown operation. { 'tāk,daůn }

takedown time [COMPUT SCI] The time required to take down a piece of equipment. { 'tāk,daůn ,tīm }

talk-back circuit *See* interphone. { 'tȯk ,bak ,sər·kət }

talking battery *See* quiet battery. { 'tȯk·iŋ ,bad·ə·rē }

talk-listen switch [ENG ACOUS] A switch provided on intercommunication units to permit using the loudspeaker as a microphone when desired. { 'tȯk 'lis·ən ˌswich }

tandem [ELEC] Two-terminal pair networks are in tandem when the output terminals of one network are directly connected to the input terminals of the other network. { 'tan·dəm }

tandem central office [COMMUN] A telephone office that makes connections between local offices in an area where there is such a high density of local offices that it would be uneconomical to make direct connections between each of them. Also known as tandem office. { 'tan·dəm 'sen·trəl 'ȯf·əs }

tandem compensation *See* cascade compensation. { 'tan·dəm ˌkäm·pən'sā·shən }

tandem connection *See* cascade connection. { 'tan·dəm kə'nek·shən }

tandem distributed numerical control [CONT SYS] A form of distributed numerical control involving a series of machines connected by a conveyor and automatic loading and unloading devices that are under control of the central computers. { 'tan·dəm di¦strib·yəd·əd nü¦mer·ə·kəl kən'trōl }

tandem office *See* tandem central office. { 'tan·dəm 'ȯf·əs }

tandem switching [COMMUN] System of routing telephone calls in which calls do not travel directly between local offices, but rather through a tandem central office. { 'tan·dəm 'swich·iŋ }

tandem system [COMPUT SCI] A computing system in which there are two central processing units, usually with one controlling the other, and with data proceeding from one processing unit into the other. { 'tan·dəm ˌsis·təm }

tank [ELECTR] **1.** A unit of acoustic delay-line storage containing a set of channels, each forming a separate recirculation path. **2.** The heavy metal envelope of a large mercury-arc rectifier or other gas tube having a mercury-pool cathode. **3.** *See* tank circuit. { taŋk }

tank circuit [ELECTR] A circuit which exhibits resonance at one or more frequencies, and which is capable of storing electric energy over a band of frequencies continuously distributed about the resonant frequency, such as a coil and capacitor in parallel. Also known as electrical resonator; tank. { 'taŋk ˌsər·kət }

tantalum capacitor [ELEC] An electrolytic capacitor in which the anode is some form of tantalum; examples include solid tantalum, tantalum-foil electrolytic, and tantalum-slug electrolytic capacitors. { 'tant·əl·əm kə'pas·əd·ər }

tantalum-foil electrolytic capacitor [ELEC] An electrolytic capacitor that uses plain or etched tantalum foil for both electrodes, with a weak acid electrolyte. { 'tant·əl·əm ¦fȯil i¦lek·trə¦lid·ik kə'pas·əd·ər }

tantalum nitride resistor [ELECTR] A thin-film resistor consisting of tantalum nitride deposited on a substrate, such as industrial sapphire. { 'tant·əl·əm 'nīˌtrīd ri'zis·tər }

tantalum-slug electrolytic capacitor [ELEC] An electrolytic capacitor that uses a sintered slug of tantalum as the anode, in a highly conductive acid electrolyte. { 'tant·əl·əm ¦sləg i¦lek·trə¦lid·ik kə'pas·əd·ər }

T antenna [ELECTROMAG] An antenna consisting of one or more horizontal wires, with a lead-in connection being made at the approximate center of each wire. { 'tē anˌten·ə }

tap [ELEC] A connection made at some point other than the ends of a resistor or coil. { tap }

tap changer [ELEC] A device which is used to change the ratio of the input and output voltages of a transformer over any one of a definite number of steps. { 'tap ˌchān·jər }

tap crystal [ELECTR] Compound semiconductor that stores current when stimulated by light and then gives up energy as flashes of light when it is physically tapped. { 'tap ˌkrist·əl }

tape [COMPUT SCI] A ribbonlike material used to store data in lengthwise sequential position. { tāp }

tape alternation [COMPUT SCI] The switching of a computer program back and forth between two tape units in order to avoid interruption of the program during mounting and removal of tape reels. { 'tāp ˌȯl·tər,nā·shən }

tape-automated bonding [ELECTR] A semiconductor chip (die) assembly method, where the chips are connected to polyimide (tape) carriers, complete with circuitry for attachment to a printed circuit board. The chip-bonded tape carriers typically are supplied on a reel (like a roll of film) for automated circuit assembly processes. { ¦tāp ˌōd·əˌmād·əd 'bän·diŋ }

tape bootstrap routine [COMPUT SCI] A computer routine stored in the first block of a magnetic tape that instructs the computer to read certain programs from the tape. { 'tāp 'büt,strap rü ˌtēn }

tape cluster *See* magnetic tape group. { 'tāp ˌkləs·tər }

tape control unit [COMPUT SCI] A device which senses which tape unit is to be accessed for read or write purpose and opens up the necessary electronic paths. Formerly known as hypertape control unit. { 'tāp kənˌtrōl ˌyü·nət }

tape crease [COMPUT SCI] A fold or wrinkle in a magnetic tape that results in an error in the reading or writing of data at that point. { 'tāp ˌkrēs }

tape deck [ENG ACOUS] A tape-recording mechanism that is mounted on a motor board, including the tape transport, electronics, and controls, but no power amplifier or loudspeaker. { 'tāp ˌdek }

tape drive [COMPUT SCI] A tape reading or writing device consisting of a tape transport, electronics, and controls; it usually refers to magnetic tape exclusively. { 'tāp ˌdrīv }

tape editor [COMPUT SCI] A routine designed to help edit, revise, and correct a routine contained on a tape. { 'tāp ˌed·əd·ər }

tape group *See* magnetic tape group. { 'tāp ˌgrüp }

tape label [COMPUT SCI] A record appearing at the beginning or at the end of a magnetic tape to uniquely identify the tape as the one required by the system. { 'tāp ˌlā·bəl }

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tape library [COMPUT SCI] A special area, most often a room within a computer installation, used to store magnetic tapes. { 'tāp ˌlī,brer·ē }

tape-limited [COMPUT SCI] Pertaining to a computer operation in which the time required to read and write tapes exceeds the time required for computation. { 'tāp ¦lim·əd·əd }

tape mark [COMPUT SCI] **1.** A special character or coding, an attached piece of reflective material, or other device that indicates the physical end of recording on a magnetic tape. Also known as destination warning mark; end-of-tape mark. **2.** A special character that divides a file of magnetic tape into sections, usually followed by a record with data describing the particular section of the file. Also known as control mark. { 'tāp ˌmärk }

tape operating system [COMPUT SCI] A computer operating system in which source programs and sometimes incoming data are stored on magnetic tape, rather than in the computer memory. Abbreviated TOS. { 'tāp 'äp·əˌrād·iŋ ˌsis·təm }

tape player [ENG ACOUS] A machine designed only for playback of recorded magnetic tapes. { 'tāp ˌplā·ər }

tape plotting system [COMPUT SCI] A digital incremental plotter in which the digital data are supplied from a magnetic or paper tape. { 'tāp 'plät·iŋ ˌsis·təm }

tape pool [COMPUT SCI] A collection of tape drives. { 'tāp ˌpül }

tape-processing simultaneity [COMPUT SCI] A feature of some computer systems whereby reading or writing of data can be carried out on all the tape units at the same time, while the central processing unit continues to process data. { 'tāp ¦präˌses·iŋ ˌsī·məl·tə'nē·əd·ē }

taper [ELEC] Continuous or gradual change in electrical properties with mechanical position such as rotation or length; for example, continuous change of cross section of a waveguide, or distribution of resistance in a potentiometer. { 'tā·pər }

tape recorder [ENG ACOUS] A device that records audio signals and other information on magnetic tape by selective magnetization of iron oxide particles that form a thin film on the tape; a recorder usually also includes provisions for playing back the recorded material. { 'tāp riˌkȯrd·ər }

tape recording [ENG ACOUS] The record made on a magnetic tape by a tape recorder. { 'tāp riˌkȯrd·iŋ }

tapered transmission line *See* tapered waveguide. { 'tā·pərd tranz'mish·ən ˌlīn }

tapered waveguide [ELECTROMAG] A waveguide in which a physical or electrical characteristic changes continuously with distance along the axis of the waveguide. Also known as tapered transmission line. { 'tā·pərd 'wāvˌgīd }

tape search unit [COMPUT SCI] Small, fully transistorized, special-purpose, digital data-processing system using a stored program to perform logical functions necessary to search a magnetic tape in off-line mode, in response to a specific request. { 'tā·pər 'sərch ˌyü·nət }

tape serial number [COMPUT SCI] A number identifying a magnetic tape which remains unchanged throughout the time the tape is used, even though all other information about the tape may change. { 'tā·pər 'sir·ē·əl ˌnəm·bər }

tape skip [COMPUT SCI] A machine instruction to space forward and erase a portion of tape when a defect on the tape surface causes a write error to persist. { 'tāp ˌskip }

tape station [COMPUT SCI] A tape reading or writing device consisting of a tape transport, electronics, and controls; it may use either magnetic tape or paper tape. { 'tāp ˌstā·shən }

tape-to-tape conversion [COMPUT SCI] A routine which directs a computer to copy information from one tape to another tape of a different kind; for example, from a seven-track onto a nine-track tape. { ¦tāp tə ¦tāp kən'vər·zhən }

tape transport [COMPUT SCI] The mechanism that physically moves a tape past a stationary head. Also known as transport. { 'tāp ˌtranzˌpȯrt }

tape unit [COMPUT SCI] A tape reading or writing device consisting of a tape transport, electronics, controls, and possibly a cabinet; the cabinet may contain one or more magnetic tape stations. { 'tāp ˌyü·nət }

tapped control [ELECTR] A rheostat or potentiometer having one or more fixed taps along the resistance element, usually to provide a fixed grid bias or for automatic bass compensation. { 'tapt kən'trōl }

tapped-potentiometer function generator [ELECTR] A device used in analog computers for representing a function of one variable, consisting of a potentiometer with a number of taps held at voltages determined by a table of values of the variable; the input variable sets the angular position of a shaft that moves a slide contact, and the output voltage is taken from the slide contact. { 'tapt pəˌten·chē¦äm·əd·ər 'fəŋk·shən ˌjen·əˌrād·ər }

tapped resistor [ELEC] A wire-wound fixed resistor having one or more additional terminals along its length, generally for voltage-divider applications. { 'tapt ri'zis·tər }

tap switch [ELEC] Multicontact switch used chiefly for connecting a load to any one of a number of taps on a resistor or coil. { 'tap ˌswich }

target [ELECTR] **1.** In a television camera tube, the storage surface that is scanned by an electron beam to generate an output signal current corresponding to the charge-density pattern stored there. **2.** In radar and sonar, any object capable of reflecting the transmitted beam; depending on context, often connotes an object of interest as opposed to clutter. [ENG] In radar and sonar, any object capable of reflecting the transmitted beam. { 'tär·gət }

target acquisition [ELECTR] **1.** The first appearance of a recognizable and useful echo signal from a new target in radar and sonar. **2.** *See* acquisition. { 'tär·gət ˌak·wə'zish·ən }

target central processing unit [COMPUT SCI] The type of central processing unit for which a language processor (assembler, compiler, or interpreter) generates machine language output. { 'tar·gət ¦sen·trəl 'präˌses·iŋ ˌyü·nət }

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target configuration [COMPUT SCI] The combination of input, output, and storage units and the amount of computer memory required to carry out an object program. { 'tär·gət kən,fig·yə ,rā·shən }

target cross section See echo area. { 'tär·gət 'krȯs ,sek·shən }

target-designating system [ELECTR] A system for designating to one instrument a target which has already been located by a second instrument; it employs electrical data transmitters and receivers which indicate on one instrument the pointing of another. { 'tär·gət ¦dez·ig,nād·iŋ ,sis·təm }

target discrimination [ELECTR] The ability of a detection or guidance system to distinguish a target from its background or to discriminate between two or more targets that are close acquisition. { 'tär·gət di,skrim·ə,nā·shən }

target language [COMPUT SCI] The language into which a program (or text) is to be converted. { 'tär·gət ¦laŋ·gwij }

target pack [COMPUT SCI] A disk pack that is used to maintain systems software and, in particular, to hold a copy of a system control program on which modifications are made and tested. { 'tär·gət ,pak }

target phase [COMPUT SCI] The stage of handling a computer program at which the object program is first carried out after it has been compiled. { 'tär·gət ,fāz }

target program See object program. { 'tär·gət ¦prō ,gram }

target routine See object program. { 'tär·gət rü ,tēn }

target signal [ELECTROMAG] The radio energy returned to a radar by a target. Also known as echo signal; video signal. { 'tär·gət ,sig·nəl }

target signature [ELECTR] Characteristic pattern of the target displayed by detection and classification equipment. { 'tär·gət ,sig·nə·chər }

task [COMPUT SCI] A set of instructions, data, and control information capable of being executed by the central processing unit of a digital computer in order to accomplish some purpose; in a multiprogramming environment, tasks compete with one another for control of the central processing unit, but in a nonmultiprogramming environment a task is simply the current work to be done. { task }

task descriptor [COMPUT SCI] The vital information about a task in a multitask system which must be saved when the task is interrupted. Also known as state vector. { 'task di,skrip·tər }

task management [COMPUT SCI] The functions, assumed by the operating system, of switching the processor among tasks, scheduling, sending messages or timing signals between tasks, and creating or removing tasks. { 'task ,man·ij·mənt }

task programmer [COMPUT SCI] A person who writes applications programs for controlling a robotic system. { 'task ,prō,gram·ər }

task switching [COMPUT SCI] Switching back and forth between two or more active programs without having to close or open any of them. Also known as context switching. { 'task ,swich·iŋ }

T attenuator [ELEC] **1.** A resistive attenuator with three resistors forming a T network. **2.** A power-tap type of attenuator which removes part of the power from a main line through a T connection and dissipates the power, without reflection into the main line. { 'tē ə,ten·yə,wād·ər }

Taylor connection [ELEC] A transformer connection for converting three-phase power to two-phase power, or vice versa. { 'tā·lər kə ,nek·shən }

T circulator [ELECTROMAG] A circulator in which three identical rectangular waveguides are joined asymmetrically to form a T-shaped structure, with a ferrite post or wedge at its center; power entering any waveguide emerges from only one adjacent waveguide. { 'tē ,sər·kyə,lād·ər }

T connector [ELEC] A type of electric connector that joins a through conductor to another conductor at right angles to it. { 'tē kə,nek·tər }

TCP See Transmission Control Protocol.

TCP/IP See Transmission Control Protocol/Internet Protocol.

TD See transmitter-distributor.

TDD See display device.

TDM See time-division multiplexing.

TDMA See time-division multiple access.

TDR See time-domain reflectometer.

TDRSS See Tracking and Data Relay Satellite System.

TEA See transferred-electron amplifier.

teach [CONT SYS] To program a robot by guiding it through its motions, which are then recorded and stored in its computer. { tēch }

teach box See teach pendant. { 'tēch ,bäks }

teach-by-doing [CONT SYS] A method of programming a robot in which the operator guides the robot through its intended motions by holding it and performing the work. { ¦tēch ·bī 'dü·iŋ }

teach-by-driving [CONT SYS] Programming a robot by using a teach pendant. { ¦tēch ·bī 'drīv·iŋ }

teach gun See teach pendant. { 'tēch ,gən }

teaching interface [CONT SYS] The devices and hardware that are used to instruct robots and other machinery how to operate, and to specify their motions. { 'tēch·iŋ 'in·tər,fās }

teach mode [CONT SYS] The mode of operation in which a robot is instructed in its motions, usually by guiding it through these motions using a teach pendant. { 'tēch ,mōd }

teach pendant [CONT SYS] A hand-held device used to instruct a robot, specifying the character and types of motions it is to undertake. Also known as teach box; teach gun. { 'tēch ,pen·dənt }

tears [COMMUN] In an analog television picture, a horizontal disturbance caused by noise, in which the picture appears to be torn apart. { tirz }

teaser transformer [ELEC] Transformer, of two T-connected, single-phase units for three-phase to two-phase or two-phase to three-phase operation, which is connected between the midpoint

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of the main transformer and the third wire of the three-phase system. { 'tēz·ər tranz,fôr·mər }

technetron [ELECTR] High-power multichannel field-effect transistor. { 'tek·nə,trän }

technical control board [ELEC] Testing position in a switch center or relay station with provisions for testing switches and associated access lines and trunks. { 'tek·nə·kəl kən'trōl ,bōrd }

technical load [ELEC] Portion of a communications-electronics facility operational power load required for primary and ancillary equipment, including necessary lighting and air conditioning or ventilation required for full continuity of operation. { 'tek·nə·kəl 'lōd }

TEGFET *See* high-electron-mobility transistor. { 'teg,fet }

telautograph [COMMUN] A writing telegraph instrument, the forerunner of the facsimile machine, in which manual movement of a pen at the transmitting position varies the current in two circuits in such a way as to cause corresponding movements of a pen at the remote receiving instrument; ordinary handwriting can thus be transmitted over wires. { te'lȯd·ə,graf }

telecast [COMMUN] A television broadcast intended for reception by the general public, involving the transmission of the picture and sound portions of the program. { 'tel·ə,kast }

telechir [CONT SYS] A handlike remote manipulator. { 'tel·ə,kir }

telechirics [CONT SYS] The use of teleoperators or remote manipulators. { ¦tel·ə¦kir·iks }

telecine camera [ELECTR] A video camera used in conjunction with film or slide projectors to televise motion pictures and still images. { ¦tel·ə¦sin·ē 'kam·rə }

telecommunicating device for the deaf *See* telecommunications display device. { ¦tel·ə·kə'myü·nə·kād·iŋ di'vīs ,fôr thə 'def }

telecommunications [COMMUN] Communication over long distances. { ¦tel·ə·kə,myü·nə'kā·shənz }

