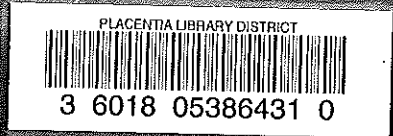


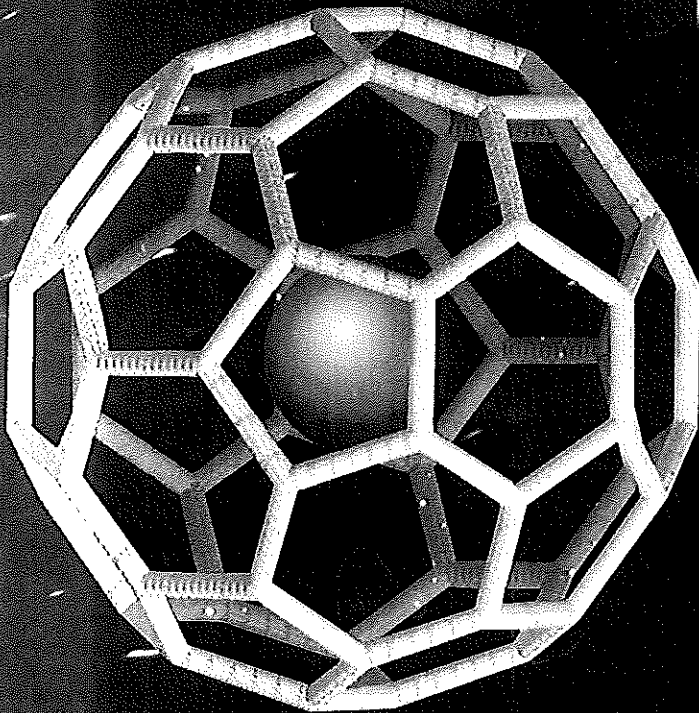
# EXHIBIT A

# McGraw-Hill Dictionary



of

# SCIENTIFIC and TECHNICAL TERMS



## Sixth Edition

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**On the cover: Representation of a fullerene molecule with a noble gas atom trapped inside. At the Permian-Triassic sedimentary boundary the noble gases helium and argon have been found trapped inside fullerenes. They exhibit isotope ratios quite similar to those found in meteorites, suggesting that a fireball meteorite or asteroid exploded when it hit the Earth, causing major changes in the environment. (Image copyright © Dr. Luann Becker. Reproduced with permission.)**

Over the six editions of the Dictionary, material has been drawn from the following references: G. M. Garrity et al., *Taxonomic Outline of the Prokaryotes*, Release 2, Springer-Verlag, January 2002; D. W. Linzey, *Vertebrate Biology*, McGraw-Hill, 2001; J. A. Pechenik, *Biology of the Invertebrates*, 4th ed., McGraw-Hill, 2000; *U.S. Air Force Glossary of Standardized Terms*, AF Manual 11-1, vol. 1, 1972; F. Casey, ed., *Compilation of Terms in Information Sciences Technology*, Federal Council for Science and Technology, 1970; *Communications-Electronics Terminology*, AF Manual 11-1, vol. 