Telecommunications Coordinating Committee [COMMUN] Committee organized by the U.S. State Department and composed of major government departments, agencies, and industrial organizations; makes recommendations on telecommunications matters affecting international telecommunications. { ¦tel·ə·kə,myü·nə'kā·shənz kō'ȯrd·ən,ād·iŋ kə,mid·ē }

telecommunications display device [COMMUN] A telephone equipped with a keyboard and display for users who have hearing or speech impairments. Also known as telecommunications device for the deaf; text telephone. Abbreviated TDD. { ¦tel·ə·kə,myü·nə'kā·shənz di'splā di,vīs }

teleconference [COMMUN] **1.** A two-way interactive meeting between relatively small groups of people remote from one another but linked by telecommunication facilities involving audio communication, and possibly also video, graphics, or facsimile. **2.** More broadly, any of various facilities allowing people to communicate among each other over some distance, encompassing teleseminars and telemeetings. { ¦tel·ə'kän·frəns }

telegram [COMMUN] A message sent by telegraphy. { 'te·lə,gram }

telegraph alphabet *See* telegraph code. { 'tel·ə ,graf 'al·fə,bet }

telegraph bandwidth [COMMUN] The difference between the limiting frequencies of a channel used to transmit telegraph signals. { 'tel·ə,graf 'band,width }

telegraph cable [ELEC] A uniform conductive circuit consisting of twisted pairs of insulated wires or coaxially shielded wires or combinations of each, used to carry telegraph signals. { 'tel·ə ,graf ,kā·bəl }

telegraph carrier [COMMUN] The single-frequency wave which is modulated by transmitting apparatus in carrier telegraphy. { 'tel·ə,graf ,kar·ē·ər }

telegraph circuit [COMMUN] The complete wire or radio circuit over which signal currents flow between transmitting and receiving apparatus in a telegraph system. { 'tel·ə,graf ,sər·kət }

telegraph code [COMMUN] A system of symbols for transmitting telegraph messages in which each letter or other character is represented by a set of long and short electrical pulses, or by pulses of opposite polarity, or by time intervals of equal length in which a signal is present or absent. Also known as telegraph alphabet. { 'tel·ə,graf ,kōd }

telegraph concentrator [ELEC] Switching arrangement by means of which a number of branch or subscriber lines or station sets may be connected to a lesser number of trunklines, operating positions, or instruments through the medium of manual or automatic switching devices to obtain more efficient use of facilities. { 'tel·ə,graf 'käns·ən,trād·ər }

telegraph distributor [ELEC] Device which effectively associates one direct-current or carrier-telegraph channel in rapid succession with the elements of one or more sending or receiving devices. { 'tel·ə,graf di,strib·yəd·ər }

telegraph emission [COMMUN] The signal transmitted by a telegraph system, classified by type of transmission, type of modulation, bandwidth, and supplementary characteristics. { 'tel·ə,graf i,mish·ən }

telegraph grade [COMMUN] The class of communication circuits that can transmit only telegraphic signals, comprising the lowest types of circuits in regard to speed, accuracy, and cost. { 'tel·ə,graf ,grād }

telegraph interference [COMMUN] Any undesired electrical energy that tends to interfere with the reception of telegraph signals. { 'tel·ə,graf ,in·tər'fir·ənts }

telegraph receiver [ELEC] A tape reperforator, teletypewriter, or other equipment which converts telegraph signals into a pattern of holes on a tape, printed letters, or other forms of information. { 'tel·ə,graf ri,sē·vər }

telegraph repeater [ELEC] A repeater inserted at intervals in long telegraph lines to amplify weak

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code signals, with or without reshaping of pulses, and to retransmit them automatically over the next section of the line. { 'tel·ə,graf ri,pēd·ər }

telegraph signal distortion [COMMUN] Time displacement of transitions between conditions, such as marking and spacing, with respect to their proper relative positions in perfectly timed signals; the total distortion is the algebraic sum of the bias and the characteristic and fortuitous distortions. { 'tel·ə,graf ¦sig·nəl di,stȯr·shən }

telegraph transmitter [ELEC] A device that controls an electric power source in order to form telegraph signals. { 'tel·ə,graf tranz,mid·ər }

telegraphy [COMMUN] Communication at a distance by means of code signals consisting of current pulses sent over wires or by radio; it is the oldest form of electrical digital communication. { tə'leg·rə·fē }

telemeeting [COMMUN] A meeting between people remote from one another, but linked by audio and video telecommunications facilities that provide primarily one-way communication from a few people at one location to large numbers of people at other locations, and use temporary equipment or circuits. { 'tel·ə,mēd·iŋ }

telemetering [ENG] Transmitting the readings of instruments to a remote location by means of wires, radio waves, or other means. Also known as remote metering, telemetry. { ,tel·ə'mēd·ə·riŋ }

telemetering antenna [ELECTROMAG] A highly directional antenna, generally mounted on a servo-controlled mount for tracking purposes, used at ground stations to receive telemetering signals from a guided missile or spacecraft. { ,tel·ə'mēd·ə·riŋ an'ten·ə }

telemetering receiver [ELECTR] A device in a telemetering system which converts electrical signals into an indication or recording of the value of the quantity being measured at a distance. { ,tel·ə'mēd·ə·riŋ ri'sē·vər }

telemetering transmitter [ELECTR] A device which converts the readings of instruments into electrical signals for transmission to a remote location by means of wires, radio waves, or other means. { ,tel·ə'mēd·ə·riŋ tranz'mid·ər }

telemetry *See* telemetering. { tə'lem·ə·trē }

teleoperation [ENG] **1.** The real-time control of remotely located machines that act as the eyes and hands of a person located elsewhere, it has been used in undersea and lunar exploration, mining, and microsurgery. **2.** Operation from a remote location. Also known as remote manipulation. { ,tel·ē,äp·ə'rā·shən }

teleoperator *See* remote manipulator. { ,tel·ē ,äp·ə,rād·ər }

telephone [COMMUN] A system of converting sound waves into variations in electric current or other electrical quantities that can be transmitted and reconverted into sound waves at a distant point, used primarily for voice communication; it consists essentially of a telephone transmitter and receiver at each station, interconnecting wires, cables, optical fibers, or terrestrial or satellite radio transmission systems, signaling devices, a central power supply, and switching facilities. Also known as telephone system. [ENG ACOUS] *See* telephone set. { 'tel·ə,fōn }

telephone-answering system [COMMUN] A special type of private branch exchange system used by a telephone-answering service bureau to provide secretarial service for its customers. { 'tel·ə,fōn ¦an·sə·riŋ ,sis·təm }

telephone carrier current [ELEC] A carrier current used for telephone communication over power lines or to obtain more than one channel on a single pair of wires. { 'tel·ə,fōn 'kar·ē·ər ,kə·rənt }

telephone central office *See* central office. { 'tel·ə,fōn 'sen·trəl 'ȯf·əs }

telephone channel [COMMUN] A one-way or two-way path suitable for the transmission of audio signals between two stations. { 'tel·ə,fōn ,chan·əl }

telephone circuit [ELEC] The complete circuit over which audio and signaling currents travel in a telephone system between the two telephone subscribers in communication with each other; the circuit usually consists of insulated conductors, a radio link, or a fiber-optic cable. { 'tel·ə ,fōn ,sər·kət }

telephone data set [COMPUT SCI] Equipment interfacing a data terminal with a telephone circuit. { 'tel·ə,fōn 'dad·ə ,set }

telephone dial [ENG] **1.** A switch operated by a finger wheel, used to make and break a pair of contacts the required number of times for setting up a telephone circuit to the party being called. **2.** By extension, the push-button apparatus used to generate dual-tone multifrequency (DTMF) signals. { 'tel·ə,fōn ,dīl }

telephone emission *See* telephone signal. { 'tel·ə ,fōn i,mish·ən }

telephone induction coil [ELEC] A coil used in a telephone circuit to match the impedance of the line to that of a telephone transmitter or receiver. { 'tel·ə,fōn in'dək·shən ,kȯil }

telephone influence factor [COMMUN] A measure of the interference of power-line harmonics with telephone lines, which is derived by weighting the terms in the mathematical expression for the total harmonic distortion of the power-line voltage. { 'tel·ə,fōn 'in·flü·əns ,fak·tər }

telephone line [ELEC] The conductors extending between telephone subscriber stations and central offices. { 'tel·ə,fōn ,līn }

telephone loading coil *See* loading coil. { 'tel·ə ,fōn 'lōd·iŋ ,kȯil }

telephone modem [ELECTR] A piece of equipment that modulates and demodulates one or more separate telephone circuits, each containing one or more telephone channels; it may include multiplexing and demultiplexing circuits, individual amplifiers, and carrier-frequency sources. { 'tel·ə,fōn 'mō,dem }

telephone pickup [ELEC] A large flat coil placed under a telephone set to pick up both voices during a telephone conversation for recording purposes. { 'tel·ə,fōn ,pik·əp }

telephone plug *See* phone plug. { 'tel·ə,fōn ,pləg }

telephone receiver [ENG ACOUS] The portion of a telephone set that converts the audio-frequency current variations of a telephone line into sound

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waves, by the motion of a diaphragm activated by a magnet whose field is varied by the electrical impulses that come over the telephone wire. { 'tel·ə,fōn ri,sē·vər }

telephone relay [ELEC] A relay having a multiplicity of contacts on long spring strips mounted parallel to the coil, actuated by a lever arm or other projection of the hinged armature; used chiefly for switching in telephone circuits. { 'tel·ə,fōn ,rē,lā }

telephone repeater [ELECTR] A repeater inserted at one or more intermediate points in a long telephone line to amplify telephone signals so as to maintain the required current strength. { 'tel·ə,fōn ri,pēd·ər }

telephone repeating coil [ELEC] A coil used in a telephone circuit for inductively coupling two sections of a line when a direct connection is undesirable. { 'tel·ə,fōn ri'pēd·iŋ ,kȯil }

telephone ringer [ELECTROMAG] **1.** An electromagnetic device that actuates a clapper which strikes one or more gongs to produce a ringing sound, used with a telephone set to signal a called party. **2.** By extension, the electronic device that performs the same function. { 'tel·ə ,fōn ,riŋ·ər }

telephone set [ENG ACOUS] An assembly including a telephone transmitter, a telephone receiver, and associated switching and signaling devices. Also known as phone; telephone. { 'tel·ə ,fōn ,set }

telephone signal [COMMUN] The electrical signal transmitted by a telephone system, classified by type of transmission, type of modulation, bandwidth, and supplementary characteristics. Also known as telephone emission. { 'tel·ə,fōn ,sig·nəl }

telephone switchboard *See* switchboard. { 'tel·ə ,fōn 'swich,bȯrd }

telephone system *See* telephone. { 'tel·ə,fōn ,sis·təm }

telephone transmitter [ENG ACOUS] The microphone used in a telephone set to convert speech into audio-frequency electric signals. { 'tel·ə ,fōn tranz,mid·ər }

telephony [COMMUN] The transmission of speech to a distant point by means of electric signals. { tə'lef·ə·nē }

telephoto *See* facsimile. { ¦tel·ə'fōd·ō }

telephotography *See* facsimile. { ¦tel·ə·fə'täg·rə·fē }

teleport [COMMUN] A planned business development area that features direct and economic access to a large number of domestic and international satellites for users in the surrounding region, with the aid of a regional distribution network. { 'tel·ə,pȯrt }

telepresence [CONT SYS] The quality of sensory feedback from a teleoperator or telerobot to a human operator such that the operator feels present at the remote site. { ¦tel·ə'prez·əns }

teleprinter [COMPUT SCI] Any typewriter-type device capable of being connected to a computer and of printing out a set of messages under computer control. { 'tel·ə,print·ər }

teleprinting [COMMUN] Telegraphy in which the transmitter and receiver are teletypewriters. { 'tel·ə,print·iŋ }

teleprocessing [COMPUT SCI] **1.** The use of telecommunications equipment and systems by a computer. **2.** A computer service involving input/output at locations remote from the computer itself. { 'tel·ə,prä,ses·iŋ }

teleprocessing monitor [COMPUT SCI] A computer program that manages the transfer of information between local and remote terminals. Abbreviated TP monitor. { 'tel·ə,prä,ses·iŋ 'män·əd·ər }

telering [ELECTR] In telephony, a frequency-selector device for the production of ringing power. { 'tel·ə,riŋ }

telerobot [CONT SYS] A type of teleoperator that embodies features of a robot and is programmed for communication with a human operator in a high-level language but can revert to direct control in the event of unplanned contingencies. { ,tel·ə'rō,bät }

teleseminar [COMMUN] A form of long-distance, electronic communication, primarily one-way, to many destinations from one source, for educational purposes, involving audio communication, and possibly also video and some form of graphics. { ¦tel·ə'sem·ə,när }

telesynd [ELECTR] Telemeter or remote-control equipment which is synchronous in both speed and position. { 'tel·ə,sind }

teleterminal [COMPUT SCI] An instrument that integrates the functions of a telephone set and a computer terminal with keyboard and video screen. { ¦tel·ə'tər·mən·əl }

telethesis [ENG] A robotic manipulation aid for the physically disabled that may be located remote from the body. There are two forms, operated by voice command, or operated through a body-powered prosthesis or a joystick. { tə'le·th·ə·səs }

teletypewriter [COMMUN] A special electric typewriter that produces coded electric signals corresponding to manually typed characters, and automatically types messages when fed with similarly coded signals produced by another machine; it allows access to telephone services for people who are deaf, or who have a hearing, speech, or communication impairment. Also known as TWX machine. Abbreviated TTY. { ¦tel·ə'tīp,rīd·ər }

teletypewriter code [COMMUN] Special code in which each code group is made up of five units, or elements, of equal length which are known as marking or spacing impulses; the five-unit start-stop code consists of five signal impulses preceded by a start impulse and followed by a stop impulse. { ¦tel·ə'tīp,rīd·ər ,kōd }

teletypewriter exchange service [COMMUN] A service furnished by telephone companies to subscribers in the United States, whereby any of the subscribers can communicate directly with any other subscriber via teletypewriter. Also known as TWX service. { ¦tel·ə'tīp,rīd·ər iks ¦chānj ,sər·vəs }

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teletypewriter signal distortion [COMMUN] Of a start-stop teletypewriter signal, the shifting of the transition points of the signal pulses from their proper positions relative to the beginning of the start pulse; the magnitude of the distortion is expressed in percent of a perfect unit pulse length. { |tel·ə'tīp ˌrīd·ər 'sig·nəl diˌstȯr·shən }

televise [COMMUN] To pick up a scene with a video camera and convert it into corresponding electric signals for transmission by a television station. { 'tel·əˌvīz }

television [COMMUN] A system for converting a succession of visual images into corresponding electric signals and transmitting these signals by radio or over wires to distant receivers at which the signals can be used to reproduce the original images. Abbreviated TV. { 'tel·əˌvizh·ən }

television antenna [ELECTROMAG] An antenna suitable for transmitting or receiving television broadcasts; since television transmissions in the United States are horizontally polarized, the most basic type of receiving antenna is a horizontally mounted half-wave dipole. { 'tel·əˌvizh·ən an ˌten·ə }

television bandwidth [COMMUN] The difference between the limiting frequencies of a television channel; in the United States, this is 6 megahertz. { 'tel·əˌvizh·ən 'bandˌwidth }

television broadcast band [COMMUN] Several groups of channels, each containing a number of 6-megahertz channels, that are available for assignment to television broadcast stations. { 'tel·əˌvizh·ən 'brȯdˌkast ˌband }

television broadcasting [COMMUN] Transmission of television programs by means of radio waves for reception by the public. { 'tel·əˌvizh·ən 'brȯdˌkast·iŋ }

television camera [ELECTR] The pickup unit used to convert a scene into corresponding electric signals; optical lenses focus the scene to be televised on the photosensitive surface of a camera tube, and the tube breaks down the visual image into small picture elements and converts the light intensity of each element in turn into a corresponding electric signal. Also known as camera. { 'tel·əˌvizh·ən ˌkam·rə }

television camera tube *See* camera tube. { 'tel·ə ˌvizh·ən 'kam·rə ˌtüb }

television channel [COMMUN] A band of frequencies 6 megahertz wide in the television broadcast band, available for assignment to a television broadcast station. { 'tel·əˌvizh·ən ˌchan·əl }

television emission *See* television signal. { 'tel·ə ˌvizh·ən iˌmish·ən }

television interference [COMMUN] Interference produced in television receivers by other transmitting devices. Abbreviated TVI. { 'tel·ə ˌvizh·ən ˌin·tər'fir·ənts }

television monitor [ELECTR] A display device used to continuously check the image picked up by a television camera and the sound picked up by video camera or other source to provide continuous observation of image content and/or quality. { 'tel·əˌvizh·ən ˌman·əd·ər }

television network [COMMUN] An arrangement of communication channels, suitable for transmission of video and accompanying audio signals, which link together groups of television broadcasting stations or closed-circuit television users in different cities so that programs originating at one point can be fed simultaneously to all others. { 'tel·əˌvizh·ən ˌnetˌwərk }

television pickup station [COMMUN] A land mobile station used for the transmission of television program material and related communications from the scene of an event occurring at a point remote to a television broadcast station. { 'tel·əˌvizh·ən 'pikˌəp ˌstā·shən }

television picture tube *See* picture tube. { 'tel·ə ˌvizh·ən 'pikˌchər ˌtūb }

television receive only antenna [COMMUN] A parabolic reflector or dish with sufficient gain to receive signals from geostationary satellites, together with a feed horn that collects the signals reflected by the dish, a low-noise amplifier for preamplification, and a tunable satellite receiver. Abbreviated TVRO. { 'tel·əˌvizh·ən riˌsēv ˌōn·lē an'ten·ə }

television receiver [ELECTR] A receiver that converts incoming television signals into the original scenes along with the associated sounds. Also known as television set. { 'tel·əˌvizh·ən riˌsē·vər }

television relay system *See* television repeater. { 'tel·əˌvizh·ən 'rēˌlā ˌsis·təm }

television repeater [ELECTR] A repeater that transmits television signals from point to point by using radio waves in free space as a medium, such transmission not being intended for direct reception by the public. Also known as television relay system. { 'tel·əˌvizh·ən riˌpēd·ər }

television screen [ELECTR] The fluorescent screen of the picture tube in a television receiver. { 'tel·əˌvizh·ən ˌskrēn }

television set *See* television receiver. { 'tel·ə ˌvizh·ən ˌset }

television signal [COMMUN] A general term for the aural and visual signals that are broadcast together to provide the sound and picture portions of an analog television program. Also known as television emission. { 'tel·əˌvizh·ən ˌsig·nəl }

television station [COMMUN] The installation, assemblage of equipment, and location where radio transmissions are sent or received. { 'tel·ə ˌvizh·ən ˌstā·shən }

television studio [COMMUN] A complex of rooms specifically designed for the origination of live or taped television programs. { 'tel·əˌvizh·ən ˌstüd·ē·ō }

television transmitter [ELECTR] An electronic device that converts the audio and video signals of a television program into modulated radio-frequency energy that can be radiated from an antenna and received on a television receiver. { 'tel·əˌvizh·ən tranzˌmid·ər }

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television tuner [ELECTR] A component in a television receiver that selects the desired channel and converts the frequencies received to lower frequencies within the passband of the intermediate-frequency chain. { 'tel·ə,vizh·ən ,tü·nər }

telewriter [COMMUN] System in which writing movement at the transmitting end causes corresponding movement of a writing instrument at the receiving end. { 'tel·ə,rīd·ər }

Telex [COMMUN] A worldwide teleprinter exchange service providing direct send and receive teleprinter connections between subscribers. Abbreviated TEX. { 'te,leks }

telluric current *See* earth current. { tə'lür·ik ,kə·rənt }

TELNET *See* network terminal protocol. { 'tel ,net }

TEM mode *See* transverse electromagnetic mode. { ,tē,ē'em ,mōd }

TE mode *See* transverse electric mode. { ¦tē'ē ,mōd }

temperature-compensated Zener diode [ELECTR] Positive-temperature-coefficient reversed-bias Zener diode (*pn* junction) connected in series with one or more negative-temperature forward-biased diodes within a single package. { 'tem·prə·chər ¦käm·pən,sād·əd 'zē·nər ,dī,ōd }

temperature-compensating capacitor [ELEC] Capacitor whose capacitance varies with temperature in a known and predictable manner, used extensively in oscillator circuits to compensate for changes in the values of other parts with temperatures. { 'tem·prə·chər ¦käm·pən,sād·iŋ kə'pas·əd·ər }

temperature compensation [ELECTR] The process of making some characteristic of a circuit or device independent of changes in ambient temperature. { 'tem·prə·chər ,käm·pən,sā·shən }

temperature resistance coefficient [ELEC] The ratio of the change of electrical resistance in a wire caused by a change in its temperature of 1°C as related to its resistance at 0°C. { 'tem·prə·chər ri'zis·təns ,kō·i,fish·ənt }

temperature saturation [ELECTR] The condition in which the anode current of a thermionic vacuum tube cannot be further increased by increasing the cathode temperature at a given value of anode voltage; the effect is due to the space charge formed near the cathode. Also known as filament saturation; saturation. { 'tem·prə·chər ,sach·ə,rā·shən }

temperature sensor [ENG] A device designed to respond to temperature stimulation. { 'tem·prə·chər ,sen·sər }

temperature transducer [ENG] A device in an automatic temperature-control system that converts the temperature into some other quantity such as mechanical movement, pressure, or electric voltage; this signal is processed in a controller, and is applied to an actuator which controls the heat of the system. { 'tem·prə·chər tranz ,dü·sər }

template [COMPUT SCI] **1.** A prototype pattern against which observed patterns are matched in a pattern recognition system. **2.** A computer program that is used in conjunction with an electronic spreadsheet to solve a particular type of problem. { 'tem·plət }

template matching [COMPUT SCI] The comparison of a picture or other data with a stored program or template, for purposes of identification or inspection. { 'tem·plət ,mach·iŋ }

temporary file [COMPUT SCI] A file that is created during the execution of a computer program to hold interim results and is erased before the program is completed. { 'tem·pə,rer·ē 'fīl }

temporary storage [COMPUT SCI] The storage capacity reserved or used for retention of temporary or transient data. { 'tem·pə,rer·ē 'stór·ij }

TEM wave *See* transverse electromagnetic wave. { ,tē,ē'em ,wāv }

terahertz technology [ENG] The generation, detection, and application (such as in communications and imaging) of electromagnetic radiation roughly in the frequency range from 0.05 to 20 terahertz, corresponding to wavelengths from 6 millimeters down to 15 micrometers. { ,ter·ə ,hərts tek'näl·ə·jē }

teraohm [ELEC] A unit of electrical resistance, equal to 10^{12} ohms, or 1,000,000 megohms. Abbreviated TΩ. { 'ter·ə,ōm }

teraohmmeter [ENG] An ohmmeter having a teraohm range for measuring extremely high insulation resistance values. { ¦ter·ə'ōm,mēd·ər }

terminal [COMPUT SCI] A site or location at which data can leave or enter a system. [ELEC] **1.** A screw, soldering lug, or other point to which electric connections can be made. Also known as electric terminal. **2.** The equipment at the end of a microwave relay system or other communication channel. **3.** One of the electric input or output points of a circuit or component. { 'tər·mən·əl }

terminal area [ELECTR] The enlarged portion of conductor material surrounding a hole for a lead on a printed circuit. Also known as land; pad. { 'tər·mən·əl ¦er·ē·ə }

terminal block [COMMUN] **1.** A cluster of five captive screw terminals at which a telephone pair terminates; the center terminal is for the ground wire, and two other terminals are used for the tip and ring wires. **2.** By extension, a similar cluster of any number of screw terminals. { 'tər·mən·əl ,bläk }

terminal board [ELEC] An insulating mounting for terminal connections. Also known as terminal strip. { 'tər·mən·əl ,bórd }

terminal box [ELEC] An enclosure which includes, mounts, and protects one or more terminals or terminal boards; it may include a cover and such accessories as mounting hardware, brackets, locks, and conduit fittings. { 'tər·mən·əl ,bäks }

terminal cutout pairs [ELEC] Numbered, designated pairs brought out of a cable at a terminal. { 'tər·mən·əl 'kəd,aút ,perz }

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terminal equipment [COMMUN] **1.** Assemblage of communications-type equipment required to transmit or receive a signal on a channel or circuit, whether it be for delivery or relay. **2.** In radio relay systems, equipment used at points where intelligence is inserted or derived, as distinct from equipment used to relay a reconstituted signal. **3.** Telephone and teletypewriter switchboards and other centrally located equipment at which wire circuits are terminated. { 'tər·mən·əl i,kwip·mənt }

terminal leg *See* terminal stub. { 'tər·mən·əl ,leg }

terminal network [COMPUT SCI] A system that links intelligent terminals through a communications channel. { 'tər·mən·əl 'net,wərk }

terminal pair [ELEC] An associated pair of accessible terminals, such as the input or output terminals of a device or network. { 'tər·mən·əl 'per }

terminal repeater [COMMUN] **1.** Assemblage of equipment designed specifically for use at the end of a communications circuit, as contrasted with the repeater designed for an intermediate point. **2.** Two microwave terminals arranged to provide for the interconnection of separate systems, or separate sections of a system. { 'tər·mən·əl ri'pēd·ər }

terminal room [COMMUN] In telephone practice, a room associated with a central office, private branch exchange, or private exchange, which contains distributing frames, relays, and similar apparatus, except that mounted in the switchboard section. { 'tər·mən·əl ,rüm }

terminal station [COMMUN] Receiving equipment and associated multiplex equipment used at the ends of a radio-relay system. { 'tər·mən·əl ,stā·shən }

terminal strip *See* terminal board. { 'tər·mən·əl ,strip }

terminal stub [ELEC] Piece of cable that comes with a cable terminal for splicing into the main cable. Also known as terminal leg. { 'tər·mən·əl ,stəb }

terminal vertex [MATH] A vertex in a rooted tree that has no successor. Also known as leaf. { 'tər·mən·əl 'vər,teks }

terminal voltage [ELEC] The voltage at the terminals connected to the source of electricity for an electric machine. { 'tər·mən·əl ,vōl·tij }

terminate and stay resident *See* RAM resident. { 'tər·mə,nāt ən ,stā 'rez·ə·dənt }

terminated line [ELEC] Transmission line terminated in a resistance equal to the characteristic impedance of the line, so there is no reflection and no standing waves. { 'tər·mə,nād·əd 'līn }

terminating [ELEC] Closing of the circuit at either end of a line or transducer by connecting some device thereto; terminating does not imply any special condition such as the elimination of reflection. { 'tər·mə,nād·iŋ }

ternary code [COMMUN] Code in which each code element may be any one of three distinct kinds or values. { 'tər·nə·rē 'kōd }

ternary incremental representation [COMPUT SCI] A type of incremental representation in which the value of the change in a variable is defined as +1, −1, or 0. { 'tər·nə·rē ,iŋ·krə'ment·əl ,rep·ri·zən'tā·shən }

ternary pulse code modulation [COMMUN] Pulse code modulation in which each code element may be any one of three distinct kinds or values. { 'tər·nə·rē 'pəls ¦kōd ,mäj·ə'lā·shən }

terrain echoes *See* ground clutter. { tə'rān 'ek· ōz }

tertiary storage [COMPUT SCI] Any of several types of computer storage devices, usually consisting of magnetic tape transports and mass storage tape systems, which have slower access times, larger capacity, and lower cost than main storage or secondary storage. { 'tər·shē,er·ē 'stōr·ij }

tertiary winding *See* stabilized winding. { 'tər·shē ,er·ē 'wīnd·iŋ }

testboard [ELEC] Switchboard equipped with testing apparatus, arranged so that connections can be made from it to telephone lines or central-office equipment for testing purposes. { 'test,bōrd }

test clip [ELEC] A spring clip used at the end of an insulated wire lead to make a temporary connection quickly for test purposes. { 'test ,klip }

test data [COMPUT SCI] A set of data developed specifically to test the adequacy of a computer run or system; the data may be actual data that has been taken from previous operations, or artificial data created for this purpose. { 'test ,dad·ə }

test file [COMPUT SCI] A file consisting of test data. { 'test ,fī| }

testing level [ELEC] Value of power used for reference represented by 0.001 watt working in 600 ohms. { 'test·iŋ ,lev·əl }

test jack [ELEC] **1.** Appearance of a circuit or circuit element in jacks for testing purposes. **2.** In recent practice, a jack multipled with the switchboard operating jack. { 'test ,jak }

test lead [ELEC] A flexible insulated lead, usually with a test prod at one end, used for making tests, connecting instruments to a circuit temporarily, or making other temporary connections. { 'test ,lēd }

test oscillator *See* signal generator. { 'test ,äs·ə ,lād·ər }

test pattern [COMMUN] A chart having various combinations of lines, squares, circles, and graduated shading used to check definition, linearity, and contrast of a video system. Also known as resolution chart. { 'test ,pad·ərn }

test point [ELEC] A terminal or plug-in connector provided in a circuit to facilitate monitoring, calibration, or trouble-shooting. { 'test ,point }

test prod [ELEC] A metal point attached to an insulating handle and connected to a test lead for convenience in making a temporary connection to a terminal while tests are being made. Also known as prod. { 'test ,präd }

test program *See* check routine. { 'test ,prō ,gram }

test record [COMPUT SCI] A record within a test file. { 'test ,rek·ərd }

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test routine *See* check routine. { 'test rü,tēn }

test run [COMPUT SCI] The performance of a computer program to check that it is operating correctly, by using test data to generate results that can be compared with expected answers. { 'test ¦rən }

test set [ELECTR] A combination of instruments needed for servicing a particular type of electronic equipment. { 'test ,set }

test system [COMPUT SCI] **1.** A computer system that is being tested before being used for production work. **2.** A version of a computer system that is retained, even after a live system is in use, chiefly to diagnose problems without interfering with the work of the live system. { 'test ,sis·təm }

test under mask [COMPUT SCI] A procedure for checking the status of selected bits in a byte by comparing the byte with another byte in which these selected bits are set to one and the other bits are set to zero. { 'test ,ən·dər 'mask }

tetrode [ELECTR] A four-electrode electron tube containing an anode, a cathode, a control electrode, and one additional electrode that is ordinarily a grid. { 'te,trōd }

tetrode junction transistor *See* double-base junction transistor. { 'te,trōd 'jəŋk·shən tran,zis·tər }

tetrode thyratron [ELECTR] A thyratron with two control electrodes. Also known as gas tetrode. { 'te,trōd 'thī·rə,trän }

tetrode transistor [ELECTR] A four-electrode transistor, such as a tetrode point-contact transistor or double-base junction transistor. { 'te ,trōd tran'zis·tər }

TE wave *See* transverse electric wave. { ¦tē'ē ,wāv }

text [COMMUN] The part of a message that conveys information, excluding bits or characters needed to facilitate transmission of the message. { tekst }

text-editing system [COMPUT SCI] A computer program, together with associated hardware, for the on-line creation and modification of computer programs and ordinary text. { 'tekst ¦ed·əd·iŋ ,sis·təm }

text-to-speech synthesizer [ENG ACOUS] A voice response system that provides an automatic means to take a specification of any English text at the input and generate a natural and intelligible acoustic speech signal at the output by using complex sets of rules for predicting the needed phonemic states directly from the input message and dictionary pronunciations. { ¦tekst tə ¦spēch 'sin·thə,sīz·ər }

TFT *See* thin-film transistor.

thallofide cell [ELECTR] A photoconductive cell in which the active light-sensitive material is thallium oxysulfide in a vacuum; it has maximum response at the red end of the visible spectrum and in the near infrared. { 'thal·ə,fīd ,sel }

theater television [ELECTR] A large projection-type television receiver used in theaters, generally for closed-circuit showing of important sport events. { 'thē·ə·dər 'tel·ə,vizh·ən }

theoretical cutoff frequency [ELEC] Of an electric structure, a frequency at which, disregarding the effects of dissipation, the attenuation constant changes from zero to a positive value or vice versa. { ,thē·ə'red·ə·kəl 'kəd,ȯf ,frē·kwən·sē }

theory of games *See* game theory. { 'thē·ə·rē əv 'gāmz }

thermal agitation [SOLID STATE] Random movements of the free electrons in a conductor, producing noise signals that may become noticeable when they occur at the input of a high-gain amplifier. Also known as thermal effect. { 'thər·məl ,aj·ə'tād·shən }

thermal ammeter *See* hot-wire ammeter. { 'thər·məl 'am,ēd·ər }

thermal battery [ELEC] **1.** A combination of thermal cells. Also known as fused-electrolyte battery; heat-activated battery. **2.** A voltage source consisting of a number of bimetallic junctions connected to produce a voltage when heated by a flame. { 'thər·məl ¦bad·ə·rē }

thermal cell [ELEC] A reserve cell that is activated by applying heat to melt a solidified electrolyte. { 'thər·məl ¦sel }

thermal converter [ELECTR] A device that converts heat energy directly into electric energy by using the Seebeck effect; it is composed of at least two dissimilar materials, one junction of which is in contact with a heat source and the other junction of which is in contact with a heat sink. Also known as thermocouple converter; thermoelectric generator; thermoelectric power generator; thermoelement. [ENG] An instrument used with external resistors for ac current and voltage measurements over wide ranges, consisting of a conductor heated by an electric current, with one or more hot junctions of a thermocouple attached to it, so that the output emf responds to the temperature rise, and hence the current. { 'thər·məl kən'vərd·ər }

thermal cutout [ELEC] A heat-sensitive switch that automatically opens the circuit of an electric motor or other device when the operating temperature exceeds a safe value. { 'thər·məl 'kəd ,aůt }

thermal drift [ELECTR] Drift caused by internal heating of equipment during normal operation or by changes in external ambient temperature. { 'thər·məl 'drift }

thermal effect *See* thermal agitation. { 'thər·məl i'fekt }

thermal flasher [ELEC] An electric device that opens and closes a circuit automatically at regular intervals because of alternate heating and cooling of a bimetallic strip that is heated by a resistance element in series with the circuit being controlled. { 'thər·məl 'flash·ər }

thermal horsepower [ELEC] Electrical motor horsepower as determined by current readings from a thermal-type ammeter, will be higher than load horsepower determined from kilowatt-input methods. Also known as true motor load. { 'thər·məl 'hȯrs,paů·ər }

thermal imagery [ELECTR] Imagery produced by measuring and recording electronically the

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thermal radiation of objects. { 'thər·məl 'im·ij·rē }

thermal instrument [ENG] An instrument that depends on the heating effect of an electric current, such as a thermocouple or hot-wire instrument. { 'thər·məl 'in·strə·mənt }

thermal limit [ELEC] A limit on the power carried by an electric power system that results from the heating effects of the power carried by the devices. { 'thər·məl 'lim·ət }

thermal microphone [ENG ACOUS] Microphone depending for its action on the variation in the resistance of an electrically heated conductor that is being alternately increased and decreased in temperature by sound waves. { 'thər·məl 'mī·krə,fōn }

thermal noise [COMMUN] *See* Gaussian noise. [ELECTR] Electric noise produced by thermal agitation of electrons in conductors and semiconductors. Also known as Johnson noise; resistance noise. { 'thər·məl 'nȯiz }

thermal noise generator [ELECTR] A generator that uses the inherent thermal agitation of an electron tube to provide a calibrated noise source. { 'thər·məl ¦nȯiz ¸jen·ə,rād·ər }

thermal power plant [ENG] A facility to produce electric energy from thermal energy released by combustion of a fuel or consumption of a fissionable material. { 'thər·məl 'paù·ər ¸plant }

thermal regenerative cell [ELEC] Fuel-cell system in which the reactants are regenerated continuously from the products formed during the cell reaction. { 'thər·məl rē'jen·rəd·iv 'sel }

thermal relay [ELEC] A relay operated by the heat produced by current flow. { 'thər·məl 'rē,lā }

thermal resistance *See* effective thermal resistance. { 'thər·məl ri'zis·təns }

thermal resistor [ELEC] A resistor designed so its resistance varies in a known manner with changes in ambient temperature. { 'thər·məl ri'zis·tər }

thermal runaway [ELECTR] A condition that may occur in a power transistor when collector current increases collector junction temperature, reducing collector resistance and allowing a greater current to flow, which, in turn, increases the heating effect. { 'thər·məl 'rən·ə,wā }

thermal switch [ELEC] A temperature-controlled switch. Also known as thermoswitch. { 'thər·məl 'swich }

thermal tuning [ELEC] The process of changing the operating frequency of a system by using controlled thermal expansion to alter the geometry of the system. { 'thər·məl 'tün·iŋ }

thermal volt *See* kelvin. { 'thər·məl 'vōlt }

thermal wattmeter [ENG] A wattmeter in which thermocouples are used to measure the heating produced when a current is passed through a resistance. { 'thər·məl 'wät,mēd·ər }

thermion [ELECTR] A charged particle, either negative or positive, emitted by a heated body, as by the hot cathode of a thermionic tube. { ¦thərm'ī,ən }

thermionic [ELECTR] Pertaining to the emission of electrons as a result of heat. { ¸thər·mē'än·ik }

thermionic cathode *See* hot cathode. { ¸thər·mē'än·ik 'ka,thōd }

thermionic converter [ELECTR] A device in which heat energy is directly converted to electric energy; it has two electrodes, one of which is raised to a sufficiently high temperature to become a thermionic electron emitter, while the other, serving as an electron collector, is operated at a significantly lower temperature. Also known as thermionic generator; thermionic power generator; thermoelectric engine. { ¸thər·mē'än·ik kən'vərd·ər }

thermionic current [ELECTR] Current due to directed movements of thermions, such as the flow of emitted electrons from the cathode to the plate in a thermionic vacuum tube. { ¸thər·mē'än·ik 'kə·rənt }

thermionic detector [ELECTR] A detector using a hot-cathode tube. { ¸thər·mē'än·ik di'tek·tər }

thermionic diode [ELECTR] A diode electron tube having a heated cathode. { ¸thər·mē'än·ik 'dī ¸ōd }

thermionic emission [ELECTR] **1.** The outflow of electrons into vacuum from a heated electric conductor. Also known as Edison effect; Richardson effect. **2.** More broadly, the liberation of electrons or ions from a substance as a result of heat. { ¸thər·mē'än·ik i'mish·ən }

thermionic fuel cell [ELECTR] A thermionic converter in which the space between the electrodes is filled with cesium or other gas, which lowers the work functions of the electrodes, and creates an ionized atmosphere, controlling the electron space charge. { ¸thər·mē'än·ik 'fyül ¸sel }

thermionic generator *See* thermionic converter. { ¸thər·mē'än·ik 'jen·ə,rād·ər }

thermionic power generator *See* thermionic converter. { ¸thər·mē'än·ik 'paù·ər ¸jen·ə,rād·ər }

thermionics [ELECTR] The study and applications of thermionic emission. { ¸thər·mē'än·iks }

thermionic triode [ELECTR] A three-electrode thermionic tube, containing an anode, a cathode, and a control electrode. { ¸thər·mē'än·ik 'trī,ōd }

thermionic tube [ELECTR] An electron tube that relies upon thermally emitted electrons from a heated cathode for tube current. Also known as hot-cathode tube. { ¸thər·mē'än·ik 'tüb }

thermionic work function [ELECTR] Energy required to transfer an electron from the fermi energy in a given metal through the surface to the vacuum just outside the metal. { ¸thər·mē'än·ik 'wərk ¸fəŋk·shən }

thermistor [ELECTR] A resistive circuit component, having a high negative temperature coefficient of resistance, so that its resistance decreases as the temperature increases; it is a stable, compact, and rugged two-terminal ceramiclike semiconductor bead, rod, or disk. Derived from thermal resistor. { thər'mis·tər }

thermoammeter [ENG] An ammeter that is actuated by the voltage generated in a thermocouple through which is sent the current to be measured; used chiefly for measuring radio-frequency currents. Also known as electrothermal ammeter; thermocouple ammeter. { ¦thər·mō'am ¸ēd·ər }

thermocompression bonding [ENG] Use of a combination of heat and pressure to make

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connections, as when attaching beads to integrated-circuit chips; examples include wedge bonding and ball bonding. { ¦thər·mō·kəm' presh·ən 'bänd·iŋ }

thermocouple [ENG] A device consisting basically of two dissimilar conductors joined together at their ends; the thermoelectric voltage developed between the two junctions is proportional to the temperature difference between the junctions, so the device can be used to measure the temperature of one of the junctions when the other is held at a fixed, known temperature, or to convert radiant energy into electric energy. { 'thər·mə,kəp·əl }

thermocouple ammeter See thermoammeter. { 'thər·mə,kəp·əl 'am,ēd·ər }

thermocouple converter See thermal converter. { 'thər·mə,kəp·əl kən'vərd·ər }

thermoelectric converter [ELECTR] A converter that changes solar or other heat energy to electric energy; used as a power source on spacecraft. { ¦thər·mō·i'lek·trik kən'vərd·ər }

thermoelectric engine See thermionic converter. { ¦thər·mō·i'lek·trik 'en·jən }

thermoelectric generator See thermal converter. { ¦thər·mō·i'lek·trik 'jen·ə,rād·ər }

thermoelectric junction See thermojunction. { ¦thər·mō·i'lek·trik 'jəŋk·shən }

thermoelectric material [ELECTR] A material that can be used to convert thermal energy into electric energy or provide refrigeration directly from electric energy; good thermoelectric materials include lead telluride, germanium telluride, bismuth telluride, and cesium sulfide. { ¦thər·mō·i'lek·trik mə'tir·ē·əl }

thermoelectric power generator See thermal converter. { ¦thər·mō·i'lek·trik 'paù·ər ,jen·ə,rād·ər }

thermoelectric solar cell [ELECTR] A solar cell in which the sun's energy is first converted into heat by a sheet of metal, and the heat is converted into electricity by a semiconductor material sandwiched between the first metal sheet and a metal collector sheet. { ¦thər·mō·i'lek·trik 'sō·lər 'sel }

thermoelectromotive force [ELEC] Voltage developed due to differences in temperature between parts of a circuit containing two or more different metals. { ¦thər·mō·i¦lek·trə¦mōd·iv 'fōrs }

thermoelectron [ELECTR] An electron liberated by heat, as from a heated filament. Also known as negative thermion. { ¦thər·mō·i'lek,trän }

thermoelement See thermal converter. { ¦thər·mō'el·ə·mənt }

thermogalvanometer [ENG] Instrument for measuring small high-frequency currents by their heating effect, generally consisting of a direct-current galvanometer connected to a thermocouple that is heated by a filament carrying the current to be measured. { ¦thər·mō·gal·və'näm·əd·ər }

thermojunction [ELECTR] One of the surfaces of contact between the two conductors of a thermocouple. Also known as thermoelectric junction. { ¦thər·mō'jəŋk·shən }

thermojunction battery [ELEC] Nuclear-type battery which converts heat into electrical energy directly by the thermoelectric or Seebeck effect. { ¦thər·mō'jəŋk·shən 'bad·ə·rē }

thermomigration [ELECTR] A technique for doping semiconductors in which exact amounts of known impurities are made to migrate from the cool side of a wafer of pure semiconductor material to the hotter side when the wafer is heated in an oven. { ¦thər·mō·mī'grā·shən }

thermopile [ENG] An array of thermocouples connected either in series to give higher voltage output or in parallel to give higher current output, used for measuring temperature or radiant energy or for converting radiant energy into electric power. { 'thər·mə,pīl }

thermopile generator [ELEC] An electricity source powered by the heating of an electrical resistor that can be connected to a thermopile to generate small amounts of electric current. { 'thər·mə,pīl 'jen·ə,rād·ər }

thermoplastic recording [ELECTR] A recording process in which a modulated electron beam deposits charges on a thermoplastic film, and application of heat by radio-frequency heating electrodes softens the film enough to produce deformation that is proportional to the density of the stored electrostatic charges; an optical system is used for playback. { ¦thər·mə¦plas·tik ri'kȯrd·iŋ }

thermopower [ELEC] A measure of the temperature-induced voltage in a conductor. { 'thər·mə,paù·ər }

thermoregulator [ENG] A high-accuracy or high-sensitivity thermostat; one type consists of a mercury-in-glass thermometer with sealed-in electrodes, in which the rising and falling column of mercury makes and breaks an electric circuit. { ¦thər·mō'reg·yə,lād·ər }

thermorelay See thermostat. { ¦thər·mō'rē,lā }

thermostat [ENG] An instrument which measures changes in temperature and directly or indirectly controls sources of heating and cooling to maintain a desired temperature. Also known as thermorelay. { 'thər·mə,stat }

thermostatic switch [ELEC] A temperature-operated switch that receives its operating energy by thermal conduction or convection from the device being controlled or operated. { ¦thər·mə ¦stad·ik 'swich }

thermoswitch See thermal switch. { 'thər·mə ,swich }

thermovoltmeter [ENG] A voltmeter in which a current from the voltage source is passed through a resistor and a fine vacuum-enclosed platinum heater wire; a thermocouple, attached to the midpoint of the heater, generates a voltage of a few millivolts, and this voltage is measured by a direct-current millivoltmeter. { ¦thər·mō 'vōlt ,mēd·ər }

Thévenin equivalent circuit [ELEC] An equivalent circuit that consists of a series connection of a voltage source and a two-terminal circuit, where the voltage source is usually dependent on

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the electric signals applied to the input terminals. { tā·vō¦na i,kwiv·ə·lənt 'sər·kət }

Thévenin generator [ELEC] The voltage generator in the equivalent circuit of Thévenin's theorem. { tā·vó'na ¡jen·ə,rād·ər }

Thévenin's theorem [ELEC] A theorem in network problems which allows calculation of the performance of a device from its terminal properties only: the theorem states that at any given frequency the current flowing in any impedance, connected to two terminals of a linear bilateral network containing generators of the same frequency, is equal to the current flowing in the same impedance when it is connected to a voltage generator whose generated voltage is the voltage at the terminals in question with the impedance removed, and whose series impedance is the impedance of the network looking back from the terminals into the network with all generators replaced by their internal impedances. Also known as Helmholtz's theorem. { tā·vó'naz ¡thir·əm }

thick-film capacitor [ELEC] A capacitor in a thick-film circuit, made by successive screen-printing and firing processes. { 'thik ¦film kə 'pas·əd·ər }

thick-film circuit [ELECTR] A microcircuit in which passive components, of a ceramic-metal composition, are formed on a ceramic substrate by successive screen-printing and firing processes, and discrete active elements are attached separately. { 'thik ¦film 'sər'kət }

thick-film hybrid [ELECTR] An assembly consisting of a thick-film circuit pattern with mounting positions for the insertion of conventional silicon devices. { ¡thik ¡film 'hī·brəd }

thick-film resistor [ELEC] Fixed resistor whose resistance element is a film well over 0.001 inch (25 micrometers) thick. { 'thik ¦film ri'zis·tər }

thimble [COMPUT SCI] A cone-shaped, rotating printing element on an impact printer having character slugs around the perimeter and a hammer that drives the appropriate slug forward to print the impression on paper. { 'thim·bəl }

thin film [ELECTR] A film a few molecules thick deposited on a glass, ceramic, or semiconductor substrate to form a capacitor, resistor, coil, cryotron, or other circuit component. { 'thin 'film }

thin-film capacitor [ELEC] A capacitor that can be constructed by evaporation of conductor and dielectric films in sequence on a substrate; silicon monoxide is generally used as the dielectric. { 'thin ¦film kə'pas·əd·ər }

thin-film circuit [ELECTR] A circuit in which the passive components and conductors are produced as films on a substrate by evaporation or sputtering; active components may be similarly produced or mounted separately. { 'thin ¦film 'sər·kət }

thin-film cryotron [ELECTR] A cryotron in which the transition from superconducting to normal resistivity of a thin film of tin or indium, serving as a gate, is controlled by current in a film of lead that crosses and is insulated from the gate. { 'thin ¦film 'krī·ə,trän }

thin-film field-emitter cathode [ELECTR] A sharply pointed microminiature electron field emitter with an integral low-voltage extraction gate. { ¦thin ¡film ¦fēld i,mid·ər 'kath,ōd }

thin-film integrated circuit [ELECTR] An integrated circuit consisting entirely of thin films deposited in a patterned relationship on a substrate. { 'thin ¦film 'int·ə,grād·əd 'sər·kət }

thin-film material [ELECTR] A material that can be deposited as a thin film in a desired pattern by a variety of chemical, mechanical, or high-vacuum evaporation techniques. { 'thin ¦film mə'tir·ē·əl }

thin-film memory See thin-film storage. { 'thin ¦film 'mem·rē }

thin-film resistor [ELEC] A fixed resistor whose resistance element is a metal, alloy, carbon, or other film having a thickness of about 0.000001 inch (25 nanometers). { 'thin ¦film ri'zis·tər }

thin-film semiconductor [ELECTR] Semiconductor produced by the deposition of an appropriate single-crystal layer on a suitable insulator. { 'thin ¦film 'sem·i·kən,dək·tər }

thin-film solar cell [ELECTR] A solar cell in which a thin film of gallium arsenide, cadmium sulfide, or other semiconductor material is evaporated on a thin, flexible metal or plastic substrate; the rather low efficiency (about 2%) is compensated by the flexibility and light weight, making these cells attractive as power sources for spacecraft. { 'thin ¦film 'sō·lər 'sel }

thin-film storage [COMPUT SCI] A high-speed storage device that is fabricated by depositing layers, one molecule thick, of various materials which, after etching, provide microscopic circuits which can move and store data in small amounts of time. Also known as thin-film memory. { 'thin ¦film 'stȯr·ij }

thin-film transistor [ELECTR] A field-effect transistor constructed entirely by thin-film techniques, for use in thin-film circuits. Abbreviated TFT. { 'thin ¦film tran'zis·tər }

think time [COMPUT SCI] Idle time between time intervals in which transmission takes place in a real-time system. { 'thiŋk ¡tīm }

thin list See loose list. { 'thin 'list }

third-generation computer [COMPUT SCI] One of the general purpose digital computers introduced in the late 1960s; it is characterized by integrated circuits and has logical organization and software which permit the computer to handle many programs at the same time, allow one to add or remove units from the computer, permit some or all input/output operations to occur at sites remote from the main processor, and allow conversational programming techniques. { 'thərd ¡jen·ə¦rā·shən kəm'pyüd·ər }

Thomson bridge See Kelvin bridge. { 'täm·sən ¡brij }

thoriated emitter See thoriated tungsten filament. { 'thȯr·ē,ād·əd i'mid·ər }

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thoriated tungsten filament [ELECTR] A vacuum-tube filament consisting of tungsten mixed with a small quantity of thorium oxide to give improved electron emission. Also known as thoriated emitter. { 'thȯr-ē,ād-əd ¦təŋ-stən 'fil-ə-mənt }

thrashing [COMPUT SCI] An undesirable condition in a multiprogramming system, due to overcommitment of main memory, in which the various tasks compete for pages and none can operate efficiently. { 'thrash-iŋ }

thread [COMPUT SCI] A sequence of beads that are strung together. { thred }

threat [COMPUT SCI] An event that can cause harm to computers, to their data or programs, or to computations. { thret }

three-address code [COMPUT SCI] In computers, a multiple-address code which includes three addresses, usually two addresses from which data are taken and one address where the result is entered; location of the next instruction is not specified, and instructions are taken from storage in preassigned order. { 'thrē 'ad,res ,kōd }

three-address instruction [COMPUT SCI] In computers, an instruction which includes an operation and specifies the location of three registers. { 'thrē ¦ad,res in'strək-shən }

three-dimensional display system [ELECTR] A radar display showing range, azimuth, and elevation simultaneously. { 'thrē di¦men-chən-əl di'splā ,sis-təm }

three-dimensional sound *See* virtual acoustics. { ¦thrē də¦men-shən-əl 'saůnd }

three-input adder *See* full adder. { 'thrē ¦in,půt 'ad-ər }

three-input subtracter *See* full subtracter. { 'thrē ¦in,půt səb'trak-tər }

three-junction transistor [ELECTR] A *pnpn* transistor having three junctions and four regions of alternating conductivity; the emitter connection may be made to the *p* region at the left, the base connection to the adjacent *n* region, and the collector connection to the *n* region at the right, while the remaining *p* region is allowed to float. { 'thrē ¦jəŋk-shən tran'zis-tər }

three-layer diode [ELECTR] A junction diode with three conductivity regions. { 'thrē ¦lā-ər 'dī,ōd }

three-level subroutine [COMPUT SCI] A subroutine in which a second subroutine is called, and a third subroutine is called by the second subroutine. { 'thrē ¦lev-əl 'səb-rü,tēn }

three-phase circuit [ELEC] A circuit energized by alternating-current voltages that differ in phase by one-third of a cycle or 120°. { 'thrē ¦fāz 'sər-kət }

three-phase current [ELEC] Current delivered through three wires, with each wire serving as the return for the other two and with the three current components differing in phase successively by one-third cycle, or 120 electrical degrees. { 'thrē ¦fāz 'kə-rənt }

three-phase four-wire system [ELEC] System of alternating-current supply comprising four conductors, three of which are connected as in a three-phase, three-wire system, the fourth being connected to the neutral point of the supply, which may be grounded. { 'thrē ¦fāz 'fór ¦wīr 'sis-təm }

three-phase magnetic amplifier [ELECTR] A magnetic amplifier whose input is the sum of three alternating-current voltages that differ in phase by 120°. { 'thrē ¦fāz mag'ned-ik 'am-plə,fī-ər }

three-phase motor [ELEC] An alternating-current motor operated from a three-phase circuit. { 'thrē ,fāz 'mōd-ər }

three-phase rectifier [ELEC] A rectifier supplied by three alternating-current voltages that differ in phase by one-third of a cycle or 120°. { 'thrē ¦fāz 'rek-tə,fī-ər }

three-phase seven-wire system [ELEC] System of alternating-current supply from groups of three single-phase transformers connected in Y to obtain a three-phase, four-wire grounded neutral system of higher voltage for power, the neutral wire being common to both systems. { 'thrē ¦fāz 'sev-ən ¦wīr 'sis-təm }

three-phase three-wire system [ELEC] System of alternating-current supply comprising three conductors between successive pairs of which are maintained alternating differences of potential successively displaced in phase by one-third cycle. { 'thrē ¦fāz 'thrē ¦wīr 'sis-təm }

three-phase transformer [ELEC] A transformer used in a three-phase circuit, with three sets of primary and secondary windings on a single core. { 'thrē ,fāz tranz'fór-mər }

three-plus-one address [COMPUT SCI] An instruction format containing an operation code, three operand address parts, and a control address. { 'thrē ,pləs ¦wən 'ad,res }

three-pulse canceler [ELECTR] A moving-target indicator technique in which two "two-pulse cancelers" are cascaded together, improving the velocity response by widening the rejection around zero Doppler and, unavoidably, around each associated ambiguity. { 'thrē ¦pəls 'kan-slər }

three-pulse cascaded canceler [ELECTR] A moving-target indicator technique in which two "two-pulse cancelers" are cascaded together; this improves the velocity response. { 'thrē ¦pəls kas'kād-əd 'kan-slər }

three-way switch [ELEC] An electric switch with three terminals used to control a circuit from two different points. { 'thrē ¦wā 'swich }

three-wire generator [ELEC] Electric generator with a balance coil connected across the armature, the midpoint of the coil providing the potential of the neutral wire in a three-wire system. { 'thrē ¦wir 'jen-ə,rād-ər }

three-wire system [ELEC] System of electric supply comprising three conductors, one of which (known as the neutral wire) is maintained at a potential midway between the potential of the other two (referred to as the outer conductors); part of the load may be connected directly between the outer conductors, the remainder being divided as evenly as possible into two parts, each of which is connected between the neutral and one outer conductor; there are thus two distinct supply voltages, one being twice the other. { 'thrē ¦wir 'sis-təm }

threshold [ELECTR] In a modulation system, the smallest value of carrier-to-noise ratio at the input to the demodulator for all values above which a small percentage change in the input carrier-to-noise ratio produces a substantially equal or smaller percentage change in the output signal-to-noise-ratio. [ENG] The least value of a current, voltage, or other quantity that produces the minimum detectable response in an instrument or system. { 'thresh,hōld }

threshold element [COMPUT SCI] A logic circuit which has one output and several weighted inputs, and whose output is energized if and only if the sum of the weights of the energized inputs exceeds a prescribed threshold value. { 'thresh ,hōld ,el·ə·mənt }

threshold frequency [ELECTR] The frequency of incident radiant energy below which there is no photoemissive effect. { 'thresh,hōld ,frē·kwən·sē }

thresholding [COMPUT SCI] In machine vision, the comparison of an element's brightness or other characteristic with a set value or threshold. { 'thresh,hōld·iŋ }

threshold signal [ELECTROMAG] A received radio signal (or radar echo) whose power is just above the noise level of the receiver. Also known as minimum detectable signal. { 'thresh,hōld ,sig·nəl }

threshold switch [ELECTR] A voltage-sensitive alternating-current switch made from a semiconductor material deposited on a metal substrate; when the alternating-current voltage acting on the switch is increased above the threshold value, the number of free carriers present in the semiconductor material increases suddenly, and the switch changes from a high resistance of about 10 megohms to a low resistance of less than 1 ohm; in other versions of this switch, the threshold voltage is controlled by heat, pressure, light, or moisture. { 'thresh,hōld ,swich }

threshold value [COMPUT SCI] A point beyond which there is a change in the manner a program executes; in particular, an error rate above which the operating system shuts down the computer system on the assumption that a hardware failure has occurred. [CONT SYS] The minimum input that produces a corrective action in an automatic control system. { 'thresh,hōld ,val·yü }

threshold voltage [ELECTR] **1.** In general, the voltage at which a particular characteristic of an electronic device first appears. **2.** The voltage at which conduction of current begins in a *pn* junction. **3.** The voltage at which channel formation occurs in a metal oxide semiconductor field-effect transistor. **4.** The voltage at which a solid-state lamp begins to emit light. { 'thresh,hōld ,vōl·tij }

throttling [CONT SYS] Control by means of intermediate steps between full on and full off. { 'thräd·əl·iŋ }

throughput [COMMUN] A measure of the effective rate of transmission of data by a communications system. [COMPUT SCI] The productivity of a data-processing system, as expressed in computing work per minute or hour. { 'thrü,püt }

through repeater [ELECTR] Microwave repeater that is not equipped to provide for connections to any local facilities other than the service channel. { 'thrü ri,pēd·ər }

throw-away device [ELECTR] An electronic component that is not serviced and is discarded and replaced upon failure. { 'thrō ə,wā di,vīs }

thump [ENG ACOUS] Low-frequency transient disturbance in a system or transducer characterized audibly by the vocal imitation of the word. { thəmp }

thunk [COMPUT SCI] An additional subprogram created by the compiler to represent the evaluation of the argument of an expression in the call-by-name procedure. { thəŋk }

thyratron [ELECTR] A hot-cathode gas tube in which one or more control electrodes initiate but do not limit the anode current except under certain operating conditions. Also known as hot-cathode gas-filled tube. { 'thī·rə,trän }

thyratron gate [ELECTR] In computers, an AND gate consisting of a multielement gas-filled tube in which conduction is initiated by the coincident application of two or more signals; conduction may continue after one or more of the initiating signals are removed. { 'thī·rə,trän ,gāt }

thyratron inverter [ELECTR] An inverter circuit that uses thyratrons to convert direct-current power to alternating-current power. { 'thī·rə ,trän in,vərd·ər }

thyrector [ELECTR] Silicon diode that acts as an insulator up to its rated voltage, and as a conductor above rated voltage; used for alternating-current surge voltage protection. { thī'rek·tər }

thyristor [ELECTR] A transistor having a thyratronlike characteristic; as collector current is increased to a critical value, the alpha of the unit rises above unity to give high-speed triggering action. { thī'ris·tər }

tick [COMMUN] A pulse broadcast at 1-second intervals by standard frequency- and time-broadcasting stations to indicate the exact time. [COMPUT SCI] A time interval equal to $\frac{1}{60}$ second, used primarily in discussing computer operations. { tik }

tickler coil [ELECTR] Small coil connected in series with the plate circuit of an electron tube and inductively coupled to a grid-circuit coil to establish feedback or regeneration in a radio circuit; used chiefly in regenerative detector circuits. { 'tik·lər ,kȯil }

tie [ELEC] **1.** Electrical connection or strap. **2.** See tie wire. { tī }

tie cable [ELEC] **1.** Cable between two distributing frames or distributing points. **2.** Cable between two private branch exchanges. **3.** Cable between a private branch exchange switchboard and main office. **4.** Cable connecting two other cables. { 'tī ,kā·bəl }

tie line [COMMUN] **1.** A leased communication channel or circuit. **2.** See data link. { 'tī ,līn }

tie point [ELEC] Insulated terminal to which two or more wires may be connected. { 'tī ,point }

tie trunk [ELEC] Telephone line or channel directly connecting two private branch exchanges. { 'tī ,trəŋk }

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tie wire [ELEC] A short piece of wire used to tie an open-line wire to an insulator. Also known as tie. { 'tī ,wīr }

TIF *See* telephone influence factor.

TIFF *See* tag image file format. { tif }

tight coupling *See* close coupling. { 'tīt 'kəp·liŋ }

tightly coupled computer [COMPUT SCI] A computer linked to another computer in a manner that requires both computers to function as a single unit. { 'tīt·lē ¦kəp·əld kəm'pyüd·ər }

tile painting [COMPUT SCI] **1.** The use of patterns to create shadings that fill shapes and areas on a monochrome display. **2.** The use of very small dots of two or more colors to make blends or shades that fill shapes and areas on a color display. { 'tīl ,pānt·iŋ }

tiling [COMPUT SCI] Dividing an electronic display into two or more nonoverlapping areas that display the outputs of different programs being run concurrently on a computer. { 'tī·liŋ }

time assignment speech interpolation [COMMUN] Modulation technique based on the fact that speech is never a continuous stream of information, but consists of a large number of short signals; therefore, the period between the speech signals is used for transmitting other data including additional speech signals. { 'tīm ə¦sīn·mənt 'spēch ,in·tər·pə,lā·shən }

time base [ELECTR] A device which moves the fluorescent spot rhythmically across the screen of the cathode-ray tube. { 'tīm ,bās }

time-base generator *See* sweep generator. { 'tīm ¦bās ,jen·ə,rād·ər }

time-code generator [ELECTR] A crystal-controlled pulse generator that produces a train of pulses with various predetermined widths and spacings, from which the time of day and sometimes also day of year can be determined; used in telemetry and other data-acquisition systems to provide the precise time of each event. { 'tīm ¦kōd ,jen·ə ,rā·dər }

time-controlled system *See* clock control system. { 'tīm kən¦trōld ,sis·təm }

time-current characteristics [ELEC] Of a fuse, the relation between the root-mean-square alternating current or direct current and the time for the fuse to perform the whole or some specified part of its interrupting function. { 'tīm 'kə·rənt ,kar·ik·tə,ris·tiks }

time-delay circuit [ELECTR] A circuit in which the output signal is delayed by a specified time interval with respect to the input signal. Also known as delay circuit. { 'tīm di¦lā ,sər·kət }

time-delay fuse [ELEC] A fuse in which the burnout action depends on the time it takes for the overcurrent heat to build up in the fuse and melt the fuse element. { 'tīm di¦lā ,fyüz }

time-delay relay [ELEC] A relay in which there is an appreciable interval of time between energizing or deenergizing of the coil and movement of the armature, such as a slow-acting relay and a slow-release relay. { 'tīm di¦lā ,rē,lā }

time-derived channel [COMMUN] Any of the channels which result from time-division multiplexing of a channel. { 'tīm di¦rīvd ,chan·əl }

time-division data links [COMMUN] Radio communications which use time-division techniques for channel separation. { 'tīm di,vizh·ən 'dad·ə ,liŋks }

time-division multiple access [COMMUN] A technique that allows multiple users who are geographically dispersed to gain access to a communications channel, by permitting each user access to the full pass-band of the channel for a limited time, after which the access right is assigned to another user. Abbreviated TDMA. { ¦tīm də ,vizh·ən ,məl·tə·pəl 'ak,ses }

time-division multiplexing [COMMUN] A process for transmitting two or more signals over a common path by using successive time intervals for different signals. Also known as time multiplexing. Abbreviated TDM. [COMPUT SCI] The interleaving of bits or characters in time to compensate for the slowness of input devices as compared to data transmission lines. { 'tīm di ¦vizh·ən ,məl·tə,pleks·iŋ }

time-division multiplier *See* mark-space multiplier. { 'tīm di¦vizh·ən ,məl·tə,plī·ər }

time-division switching system [ELECTR] A type of electronic switching system in which input signals on lines and trunks are sampled periodically, and each active input is associated with the desired output for a specific phase of the period. { 'tīm di¦vizh·ən 'swich·iŋ ,sis·təm }

time-domain reflectometer [ELECTR] An instrument that measures the electrical characteristics of wideband transmission systems, subassemblies, components, and lines by feeding in a voltage step and displaying the superimposed reflected signals on an oscilloscope equipped with a suitable time-base generator. Abbreviated TDR. { 'tīm dō¦mān ,rē,flek'täm·əd·ər }

time factor *See* time scale. { 'tīm ,fak·tər }

time gate [ELECTR] A circuit that gives an output only during chosen time intervals. { 'tīm ,gāt }

time-height section [ELECTR] A facsimile trace of a vertically directed radar; specifically, a cloud-detection radar. { 'tīm 'hīt ,sek·shən }

time hopping [COMMUN] A spread spectrum technique, usually used in combination with other methods, in which the transmitted pulse occurs in a manner determined by a pseudorandom code which places the pulse in one of several possible positions per frame. { 'tīm ,häp·iŋ }

time-invariant system [CONT SYS] A system in which all quantities governing the system's behavior remain constant with time, so that the system's response to a given input does not depend on the time it is applied. { 'tīm in,ver·ē·ənt ,sis·təm }

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time-mark generator [ELECTR] A signal generator that produces highly accurate clock pulses which can be superimposed as pips on a cathode-ray screen for timing the events shown on the display. { 'tīm ¦märk ˌjen·ə·rād·ər }

time modulation [COMMUN] Modulation in which the time of occurrence of a definite portion of a waveform is varied in accordance with a modulating signal. { 'tīm ˌmäj·əˌlā·shən }

time multiplexing *See* multiprogramming time-division multiplexing. { 'tīm ˌməl·təˌpleks·iŋ }

time-of-day clock [COMPUT SCI] An electronic device that registers the actual time, generally accurate to 0.1 second, through a 24-hour cycle, and transmits its reading to the central processing unit of a computer upon demand. { ¦tīm əv ¦dā ˌkläk }

time of delivery [COMMUN] The time at which the addressee or responsible relay agency provides a receipt for a message. { 'tīm əv di'liv·ə·rē }

time of origin [COMMUN] The time at which a message is released for transmission. { 'tīm əv 'är·ə·jən }

time of receipt [COMMUN] The time at which a receiving station completes reception of a message. { 'tīm əv ri'sēt }

time-pulse distributor [ELECTR] A device or circuit for allocating timing pulses or clock pulses to one or more conducting paths or control lines in specified sequence. { 'tīm ˌpəls diˌstrib·yəd·ər }

time quantum *See* time slice. { 'tīm ˌkwän·təm }

timer [COMPUT SCI] A hardware device that can interrupt a computer program after a time interval specified by the program, generally to remind the program to take some action. [ELECTR] A circuit used in radar and in electronic navigation systems to start pulse transmission and synchronize it with other actions, such as the start of a cathode-ray sweep. { 'tīm·ər }

timer clock [COMPUT SCI] An electronic device in the central processing unit of a computer which times events that occur during the operation of the system in order to carry out such functions as changing computer time, detecting looping and similar error conditions, and keeping a log of operations. { 'tī·mər ˌkläk }

time redundancy [COMPUT SCI] Performing a computation more than once and checking the results in order to increase reliability. { 'tīm ri ˌdən·dən·sē }

time scale [COMPUT SCI] The ratio of the time duration of an event as simulated by an analog computer to the actual time duration of the event in the physical system under study. Also known as time factor. { 'tīm ˌskāl }

time-share [COMPUT SCI] To perform several independent processes almost simultaneously by interleaving the operations of the processes on a single high-speed processor. { 'tīm ˌsher }

time-shared amplifier [ELECTR] An amplifier used with a synchronous switch to amplify signals from different sources one after another. { 'tīm ¦sherd ˌam·pləˌfī·ər }

time-sharing [COMPUT SCI] The simultaneous utilization of a computer system from multiple terminals. { 'tīm ˌsher·iŋ }

time signal [COMMUN] An accurate signal which is broadcast by radio and marks a specified time or time interval, used for setting timepieces and for determining their errors; in particular, a radio signal broadcast at accurately known times each day on a number of different frequencies by WWV and other stations. { 'tīm ˌsig·nəl }

time signal service [COMMUN] Radio communications service for the transmission of time signals of stated high precision, intended for general reception. { 'tīmd 'sig·nəl ˌsər·vəs }

time slice [COMPUT SCI] A time interval during which a time-sharing system is processing one particular computer program. Also known as time quantum. { 'tīm ˌslīs }

time-stamp [COMMUN] A term that indicates the time of a specific action such as the arrival of a byte or the presentation of a presentation unit. { 'tīm ˌstamp }

time switch [ENG] A clock-controlled switch used to open or close a circuit at one or more predetermined times. { 'tīm ˌswich }

time-varying system [CONT SYS] A system in which certain quantities governing the system's behavior change with time, so that the system will respond differently to the same input at different times. { 'tīm ¦ver·ē·iŋ ˌsis·təm }

timing-axis oscillator *See* sweep generator. { 'tīm·iŋ ˌak·səs ˌäs·əˌlād·ər }

timing circuit *See* clock. { 'tīm·iŋ ˌsər·kət }

timing error [COMPUT SCI] An error made in planning or writing a computer program, usually in underestimating the time that will be taken by input/output or other operations, which causes unnecessary delays in the execution of the program. { 'tīm·iŋ ˌer·ər }

timing loop [COMPUT SCI] A set of instructions in a computer program whose execution time is known and whose only function is to cause a delay in processing by causing the loop to be executed an appropriate number of times. { 'tīm·iŋ ˌlüp }

timing motor [ELEC] A motor which operates from an alternating-current power system synchronously with the alternating-current frequency, used in timing and clock mechanisms. Also known as clock motor. { 'tīm·iŋ ˌmōd·ər }

timing relay [ELEC] Form of auxiliary relay used to introduce a definite time delay in the performance of a function. { 'tīm·iŋ ˌrēˌlā }

timing signal [COMPUT SCI] A pulse generated by the clock of a digital computer to provide synchronization of its activities. [ELECTR] Any signal recorded simultaneously with data on magnetic tape for use in identifying the exact time of each recorded event. { 'tīm·iŋ ˌsig·nəl }

tinsel cord [ELEC] A highly flexible cord used for headphone leads and test leads, in which the conductors are strips of thin metal foil or tinsel wound around a strong but flexible central cord. { 'tin·səl ˌkȯrd }

tip [ELEC] The contacting part at the end of a phone plug. [ELECTR] A small protuberance on the envelope of an electron tube, resulting from the closing of the envelope after evacuation. { tip }

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tip jack [ELEC] A small single-hole jack for a single-pin contact plug. Also known as pup jack. { 'tip ˌjak }

tip side [ELEC] Conductor of a circuit which is associated with the tip of a plug or the top spring of a jack; by extension, it is common practice to designate by these terms the conductors having similar functions or arrangements in circuits where plugs or jacks may not be involved. { 'tip ˌsīd }

Tirrill regulator [ELEC] A device for regulating the voltage of a generator, in which the field resistance of the exciter is short-circuited temporarily when the voltage drops. { 'tir·əl ˌreg·yəˌlād·ər }

title bar [COMPUT SCI] An area at the top of a window that contains the name of the file or application in the window. { 'tīd·əl ˌbär }

T junction [ELECTR] A network of waveguides with three waveguide terminals arranged in the form of a letter T; in a rectangular waveguide a symmetrical T junction is arranged by having either all three broadsides in one plane or two broadsides in one plane and the third in a perpendicular plane. { 'tē ˌjəŋk·shən }

T^2L *See* transistor-transistor logic.

T1 line [COMMUN] High-speed digital connection that transmits data at 1.5 million bits per second through the telephone-switching network. { ˌtē'wən ˌlīn }

T3 line [COMMUN] High-speed digital connection that transmits data at 45 million bits per second through the telephone-switching network. { ˌtē'thrē ˌlīn }

TM mode *See* transverse magnetic mode. { ˌtē'em ˌmōd }

TM wave *See* transverse magnetic wave. { ˌtē'em ˌwāv }

T network [ELEC] A network composed of three branches, with one end of each branch connected to a common junction point, and with the three remaining ends connected to an input terminal, an output terminal, and a common input and output terminal, respectively. { 'tē ˌnetˌwərk }

Toepler-Holtz machine [ELEC] An early type of machine for continuously producing electrical charges at high voltage by electrostatic induction, superseded by the Wimhurst machine. Also known as Holtz machine. { 'tep·lər 'hōlts məˌshēn }

toggle [COMPUT SCI] **1.** To switch back and forth between two stable states or modes of operation. **2.** A hardware or software device that carries out this switching action. [ELECTR] To switch over to an alternate state, as in a flip-flop. { 'täg·əl }

toggle condition [ELECTR] Condition of a flip-flop circuit in which the internal state of the flip-flop changes from 0 to 1 or from 1 to 0. { 'täg·əl kənˌdish·ən }

toggle switch [ELEC] A small switch that is operated by manipulation of a projecting lever that is combined with a spring to provide a snap action for opening or closing a circuit quickly. [ELECTR] An electronically operated circuit that holds either of two states until changed. { 'täg·əl ˌswich }

token [COMMUN] A unique grouping of bits that is transmitted as a unit in a communications network and used as a signal to notify stations in the network when they have control and are free to send information or take other specified actions. [COMPUT SCI] **1.** A distinguishable unit in a sequence of characters. **2.** A single byte that is used to represent a keyword in a programming language in order to conserve storage space. **3.** A physical object, such as a badge or identity card, issued to authorized users of a computing system, building, or area. { 'tō·kən }

tokenization [COMPUT SCI] The conversion of keywords of a programming language to tokens in order to conserve storage space. { ˌtō·kən·ə'zā·shən }

token-passing protocol [COMMUN] The assignment of data communications channels to units which communicate according to a fixed priority sequence. { 'tō·kən ˌpas·iŋ 'prōd·əˌkȯl }

token-sharing network [COMMUN] A communications network in which all the stations are linked to a common bus and control is determined by a group of bits (token) that is passed along the bus from station to station. { 'tō·kən ˌsher·iŋ 'netˌwərk }

toll [COMMUN] **1.** Charge made for a connection beyond an exchange boundary. **2.** Any part of telephone plant, circuits, or services for which toll charges are made. { tōl }

toll call [COMMUN] Telephone call to points beyond the area within which telephone calls are covered by a flat monthly rate or are charged for on a message unit basis. { 'tōl ˌkȯl }

toll center [COMMUN] A telephone central office where trunks from end offices are joined to the long-distance system, and operators are present; it is a class-4 office. { 'tōl ˌsen·tər }

toll line [COMMUN] A telephone line or channel that connects different telephone exchanges. { 'tōl ˌlīn }

toll office [COMMUN] A telephone central office which serves mainly to terminate and interconnect toll lines and various types of trunks. { 'tōl ˌȯf·əs }

toll terminal loss [COMMUN] The part of the overall transmission loss on a toll connection that is attributable to the facilities from the toll center through the tributary office, to and including the subscriber's equipment. { 'tōl 'tər·mən·əl ˌlȯs }

Tolman and Stewart effect [ELEC] The development of negative charge at the forward end of a metal rod which is suddenly stopped after rapid longitudinal motion. { ˌtäl·mən ən 'stü·ərt iˌfekt }

tomography *See* sectional radiography. { tə'mäg·rə·fē }

tone control [ELECTR] A control used in an audio-frequency amplifier to change the frequency response so as to secure the most pleasing proportion of bass to treble; individual bass and treble controls are provided in some amplifiers. { 'tōn kənˌtrōl }

tone dialing *See* push-button dialing. { 'tōn ˌdīl·iŋ }

tone generator [ELECTR] A signal generator used to generate an audio-frequency signal suitable for signaling purposes or for testing audio-frequency equipment. { 'tōn ˌjen·əˌrād·ər }

tone-modulated waves [COMMUN] Waves obtained from continuous waves by amplitude-modulating them at audio frequency in a substantially periodic manner. { 'tōn ˌmäj·əˌlād·əd ˌwāvz }

tone modulation [COMMUN] Type of code-signal transmission obtained by causing the radio-frequency carrier amplitude to vary at a fixed audio frequency. { 'tōn ˌmäj·əˌlā·shən }

tone-only pager [COMMUN] A receiver in a radio paging system that alerts the user to call a specific telephone number. { 'tōn ˌon·lē 'pāj·ər }

tone-operated net-loss adjuster [COMMUN] System for stabilizing the net loss of a telephone circuit by a tone transmitted between conversations. { 'tōn ˌäp·əˌrād·əd 'net ˌlȯsəˌjəs·tər }

tone reversal [COMMUN] Distortion of the recorder copy in facsimile which causes the various shades of black and white not to be in the proper order. { 'tōn riˌvər·səl }

toolbar [COMPUT SCI] A row or column of on-screen push buttons containing icons that represent frequently accessed commands. {'tülˌbär}

top-down analysis [COMPUT SCI] A predictive method of syntactic analysis which, starting from the root symbol, attempts to predict the means by which a string was generated. { ˌtäp ˌdaün əˈnal·ə·səs }

top-loaded vertical antenna [ELECTROMAG] Vertical antenna constructed so that, because of its greater size at the top, there results modified current distribution, giving a more desirable radiation pattern in the vertical plane. { ˌtäp ˌlōd·əd 'vərd·ə·kəl anˈten·ə }

topological shielding [ELEC] An optimal lightning protection system in which a series of shields (such as a building's sheet metal or a metal cabinet), each one surrounding the next, are connected so that deleterious voltage and power levels are reduced at each successive inner shield. { ˌtäp·əˌläj·ə·kəl 'shēld·iŋ }

topology [COMPUT SCI] The physical or logical arrangement of the stations (nodes) in a communications network. { təˈpäl·ə·jē }

topology of circuits [ELEC] The study of electric networks in terms of the geometry of their connections only; used in finding such properties of circuits as equivalence and duality, and in analyzing and synthesizing complex circuits. { təˈpäl·ə·jē əv 'sər·kəts }

tornadotron [ELECTR] Millimeter-wave device which generates radio-frequency power from an enclosed, orbiting electron cloud, excited by a radio-frequency field, when subjected to a strong, pulsed magnetic field. { tórˈnād·əˌträn }

toroidal discharge *See* ring discharge. { təˈrȯid·əl 'disˌchärj }

torque amplifier [COMPUT SCI] An analog computer device having input and output shafts and supplying work to rotate the output shaft in positional correspondence with the input shaft without imposing any significant torque on the input shaft. { 'tórkˌam·pləˌfī·ər }

torque constant [ELEC] The ratio of the torque delivered by a motor to the current supplied to it. { 'tórkˌkän·stənt }

torque-speed characteristic [ELEC] For electric motors, the relationship of developed torque to armature speed. { 'tórk 'spēd ˌkar·ik·təˌris·tik }

torsional mode delay line [COMPUT SCI] A device in which torsional vibrations are propagated through a solid material to make use of the propagation time of the vibrations to obtain a time delay for the signals. { 'tȯr·shən·əl ˌmōd diˈlāˌlīn }

torsion galvanometer [ENG] A galvanometer in which the force between the fixed and moving systems is measured by the angle through which the supporting head of the moving system must be rotated to bring the moving system back to its zero position. { 'tȯr·shən ˌgal·vəˈnäm·əd·ər }

torsion-string galvanometer [ENG] A sensitive galvanometer in which the moving system is suspended by two parallel fibers that tend to twist around each other. { 'tȯr·shən ˌstriŋ ˌgal·vəˈnäm·əd·ər }

TOS *See* tape operating system.

total deadlock [COMPUT SCI] A deadlock that involves all the tasks in a multiprogramming system. { 'tōd·əl 'dedˌläk }

total harmonic distortion [ELECTR] Ratio of the power at the fundamental frequency, measured at the output of the transmission system considered, to the power of all harmonics observed at the output of the system because of its nonlinearity, when a single frequency signal of specified power is applied to the input of the system; it is expressed in decibels. { 'tōd·əl härˈmän·ik diˈstȯr·shən }

touch call *See* push-button dialing. { 'təchˌkȯl }

touch control [ELEC] A circuit that closes a relay when two metal areas are bridged by a finger or hand. { 'təch kənˌtrōl }

touchpad [COMPUT SCI] A small, touch-sensitive pad that enables the user to move the pointer on the display screen of a personal computer by moving a finger or other object along the pad and to click by tapping the pad. { 'təchˌpad }

touch screen [COMPUT SCI] An electronic display that allows a user to send signals to a computer by touching an area on the display with a finger, pencil, or other object. { 'təch ˌskrēn }

touch sensor [CONT SYS] A device such as a small, force-sensitive switch that uses contact to generate feedback in robotic systems. { 'təch ˌsen·sər }

tower [ELECTROMAG] A tall metal structure used as a transmitting antenna, or used with another such structure to support a transmitting antenna wire. { taú·ər }

tower case [COMPUT SCI] A system unit that stands in a vertical position. { 'taú·ərˌkās }

tower loading [ELEC] Load placed on a tower by its own weight, the weight of the wires with or without ice covering, the insulators, the wind

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pressure normal to the line acting both on the tower and the wires, and the pull from the wires. { 'taú·ər ˌlōd·iŋ }

tower radiator |ELECTROMAG| Metal structure used as a transmitting antenna. { 'taú·ər ¦rād·ē ˌād·ər }

Townsend avalanche See avalanche. { 'taún·zənd ˌav·əˌlanch }

Townsend characteristic |ELECTR| Current-voltage characteristic curve for a phototube at constant illumination and at voltages below that at which a glow discharge occurs. { 'taún·zənd ˌkar·ik·tə,ris·tik }

Townsend coefficient |ELECTR| The number of ionizing collisions by an electron per centimeter of path length in the direction of the applied electric field in a radiation counter. { 'taún·zənd ˌkō·iˌfish·ənt }

Townsend discharge |ELECTR| A discharge which occurs at voltages too low for it to be maintained by the electric field alone, and which must be initiated and sustained by ionization produced by other agents; it occurs at moderate pressures, above about 0.1 torr, and is free of space charges. { 'taún·zənd ˌdis,chärj }

Townsend ionization See avalanche. { 'taún·zənd ˌī·ə·nəˌzā·shən }

Tow-Thomas filter |ELECTR| A multiple-amplifier active filter that has the advantage of ease of design but the disadvantage of lacking a high-pass output in its basic configuration. { ¦tō 'täm·əs ˌfil·tər }

T pad |ELEC| A pad made up of resistance elements arranged as a T network (two resistors inserted in one line, with a third between their junction and the other line). { 'tē ˌpad }

TP monitor See teleprocessing monitor. { ¦tē'pē ˌmän·əd·ər }

trace |COMPUT SCI| To provide a record of every step, or selected steps, executed by a computer program, and by extension, the record produced by this operation. |ELECTR| The visible path of a moving spot on the screen of a cathode-ray tube. Also known as line. { trās }

trace interval |ELECTR| Interval corresponding to the direction of sweep used for delineation. { 'trās ˌin·tər·vəl }

trace routine |COMPUT SCI| A routine which tracks the execution of a program, step by step, to locate a program malfunction. Also known as tracing routine. { 'trās rü,tēn }

trace sensitivity |ELECTR| The ability of an oscilloscope to produce a visible trace on the scope face for a specified input voltage. { 'trās ˌsen·sə ˌtīv·əd·ē }

trace statement |COMPUT SCI| A statement, included in certain programming languages, that causes certain error-checking procedures to be carried out on specified segments of a source program. { 'trās ˌstāt·mənt }

tracing routine See trace routine. { 'trās·iŋ rü ˌtēn }

track |ELECTR| **1.** A path for recording one channel of information on a magnetic tape, drum, or other magnetic recording medium; the location of the track is determined by the recording equipment rather than by the medium. **2.** The trace on a plan-position indicator or similar display resulting from the association of successive detections presumed to be from the same moving target; or the same information from an appropriate radar data processor. { trak }

trackball |COMPUT SCI| A ball inset in the console of a video display terminal, the keyboard of a personal computer, or a small box-shaped holder, which can be rotated by the operator, and whose motion is followed by a cursor on the display screen. { 'trak,bȯl }

tracker |COMPUT SCI| An input device used in a virtual environment, which is capable of reporting its location in space and its orientation. { 'trak·ər }

track filtering |ELECTR| In radar data processing, the treatment of each subsequent measurement of a target's position, generally by weighting factors, to reduce the effects of measurement error, resulting in a "smoothing" of the track. { 'trak ˌfil·tər·iŋ }

tracking |ELEC| A leakage or fault path created across the surface of an insulating material when a high-voltage current slowly but steadily forms a carbonized path. |ELECTR| The condition in which all tuned circuits in a receiver accurately follow the frequency indicated by the tuning dial over the entire tuning range. |ENG| **1.** A motion given to the major lobe of a radar or radio antenna such that some preassigned moving target in space is always within the major lobe. **2.** The process of following the movements of an object; may be accomplished by keeping the reticle of an optical system or a radar beam on the object, by plotting its bearing and distance at frequent intervals, or by a combination of techniques. { 'trak·iŋ }

Tracking and Data Relay Satellite System |COMMUN| A system providing telecommunication services between low-earth-orbiting user spacecraft and user control centers; it consists of a series of geostationary spacecraft and an earth terminal located at White Sands, New Mexico. Abbreviated TDRSS. { ¦trak·iŋ an ¦dad·ə ¦rē,lā 'sad·əˌlīt ˌsis·təm }

tracking cross |COMPUT SCI| A cross displayed on the screen of a video terminal which automatically follows a light pen. Also known as tracking cursor. { 'trak·iŋ ˌkrȯs }

tracking cursor See tracking cross. { 'trak·iŋ ˌkər·sər }

tracking filter |ELECTR| Electronic device for attenuating unwanted signals while passing desired signals, by phase-lock techniques that reduce the effective bandwidth of the circuit and eliminate amplitude variations. { 'trak·iŋ ˌfil·tər }

tracking problem |CONT SYS| The problem of determining a control law which when applied to a dynamical system causes its output to track a given function; the performance index is in many cases taken to be of the integral square error variety. { 'trak·iŋ ˌpräb·ləm }

track in range [ELECTR] To adjust the gate of a radar set so that it opens at the correct instant to accept the signal from a target of changing range from the radar. { 'trak in 'rānj }

track pitch [ELECTR] The physical distance between track centers. { 'trak ˌpich }

track-return power system [ELEC] A system for distributing electric power to trains or other vehicles, in which the track rails are used as an uninsulated return conductor. { 'trak ri¦tərn 'paù·ər ˌsis·təm }

track-to-track access time [COMPUT SCI] The time required for a read-write head to move between the adjacent cylinders of a disk. { ¦trak tə ¦trak 'ak,ses ˌtīm }

track-while-scan [ELECTR] Radar operation used to detect a radar target, compute its velocity, and predict its future position without interfering with continuous radar scanning. { ¦trak ˌwīl 'skan }

tractor-feed printer *See* pin-feed printer. { 'trak·tər ¦fēd 'print·ər }

traffic [COMMUN] The messages transmitted and received over a communication channel. { 'traf·ik }

traffic diagram [COMMUN] Chart or illustration used to show the movement and control of traffic over a communications system. { 'traf·ik ˌdī·ə ˌgram }

traffic distribution [COMMUN] Routing of communications traffic through a terminal to a switchboard or dialing center. { 'traf·ik ˌdi·strə ˌbyü·shən }

traffic flow security [COMMUN] Transmission of an uninterrupted flow of random text on a wire or radio link between two stations with no indication to an interceptor of what portions of this steady stream constitute encrypted message text and what portions are merely random filler. { 'traf·ik ¦flō si,kyür·əd·ē }

traffic forecast [COMMUN] Traffic level prediction on which communications system management decisions and engineering effort are based. { 'traf·ik ˌfȯr,kast }

trailer [ELECTR] A bright streak at the right of a dark area or dark line in an analog television picture, or a dark area or streak at the right of a bright part; usually due to insufficient gain at low video frequencies. { 'trā·lər }

trailer label [COMPUT SCI] A record appearing at the end of a magnetic tape that uniquely identifies the tape as one required by the system. { 'trā·lər ˌlā·bəl }

trailer record [COMPUT SCI] A record which contains data pertaining to an associated group of records immediately preceding it. { 'trā·lər ˌrek·ərd }

trailing antenna [ELECTROMAG] An aircraft radio antenna having one end weighted and trailing free from the aircraft when in flight. { 'trāl·iŋ an ¦ten·ə }

trailing edge [ELECTR] The major portion of the decay of a pulse. { 'trāl·iŋ 'ej }

trailing pad [COMPUT SCI] Characters placed to the right of information in a field of data to fulfill length requirements or for cosmetic purposes. { 'trāl·iŋ ˌpad }

trainer [ELECTR] A piece of equipment used for training operators of radar, sonar, and other electronic equipment by simulating signals received under operating conditions in the field. { 'trā·nər }

training data [CONT SYS] Data entered into a robot's computer at the beginning of an operation. { 'trān·iŋ ˌdad·ə }

training time [COMPUT SCI] The machine time expended in training employees in the use of the equipment, including such activities as mounting, console operation, converter operation, and printing operation, and time spent in conducting required demonstrations. { 'trān·iŋ ¦tīm }

train printer [COMPUT SCI] A computer printer in which the characters are carried in a track and a hammer strikes the proper character against the paper as it passes the print position. { 'trān ˌprint·ər }

trajectory control [CONT SYS] A type of continuous-path control in which a robot's path is calculated based on mathematical models of joint acceleration, arm loads, and actuating signals. { trə'jek·trē kən,trōl }

transacter [COMPUT SCI] A system in which data from sources in a number of different locations, as in a factory, are transmitted to a data-processing center and immediately processed by a computer. { tran'sak·tər }

transaction [COMPUT SCI] General description of updating data relevant to any item. { tran'sak·shən }

transaction data [COMPUT SCI] A set of data in a data-processing area in which the incidence of the data is essentially random and unpredictable; hours worked, quantities shipped, and amounts invoiced are examples from, respectively, the areas of payroll, accounts receivable, and accounts payable. { tran'sak·shən ˌdad·ə }

transaction file *See* detail file. { tran'sak·shən ˌfīl }

transaction processing system [COMPUT SCI] A system which processes predefined transactions, one at a time, with direct, on-site entry of the transactions into a terminal, and which produces predefined outputs and maintains the necessary data base. { tran'sak·shən 'prä,ses·iŋ ˌsis·təm }

transaction record *See* change record. { tran 'sak·shən ˌrek·ərd }

transaction tape *See* change tape. { tran'sak·shən ˌtāp }

transadmittance [ELECTR] A specific measure of transfer admittance under a given set of conditions, as in forward transadmittance, interelectrode transadmittance, short-circuit transadmittance, small-signal forward transadmittance, and transadmittance compression ratio. { ¦tranz·ad'mit·əns }

transceiver [COMPUT SCI] A computer terminal that can transmit and receive information to and from an input/output channel. [ELECTR] A radio transmitter and receiver combined in one unit and having switching arrangements such as

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to permit both transmitting and receiving. Also known as transmitter-receiver. { tran'sē·vər }

transconductance [ELECTR] **1.** An electron-tube rating, equal to the change in plate current divided by the change in control-grid voltage that causes it, when the plate voltage and all other voltages are maintained constant. Also known as grid-anode transconductance; grid-plate transconductance; mutual conductance. Symbolized G_m; g_m. **2.** A field-effect-transistor rating, equal to the change in drain current divided by the change in gate-to-source voltage that causes it, when the drain voltage and all other voltages are maintained constant. Symbolized g_f. **3.** An amplifier parameter, equal to the change in output current divided by the change in input voltage that causes it. Symbolized g_m. { ¦tranz·kən'dək·təns }

transconductance amplifier [ELECTR] An amplifier whose output current (rather than output voltage) is proportional to its input voltage. { ¦tranz·kən¦duk·təns 'am·plə¦fī·ər }

transconductance-C filter [ELECTR] An integrated-circuit filter that combines the functions of an amplifier and a simulated resistor into a transconductance amplifier. { 'tranz·kən ¦duk·təns 'sē ¦fil·tər }

transconductor *See* transconductance amplifier. { ¦tranz·kən'dək·tər }

transcribe [COMPUT SCI] To copy, with or without translating, from one external computer storage medium to another. [ELECTR] To record, as to record a radio program by means of electric transcriptions or magnetic tape for future rebroadcasting. { tranz'krīb }

transcriber [COMPUT SCI] The equipment used to convert information from one form to another, as for converting computer input data to the medium and language used by the computer. { tranz'krī·bər }

transducer [ENG] Any device or element which converts an input signal into an output signal of a different form; examples include the microphone, loudspeaker, barometer, photoelectric cell, automobile horn, doorbell, and underwater sound transducer. { tranz'dü·sər }

transducer loss [ELECTR] The ratio of the power available to a transducer from a specified source to the power that the transducer delivers to a specified load; usually expressed in decibels. { tranz'dü·sər ¦lòs }

transductor *See* magnetic amplifier. { tranz'dək·tər }

transfer *See* jump. { 'tranz·fər }

transfer admittance [ELECTR] An admittance rating for electron tubes and other transducers or networks; it is equal to the complex alternating component of current flowing to one terminal from its external termination, divided by the complex alternating component of the voltage applied to the adjacent terminal on the cathode or reference side; all other terminals have arbitrary external terminations. { 'tranz·fər ad ¦mit·əns }

transfer characteristic [ELECTR] **1.** Relation, usually shown by a graph, between the voltage of one electrode and the current to another electrode, with all other electrode voltages being maintained constant. **2.** Function which, multiplied by an input magnitude, will give a resulting output magnitude. **3.** Relation between the illumination on a camera tube and the corresponding output-signal current, under specified conditions of illumination. { 'tranz·fər ¦kar·ik·tə¦ris·tik }

transfer check [COMPUT SCI] Check (usually automatic) on the accuracy of the transfer of a word in a computer operation. { 'tranz·fər ¦chek }

transfer conditionally [COMPUT SCI] To copy, exchange, read, record, store, transmit, or write data or to change control or jump to another location according to a certain specified rule or in accordance with a certain criterion. { tranz'fər kən'dish·ən·ə·lē }

transfer constant [ENG] A transducer rating, equal to one-half the natural logarithm of the complex ratio of the product of the voltage and current entering a transducer to that leaving the transducer when the latter is terminated in its image impedance; alternatively, the product may be that of force and velocity or pressure and volume velocity; the real part of the transfer constant is the image attenuation constant, and the imaginary part is the image phase constant. Also known as transfer factor. { 'tranz·fər ¦kän·stənt }

Transfer Control Protocol *See* Transmission Control Protocol. { ¦tranz·fər kən'trōl ¦prōd·ə¦kòl }

transfer factor *See* transfer constant. { 'tranz·fər ¦fak·tər }

transfer function [CONT SYS] The mathematical relationship between the output of a control system and its input: for a linear system, it is the Laplace transform of the output divided by the Laplace transform of the input under conditions of zero initial-energy storage. { 'tranz·fər ¦fəŋk·shən }

transfer impedance [ELEC] The ratio of the voltage applied at one pair of terminals of a network to the resultant current at another pair of terminals, all terminals being terminated in a specified manner. { 'tranz·fər im¦pēd·əns }

transfer-in-channel command [COMPUT SCI] A command used to direct channel control to a specified location in main storage when the next channel command word is not stored in the next location in sequence. { ¦tranz·fər in 'chan·əl kə ¦mand }

transfer instruction [COMPUT SCI] Step in computer operation specifying the next operation to be performed, which is not necessarily the next instruction in sequence. { 'tranz·fər in ¦strək·shən }

transfer interpreter [COMPUT SCI] A variation of a punched-card interpreter that senses a punched card and prints the punched information on the

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following card. Also known as posting interpreter. { 'tranz·fər in,tər·prəd·ər }

transfer matrix [CONT SYS] The generalization of the concept of a transfer function to a multivariable system; it is the matrix whose product with the vector representing the input variables yields the vector representing the output variables. { 'tranz·fər ,mā·triks }

transfer operation [COMPUT SCI] An operation which moves information from one storage location or one storage medium to another (for example, read, record, copy, transmit, exchange). { 'tranz·fər ,äp·ə,rā·shən }

transfer rate [COMPUT SCI] The speed at which data are moved from a direct-access device to a central processing unit. { 'tranz·fər ,rāt }

transfer ratio [ENG] From one point to another in a transducer at a specified frequency, the complex ratio of the generalized force or velocity at the second point to the generalized force or velocity applied at the first point; the generalized force or velocity includes not only mechanical quantities, but also other analogous quantities such as acoustical and electrical; the electrical quantities are usually electromotive force and current. { 'tranz·fər ,rā·shō }

transferred-electron amplifier [ELECTR] A diode amplifier, which generally uses a transferred-electron diode made from doped *n*-type gallium arsenide, that provides amplification in the gigahertz range to well over 50 gigahertz at power outputs typically below 1 watt continuous-wave. Abbreviated TEA. { 'tranz'fərd i¦lek,trän 'am·plə ,fī·ər }

transferred-electron device [ELECTR] A semiconductor device, usually a diode, that depends on internal negative resistance caused by transferred electrons in gallium arsenide or indium phosphide at high electric fields; transit time is minimized, permitting oscillation at frequencies up to several hundred megahertz. { 'tranz'fərd i ¦lek,trän di'vīs }

transfer robot [CONT SYS] A fixed-sequence robot that moves parts from one location to another. { 'tranz·fər 'rō,bät }

transfer switch [ELEC] A switch for transferring one or more conductor connections from one circuit to another. { 'tranz·fər ,swich }

transfer test [COMMUN] Verification of transmitted information by temporary storing, retransmitting, and comparing. { 'tranz·fər ,test }

transform [COMPUT SCI] To change the form of digital-computer information without significantly altering its meaning. { tranz'fȯrm }

transformation [ELEC] For two networks which are equivalent as far as conditions at the terminals are concerned, a set of equations giving the admittances or impedances of the branches of one circuit in terms of the admittances or impedances of the other. { ,tranz·fər'mā·shən }

transformation matrix [ELECTROMAG] A two-by-two matrix which relates the amplitudes of the traveling waves on one side of a waveguide junction to those on the other. { ,tranz·fər'mā·shən ,mā·triks }

transformer [ELECTROMAG] An electrical component consisting of two or more multiturn coils of wire placed in close proximity to cause the magnetic field of one to link the other, used to transfer electric energy from one or more alternating-current circuits to one or more other circuits by magnetic induction. { tranz'fȯr·mər }

transformer bridge [ELEC] A network consisting of a transformer and two impedances, in which the input signal is applied to the transformer primary and the output is taken between the secondary center-tap and the junction of the impedances that connect to the outer leads of the secondary. { tranz'fȯr·mər ,brij }

transformer-coupled amplifier [ELECTR] Audio-frequency amplifier that uses untuned iron-core transformers to provide coupling between stages. { tranz'fȯr·mər ¦kəp·əld 'am·plə,fī·ər }

transformer coupling [ELEC] *See* inductive coupling. [ELECTR] Interconnection between stages of an amplifier which employs a transformer for connecting the plate circuit of one stage to the grid circuit of the following stage; a special case of inductive coupling. { tranz'fȯr·mər ,kəp·liŋ }

transformer hybrid *See* hybrid set. { tranz'fȯr·mər 'hī·brəd }

transformer load loss [ELEC] Losses in a transformer which are incident to the carrying of the load; load losses include resistance loss in the windings due to load current, stray loss due to stray fluxes in the windings, core clamps, and so on, and to circulating current, if any, in parallel windings. { tranz'fȯr·mər 'lōd ,lȯs }

transformer loss [ELEC] Ratio of the signal power that an ideal transformer of the same impedance ratio would deliver to the load impedance, to the signal power that the actual transformer delivers to the load impedance; this ratio is usually expressed in decibels. { tranz'fȯr·mər ,lȯs }

transformer read-only store [COMPUT SCI] In computers, read-only store in which the presence or absence of mutual inductance between two circuits determines whether a binary 1 or 0 is stored. { tranz'fȯr·mər 'rēd ¦ōn·lē 'stȯr }

transformer rectifier [ELEC] A combination of a transformer and a rectifier that allows input alternating current to be varied and then rectified into direct current. { 'tranz,fȯr·mər 'rek·tə,fī·ər }

transformer substation [ELEC] An electric power substation whose equipment includes transformers. { tranz'fȯr·mər 'səb,stā·shən }

transformer voltage ratio [ELEC] Ratio of the root-mean-square primary terminal voltage to the root-mean-square secondary terminal voltage under specified conditions of load. { tranz'fȯr·mər 'vōl·tij ,rā·shō }

transforming section [ELECTROMAG] Length of waveguide or transmission line of modified cross section, or with a metallic or dielectric insert, used for impedance transformation. { tranz'fȯrm·iŋ ,sek·shən }

transhybrid loss [ELEC] In a carrier telephone system, the transmission loss at a given

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frequency measured across a hybrid circuit joined to a given two-wire termination and balancing network. { |tranz|hī·brəd 'lōs }

transient [PHYS] A pulse, damped oscillation, or other temporary phenomenon occurring in a system prior to reaching a steady-state condition. { 'tranch·ənt }

transient analyzer [ELECTR] An analyzer that generates transients in the form of a succession of equal electric surges of small amplitude and adjustable waveform, applies these transients to a circuit or device under test, and shows the resulting output waveforms on the screen of an oscilloscope. { 'tranch·ənt ˌan·əˌlīz·ər }

transient distortion [ELECTR] Distortion due to inability to amplify transients linearly. { 'tranch·ənt di'stȯr·shən }

transient phenomena [ELEC] Rapidly changing actions occurring in a circuit during the interval between closing of a switch and settling to a steady-state condition, or any other temporary actions occurring after some change in a circuit. { 'tranch·ənt fəˌnäm·ə·nä }

transient program [COMPUT SCI] A computer program that is stored in a computer's main memory only while it is being executed. { 'tranch·ənt 'prō·grəm }

transient suppressor *See* surge suppressor. { 'tranch·ənt sə'pres·ər }

transistance [ELECTR] The characteristic that makes possible the control of voltages or currents so as to accomplish gain or switching action in a circuit; examples of transistance occur in transistors, diodes, and saturable reactors. { tran'zis·təns }

transistor [ELECTR] An active component of an electronic circuit consisting of a small block of semiconducting material to which at least three electrical contacts are made, usually two closely spaced rectifying contacts and one ohmic (nonrectifying) contact; it may be used as an amplifier, detector, or switch. { tran'zis·tər }

transistor amplifier [ELECTR] An amplifier in which one or more transistors provide amplification comparable to that of electron tubes. { tran'zis·tər ˌam·pləˌfī·ər }

transistor biasing [ELECTR] Maintaining a direct-current voltage between the base and some other element of a transistor. { tran'zis·tər ˌbī·əs·iŋ }

transistor characteristics [ELECTR] The values of the impedances and gains of a transistor. { tran'zis·tər ˌkar·ik·təˌris·tiks }

transistor chip [ELECTR] An unencapsulated transistor of very small size used in microcircuits. { tran'zis·tər ˌchip }

transistor circuit [ELECTR] An electric circuit in which a transistor is connected. { tran'zis·tər ˌsər·kət }

transistor clipping circuit [ELECTR] A circuit in which a transistor is used to achieve clipping action; the bias at the input is set at such a level that output current cannot flow during a portion of the amplitude excursion of the input voltage or current waveform. { tran'zis·tər 'klip·iŋ ˌsər·kət }

transistor gain [ELECTR] The increase in signal power produced by a transistor. { tran'zis·tər ˌgān }

transistor input resistance [ELECTR] The resistance across the input terminals of a transistor stage. Also known as input resistance. { tran'zis·tər 'inˌpůt riˌzis·təns }

transistor magnetic amplifier [ELECTR] A magnetic amplifier together with a transistor preamplifier, the latter used to make the signal strong enough to change the flux in the core of the magnetic amplifier completely during a half-cycle of the power supply voltage. { tran'zis·tər mag'ned·ik 'am·pləˌfī·ər }

transistor memory *See* semiconductor memory. { tran'zis·tər ˌmem·rē }

transistor radio [ELECTR] A radio receiver in which transistors are used in place of electron tubes. { tran'zis·tər ˌrād·ē·ō }

transistor-transistor logic [ELECTR] A logic circuit containing two transistors, for driving large output capacitances at high speed. Abbreviated T^2L; TTL. { tran'zis·tər tran'zis·tər 'läj·ik }

transition [COMMUN] Change from one circuit condition to the other; for example, the change from mark to space or from space to mark. { tran'zish·ən }

transition element [ELECTROMAG] An element used to couple one type of transmission system to another, as for coupling a coaxial line to a waveguide. { tran'zish·ən ˌel·ə·mənt }

transition factor *See* reflection factor. { tran'zish·ən ˌfak·tər }

transition function [COMPUT SCI] A function which determines the next state of a sequential machine from the present state and the present input. { tran'zish·ən ˌfəŋk·shən }

transition loss [ELEC] At a junction between a source and a load, the ratio of the available power to the power delivered to the load. { tran'zish·ən ˌlȯs }

transition point [ELECTROMAG] A point at which the constants of a circuit change in such a way as to cause reflection of a wave being propagated along the circuit. { tran'zish·ən ˌpȯint }

transitron [ELECTR] Thermionic-tube circuit whose action depends on the negative transconductance of the suppressor grid of a pentode with respect to the screen grid. { 'tran·səˌträn }

transitron oscillator [ELECTR] A negative-resistance oscillator in which the screen grid is more positive than the anode, and a capacitor is connected between the screen grid and the suppressor grid; the suppressor grid periodically divides the current between the screen grid and the anode, thereby producing oscillation. { 'tran·səˌträn 'äs·əˌlād·ər }

transit time [ELECTR] The time required for an electron or other charge carrier to travel between two electrodes in an electron tube or transistor. { 'trans·ət ˌtīm }

transit-time microwave diode [ELECTR] A solid-state microwave diode in which the transit time of charge carriers is short enough to permit operation in microwave bands. { 'trans·ət ˌtīm 'mī·krəˌwāv 'dīˌōd }

transit-time mode [ELECTR] A mode of operation of a Gunn diode in which a charge dipole,

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consisting of an electron accumulation and a depletion layer, travels through the semiconductor at a frequency dependent on the length of the semiconductor layer and the drift velocity. { 'trans·ət ,tīm ,mōd }

translate [COMPUT SCI] To convert computer information from one language to another, or to convert characters from one representation set to another, and by extension, the computer instruction which directs the latter conversion to be carried out. { tran'slāt }

translating circuit *See* translator. { tran'slād·iŋ ,sər·kət }

translation algorithm [COMPUT SCI] A specific, effective, essentially computational method for obtaining a translation from one language to another. { tran'slā·shən 'al·gə,rith·əm }

translator [COMPUT SCI] A computer network or system having a number of inputs and outputs, so connected that when signals representing information expressed in a certain code are applied to the inputs, the output signals will represent the same information in a different code. Also known as translating circuit. [ELECTR] A combination television receiver and low-power television transmitter, used to pick up television signals on one frequency and retransmit them on another frequency to provide reception in areas not served directly by television stations. { tran'slād·ər }

translator routine [COMPUT SCI] A program which accepts statements in one language and outputs them as statements in another language. { tran'slād·ər rü,tēn }

transliterate [COMPUT SCI] To represent the characters or words of one language by corresponding characters or words of another language. { tran'slid·ə,rāt }

transmission [ELECTR] **1.** The process of transferring a signal, message, picture, or other form of intelligence from one location to another location by means of wire lines, radio waves, light beams, infrared beams, or other communication systems. **2.** A message, signal, or other form of intelligence that is being transmitted. **3.** *See* transmittance. { tranz'mish·ən }

transmission access [ELEC] The use of electric power lines and other power transmitting facilities by parties other than the owners of the lines. Also known as common carriage. { tranz'mish·ən 'ak,ses }

transmission band [ELECTROMAG] Frequency range above the cutoff frequency in a waveguide, or the comparable useful frequency range for any other transmission line, system, or device. { tranz'mish·ən ,band }

transmission control character [COMMUN] A character included in a message to control its routing to the intended destination. { tranz'mish·ən kən'trōl ,kar·ik·tər }

Transmission Control Protocol [COMMUN] The set of standards that is responsible for breaking down and reassembling the data packets transmitted on the Internet, for ensuring complete delivery of the packets and for controlling data flow. Abbreviated TCP. { tranz,mish·ən kən'trōl ,prōd·ə,kól }

Transmission Control Protocol/Internet Protocol [COMPUT SCI] The Internet's principal communication standard, dictating how packets of information are sent and received across multiple networks. TCP breaks down and reassembles packets, and IP ensures that the packets are sent to the correct destination. Abbreviated TCP/IP. { tranz,mish·ən kən'trōl ,prōd·ə,kól 'in·tər,net ,prōd·ə,kól }

transmission electron microscope [ELECTR] A type of electron microscope in which the specimen transmits an electron beam focused on it, image contrasts are formed by the scattering of electrons out of the beam, and various magnetic lenses perform functions analogous to those of ordinary lenses in a light microscope. { tranz'mish·ən i'lek,trän 'mī·krə,skōp }

transmission electron radiography [ELECTR] A technique used in microradiography to obtain radiographic images of very thin specimens; the photographic plate is in close contact with the specimen, over which is placed a lead foil and then a light-tight covering; hardened x-rays shoot through the light-tight covering. { tranz'mish·ən i,lek,tran ,rād·ē'äg·rə·fē }

transmission facilities [COMMUN] All equipment and the medium required to transmit a message. { tranz'mish·ən fə,sil·əd·ēz }

transmission gain *See* gain. { tranz'mish·ən ,gān }

transmission gate [ELECTR] A gate circuit that delivers an output waveform that is a replica of a selected input during a specific time interval which is determined by a control signal. { tranz'mish·ən ,gāt }

transmission interface converter [COMPUT SCI] A device that converts data to or from a form suitable for transfer over a channel connecting two computer systems or connecting a computer with its associated data terminals. { tranz'mish·ən 'in·tər,fās kən,vərd·ər }

transmission level [COMMUN] The ratio of the signal power at any point in a transmission system to the signal power at some point in the system chosen as a reference point; usually expressed in decibels. { tranz'mish·ən ,lev·əl }

transmission line [ELEC] A system of conductors, such as wires, waveguides, or coaxial cables, suitable for conducting electric power or signals efficiently between two or more terminals. { tranz'mish·ən ,līn }

transmission-line admittance [ELEC] The complex ratio of the current flowing in a transmission line to the voltage across the line, where the current and voltage are expressed in phasor notation. { tranz'mish·ən ¦līn ad,mit·əns }

transmission-line attenuation [ELEC] The decrease in power of a transmission-line signal from one point to another, expressed as a ratio or in decibels. { tranz'mish·ən ¦līn ə,ten·yə,wā·shən }

transmission-line cable [ELEC] The coaxial cable, waveguide, or microstrip which forms a transmission line; a number of standard types

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have been designated, specified by size and materials. { tranz'mish·ən ¦līn ˌkā·bəl }

transmission-line constants *See* transmission-line parameters. { tranz'mish·ən ¦līn ˌkän·stəns }

transmission-line current [ELEC] The amount of electrical charge which passes a given point in a transmission line per unit time. { tranz 'mish·ən ¦līn ˌkə·rənt }

transmission-line efficiency [ELEC] The ratio of the power of a transmission-line signal at one end of the line to that at the other end where the signal is generated. { tranz'mish·ən ¦līn ˌfish·ən·sē }

transmission-line impedance [ELEC] The complex ratio of the voltage across a transmission line to the current flowing in the line, where voltage and current are expressed in phasor notation. { tranz'mish·ən ¦līn imˌpēd·əns }

transmission-line parameters [ELEC] The quantities which are necessary to specify the impedance per unit length of a transmission line, and the admittance per unit length between various conductors of the line. Also known as linear electrical parameters; line parameters; transmission line constants. { tranz'mish·ən ¦līn pəˌram·əd·ərz }

transmission-line power [ELEC] The amount of energy carried past a point in a transmission line per unit time. { tranz'mish·ən ¦līn ˌpaù·ər }

transmission-line reflection coefficient [ELEC] The ratio of the voltage reflected from the load at the end of a transmission line to the direct voltage. { tranz'mish·ən ¦līn ri'flek·shən ˌkō·i ˌfish·ənt }

transmission-line theory [ELEC] The application of electrical and electromagnetic theory to the behavior of transmission lines. { tranz'mish·ən ¦līn ˌthē·ə·rē }

transmission-line transducer loss [ELEC] The ratio of the power delivered by a transmission line to a load to that produced at the generator, expressed in decibels; equal to the sum of the attenuation of the line and the mismatch loss. { tranz'mish·ən ¦līn trans'dü·sərˌlós }

transmission-line voltage [ELEC] The work that would be required to transport a unit electrical charge between two specified conductors of a transmission line at a given instant. { tranz 'mish·ən ¦līn ˌvōl·tij }

transmission loss [COMMUN] **1.** The ratio of the power at one point in a transmission system to the power at a point farther along the line; usually expressed in decibels. **2.** The actual power that is lost in transmitting a signal from one point to another through a medium or along a line. Also known as loss. { tranz'mish·ən ˌlós }

transmission mode *See* mode. { tranz'mish·ən ˌmōd }

transmission modulation [ELECTR] Amplitude modulation of the reading-beam current in a charge storage tube as the beam passes through apertures in the storage surface; the degree of modulation is controlled by the stored charge pattern. { tranz'mish·ən ˌmäj·ə'lā·shən }

transmission primaries [COMMUN] The set of three color primaries that correspond to the three independent signals contained in the color signal. { tranz'mish·ən 'prīˌmer·ēz }

transmission regulator [ELECTR] In electrical communications, a device that maintains substantially constant transmission levels over a system. { tranz'mish·ən ˌreg·yəˌlād·ər }

transmission security [COMMUN] Component of communications security which results from all measures designed to protect transmissions from unauthorized interception, traffic analysis, and imitative deception. { tranz'mish·ən si ˌkyúr·əd·ē }

transmission speed [COMMUN] The number of information elements sent per unit time; usually expressed as bits, characters, bands, word groups, or records per second or per minute. { tranz'mish·ən ˌspēd }

transmission substation [ELEC] An electric power substation associated with high voltage levels. { tranz'mish·ən 'səbˌstā·shən }

transmission time [COMMUN] Absolute time interval from transmission to reception of a signal. { tranz'mish·ən ˌtīm }

transmissivity [ELECTROMAG] The ratio of the transmitted radiation to the radiation arriving perpendicular to the boundary between two mediums. { ˌtranz·məˈsiv·əd·ē }

transmit [COMMUN] To send a message, program, or other information to a person or place by wire, radio, or other means. [COMPUT SCI] To move data from one location to another. { tranz'mit }

transmit-receive module [ELECTR] Microwave circuitry providing signal amplification on transmit, elemental duplexing, receiver functions, and phase control, usually featuring solid-state devices and compact packaging, for use at every element of a phased array radar antenna, the entire assembly constituting an "active" phase array. { tranz'mit ri'sēvˌmäj·ül }

transmittability [COMMUN] The ability of standard electronic and mechanical elements and automatic communications equipment to handle a code under various signal-to-noise ratios; for example, a code with a variable number of elements such as Morse presents technical problems in automatic interpretation not encountered in a fixed-length code. { tranz,mid·ə'bil·əd·ē }

transmittance [ELECTROMAG] The radiant power transmitted by a body divided by the total radiant power incident upon the body. Also known as transmission. { tranz'mid·əns }

transmitted-carrier operation [COMMUN] Form of amplitude-modulated carrier transmission in which the carrier wave is transmitted. { tranz 'mid·əd ¦kar·ē·ər ˌäp·əˌrā·shən }

transmitter [COMMUN] **1.** In telephony, the microphone that converts sound waves into audio-frequency signals. **2.** *See* radio transmitter. { tranz'mid·ər }

transmitter-distributor [ELEC] In teletypewriter operations, a motor-driven device which translates teletypewriter code combinations form

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perforated tape into electrical impulses, and transmits these impulses to one or more receiving stations. Abbreviated TD. { tranz'mid·ər di'strib·yəd·ər }

transmitter noise *See* frying noise. { tranz'mid·ər ˌnȯiz }

transmitter off [COMMUN] A signal sent by a receiving device to a transmitter, directing it to stop sending information if it is doing so, or not to send information if it is preparing to do so. Abbreviated XOFF. { tranz'mid·ər 'ȯf }

transmitter on [COMMUN] A signal sent by a receiving device to a transmitter, directing it to transmit any information it has to send. Abbreviated XON. { tranz'mid·ər 'ȯn }

transmitter-receiver *See* transceiver. { tranz'mid·ər ri'sē·vər }

transmitter synchro *See* synchro transmitter. { tranz'mid·ər ˌsiŋ·krō }

transmitting loop loss [COMMUN] That part of the repetition equivalent assignable to the station set, subscriber line, and battery supply circuit which is on the transmitting end. { tranz'mid·iŋ ˈlüp ˌlȯs }

transmitting mode [COMPUT SCI] Condition of an input/output device, such as a magnetic tape when it is actually reading or writing. { tranz'mid·iŋ ˌmōd }

transolver [ELEC] A synchro having a two-phase cylindrical rotor within a three-phase stator, for use as a transmitter or a control transformer with no degradation of accuracy or nulls. { tran'säl·vər }

transparent [COMPUT SCI] Pertaining to a device or system that processes data without the user being aware of or needing to understand its operation. { tranz'par·ənt }

transpolarizer [ELEC] An electrostatically controlled circuit impedance that can have about 30 discrete and reproducible impedance values: two capacitors, each having a crystalline ferroelectric dielectric with a nearly rectangular hysteresis loop, are connected in series and act as a single low impedance to an alternating-current sensing signal when both capacitors are polarized in the same direction; application of 1-microsecond pulses of appropriate polarity increases the impedance in steps. { tranz'pō·lə,rīz·ər }

transponder [COMMUN] **1.** A transmitter-receiver capable of accepting the challenge of an interrogator and automatically transmitting an appropriate reply. **2.** A receiver-transmitter, such as on satellites, which receives a transmission and retransmits it at another radio frequency. { tranz'pän·dər }

transponder beacon *See* responder beacon. { tranz'pän·dər ˌbē·kən }

transponder dead time [ELECTR] Time interval between the start of a pulse and the earliest instant at which a new pulse can be received or produced by a transponder. { tranz'pän·dər 'ded ˌtīm }

transponder set [ELECTR] A complete electronic set which is designed to receive an interrogation signal, and which retransmits coded signals that can be interpreted by the interrogating station; it may also utilize the received signal for actuation of additional equipment such as local indicators or servo amplifiers. { tranz'pän·dər ˌset }

transponder suppressed time delay [ELECTR] Overall fixed time delay between reception of an interrogation and transmission of a reply to this interrogation. { tranz'pän·dər sə'prest 'tīm di,lā }

transport [COMPUT SCI] **1.** To convey as a whole from one storage device to another in a digital computer. **2.** *See* tape transport. { trans'pȯrt (verb); 'tranz,pȯrt (noun) }

transportable computer [COMPUT SCI] A microcomputer that can be carried about conveniently but, in contrast to a portable computer, requires an external power source. { tranz'pȯrd·ə·bəl kəm'pyüd·ər }

transportation lag *See* distance/velocity lag. { ˌtranz·pər'tā·shən ˌlag }

transport delay unit [COMPUT SCI] A device used in analog computers which produces an output signal as a delayed form of an input signal. Also known as delay unit; transport unit. { 'tranz ˌpȯrt di'lā ˌyü·nət }

transport lag *See* distance/velocity lag. { 'tranz ˌpȯrt ˌlag }

transport unit *See* transport delay unit. { 'tranz ˌpȯrt ˌyü·nət }

transposition [COMMUN] Interchanging the relative positions of conductors at regular intervals along a transmission line to reduce cross talk. { ˌtranz·pə'zish·ən }

transposition cipher [COMMUN] A cipher in which the order of the characters in the original message is changed. { ˌtranz·pə'zish·ən ˌsī·fər }

transradar [COMMUN] Bandwidth compression system developed for long-range narrow-band transmission of radio signals from a radar receiver to a remote location. { 'tränz|rā,där }

transrectification [ELEC] Rectification that occurs in one circuit when an alternating voltage is applied to another circuit. { tranz,rek·tə·fə'kā·shən }

transrectification characteristic [ELECTR] Graph obtained by plotting the direct-voltage values for one electrode of a vacuum tube as abscissas against the average current values in the circuit of that electrode as ordinates, for various values of alternating voltage applied to another electrode as a parameter; the alternating voltage is held constant for each curve, and the voltages on other electrodes are maintained constant. { tranz ˌrek·tə·fə'kā·shən ˌkar·ik·tə,ris·tik }

transrectifier [ELECTR] Device, ordinarily a vacuum tube, in which rectification occurs in one electrode circuit when an alternating voltage is applied to another electrode. { tranz'rek·tə ˌfī·ər }

transresistance [ELEC] The ratio of the voltage between any two connections of a four-terminal junction to the current passing between the other two connections. { ˌtranz·ri'zis·təns }

transresistance amplifier [ELECTR] An amplifier whose output voltage is proportional to its input current. { ˌtranz·ri,zis·təns 'am·plə,fī·ər }

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transverse electric mode [ELECTROMAG] A mode in which a particular transverse electric wave is propagated in a waveguide or cavity. Abbreviated TE mode. Also known as H mode (British usage). { trans¦vərs i¦lek·trik ˌmōd }

transverse electric wave [ELECTROMAG] An electromagnetic wave in which the electric field vector is everywhere perpendicular to the direction of propagation. Abbreviated TE wave. Also known as H wave (British usage). { trans¦vərs i'lek·trik 'wāv }

transverse electromagnetic mode [ELECTROMAG] A mode in which a particular transverse electromagnetic wave is propagated in a waveguide or cavity. Abbreviated TEM mode. { trans¦vərs i ¦lek·trō·mag'ned·ik 'mōd }

transverse electromagnetic wave [ELECTROMAG] An electromagnetic wave in which both the electric and magnetic field vectors are everywhere perpendicular to the direction of propagation. Abbreviated TEM wave. { trans¦vərs i¦lek·trō·mag'ned·ik 'wāv }

transverse interference [ELEC] Interference occurring across terminals or between signal leads. { trans¦vərs ˌin·tər'fir·əns }

transverse magnetic mode [ELECTROMAG] A mode in which a particular transverse magnetic wave is propagated in a waveguide or cavity. Abbreviated TM mode. Also known as E mode (British usage). { trans¦vərs mag'ned·ik 'mōd }

transverse magnetic wave [ELECTROMAG] An electromagnetic wave in which the magnetic field vector is everywhere perpendicular to the direction of propagation. Abbreviated TM wave. Also known as E wave (British usage). { trans ¦vərs mag'ned·ik 'mōd 'wāv }

transverse recording [ELECTR] Technique for recording video signals on magnetic tape using a four-transducer rotating head. { trans¦vərs ri'kȯrd·iŋ }

trap [COMPUT SCI] An automatic transfer of control of a computer to a known location, this transfer occurring when a specified condition is detected by hardware. [ELECTR] **1.** A tuned circuit used in the radio-frequency or intermediate-frequency section of a receiver to reject undesired frequencies; traps in analog television receiver video circuits keep the sound signal out of the picture channel. Also known as rejector. **2.** *See* wave trap. { trap }

trap address [COMPUT SCI] The location at which control is transferred in case of an interrupt as soon as the current instruction is completed. { 'trap 'adˌres }

TRAPATT diode [ELECTR] A *pn* junction diode, similar to the IMPATT diode, but characterized by the formation of a trapped space-charge plasma within the junction region; used in the generation and amplification of microwave power. Derived from trapped plasma avalanche transit time diode. { 'traˌpat ˌdīˌōd }

trapezium distortion [ELECTR] A defect in a cathode-ray tube in which the trace is confined within a trapezium rather than a rectangle, usually as a result of interaction between the two pairs of deflection plates. { trə'pē·zē·əm di ˌstȯr·shən }

trapezoidal generator [ELECTR] Electronic stage designed to produce a trapezoidal voltage wave. { ¦trap·əˌzȯid·əl 'jen·əˌrād·ər }

trapezoidal pulse [ELECTR] An electrical pulse in which the voltage rises linearly to some value, remains constant at this value for some time, and then drops linearly to the original value. { ¦trap·əˌzȯid·əl 'pəls }

trapezoidal wave [ELECTR] A wave consisting of a series of trapezoidal pulses. { ¦trap·əˌzȯid·əl 'wāv }

trapped plasma avalanche transit time diode *See* TRAPATT diode. { 'trapt 'plaz·mə 'av·əˌlanch 'trans·ət ˌtīm 'dīˌōd }

trapping *See* guided propagation. { 'trap·iŋ }

trapping mode [COMPUT SCI] A procedure by means of which the computer, upon encountering a predetermined set of conditions, saves the program in its present status, executes a diagnostic procedure, and then resumes the processing of the program as of the moment of interruption. { 'trap·iŋ ˌmōd }

trash heap [COMPUT SCI] An area in a computer's memory that has been assigned to a program but contains data which are no longer useful and are therefore wasteful of storage space. { 'trash ˌhēp }

traveling cable [ELEC] A cable that provides electrical contact between a fixed electrical outlet and an elevator or dumbwaiter car in the hoistway. { 'trav·əl·iŋ 'kā·bəl }

traveling-wave amplifier [ELECTR] An amplifier that uses one or more traveling-wave tubes to provide useful amplification of signals at frequencies of the order of thousands of megahertz. Also known as traveling-wave-tube amplifier (TWTA). { 'trav·əl·iŋ ¦wāv 'am·pləˌfī·ər }

traveling-wave antenna [ELECTROMAG] An antenna in which the current distributions are produced by waves of charges propagated in only one direction in the conductors. Also known as progressive-wave antenna. { 'trav·əl·iŋ ¦wāv an'ten·ə }

traveling-wave magnetron [ELECTR] A traveling-wave tube in which the electrons move in crossed static electric and magnetic fields that are substantially normal to the direction of wave propagation, as in practically all modern magnetrons. { 'trav·əl·iŋ ¦wāv 'mag·nəˌträn }

traveling-wave magnetron oscillations [ELECTR] Oscillations sustained by the interaction between the space-charge cloud of a magnetron and a traveling electromagnetic field whose phase velocity is approximately the same as the mean velocity of the cloud. { 'trav·əl·iŋ ¦wāv 'mag·nəˌträn ˌäs·əˌlā·shənz }

traveling-wave parametric amplifier [ELECTR] Parametric amplifier which has a continuous or iterated structure incorporating nonlinear reactors and in which the signal, pump, and

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difference-frequency waves are propagated along the structure. { 'trav·əl·iŋ ¦wāv ¦par·ə¦me·trik 'am·plə,fī·ər }

traveling-wave phototube [ELECTR] A traveling-wave tube having a photocathode and an appropriate window to admit a modulated laser beam; the modulated laser beam causes emission of a current-modulated photoelectron beam, which in turn is accelerated by an electron gun and directed into the helical slow-wave structure of the tube. { 'trav·əl·iŋ ¦wāv 'fōd·ə,tüb }

traveling-wave tube [ELECTR] An electron tube in which a stream of electrons interacts continuously or repeatedly with a guided electromagnetic wave moving substantially in synchronism with it, in such a way that there is a net transfer of energy from the stream to the wave; the tube is used as an amplifier or oscillator at frequencies in the microwave region. { 'trav·əl·iŋ ¦wāv ,tüb }

traveling-wave-tube amplifier *See* traveling-wave amplifier. { ¦trav·əl·iŋ ,wāv ,tüb 'am·plə,fī·ər }

tree [COMPUT SCI] A data structure in which each element may be logically followed by two or more other elements, there is one element with no predecessor, every other element has a unique predecessor, and there are no circular lists. [ELECTR] A set of connected circuit branches that includes no meshes; responds uniquely to each of the possible combinations of a number of simultaneous inputs. Also known as decoder. { trē }

tree automaton [COMPUT SCI] An automaton that processes inputs in the form of trees, usually trees associated with parsing expressions in context-free languages. { 'trē ,ȯd·ə,mā·shən }

tree diagram [COMPUT SCI] A flow diagram which has no closed paths. { 'trē ,dī·ə,gram }

tree pruning [COMPUT SCI] In computer programming, a strategy for eliminating branches of the complete game tree associated with a given position in a game such as chess or checkers, creating subtrees that explore a limited number of continuations for a limited number of moves. { 'trē ,prün·iŋ }

TRF receiver *See* tuned-radio-frequency receiver. { ,tē,är'ef ri,sē·vər }

triad [COMPUT SCI] A group of three bits, pulses, or characters forming a unit of data. [ELECTR] A triangular group of three small phosphor dots, each emitting one of the three primary colors on the screen of a three-gun color picture tube. { 'trī,ad }

triangular pulse [ELECTR] An electrical pulse in which the voltage rises linearly to some value, and immediately falls linearly to the original value. { trī'aŋ·gyə·lər 'pəls }

triangular wave [ELECTR] A wave consisting of a series of triangular pulses. { trī'aŋ·gyə·lər 'wāv }

triboelectricity *See* frictional electricity. { ¦trī·bō ,i,lek'tris·əd·ē }

triboelectric series [ELEC] A list of materials that produce an electrostatic charge when rubbed together, arranged in such an order that a material has a positive charge when rubbed with a material below it in the list, and has a negative charge when rubbed with a material above it in the list. { ¦trī·bō·i¦lek·trik 'sir·ēz }

triboelectrification [ELEC] The production of electrostatic charges by friction. { ¦trī·bō·i ,lek·trə·fə'kā·shən }

tributary station [COMMUN] Communications terminal consisting of equipment compatible for the introduction of messages into or reception from its associated relay station. { 'trib·yə ,ter·ē 'stā·shən }

trickle charge [ELEC] A continuous charge of a storage battery at a low rate to maintain the battery in a fully charged condition. { 'trik·əl ,chärj }

trickling [COMPUT SCI] The temporary transfer of momentarily unneeded data from main storage to secondary storage devices. { 'trik·liŋ }

tricolor picture tube *See* color picture tube. { 'trī ,kəl·ər 'pik·chər ,tüb }

triductor [ELEC] Arrangement of iron-core transformers and capacitors used to triple a power-line frequency. { trī'dək·tər }

trigatron [ELECTR] Gas-filled, spark-gap switch used in line pulse modulators. { 'trig·ə,trän }

trigger [COMPUT SCI] To execute a jump to the first instruction of a program after the program has been loaded into the computer. Also known as initiate. [ELECTR] **1.** To initiate an action, which then continues for a period of time, as by applying a pulse to a trigger circuit. **2.** The pulse used to initiate the action of a trigger circuit. **3.** *See* trigger circuit. { 'trig·ər }

trigger action [ELECTR] Use of a weak input pulse to initiate main current flow suddenly in a circuit or device. { 'trig·ər ,ak·shən }

trigger circuit [ELECTR] **1.** A circuit or network in which the output changes abruptly with an infinitesimal change in input at a predetermined operating point. Also known as trigger. **2.** A circuit in which an action is initiated by an input pulse, as in some radar modulators. **3.** *See* bistable multivibrator. { 'trig·ər ,sər·kət }

trigger control [ELECTR] Control of thyratrons, ignitrons, and other gas tubes in such a way that current flow may be started or stopped, but not regulated as to rate. { 'trig·ər kən,trōl }

trigger diode [ELECTR] A symmetrical three-layer avalanche diode used in activating silicon-controlled rectifiers; it has a symmetrical switching mode, and hence fires whenever the breakover voltage is exceeded in either polarity. Also known as diode ac switch (diac). { 'trig·ər 'dī,ōd }

triggered spark gap [ELEC] A fixed spark gap in which the discharge passes between two electrodes but is initiated by an auxiliary trigger electrode to which low-power pulses are applied at regular intervals by a pulse amplifier. { 'trig·ərd 'spärk ,gap }

trigger electrode *See* starter. { 'trig·ər i,lek·trōd }

triggering [ELECTR] Phenomenon observed in some high-performance magnetic amplifiers with very low leakage rectifiers; as the input current is decreased in magnitude, the amplifier remains at cutoff for some time, and the output then suddenly shoots upward. { 'trig·ə·riŋ }

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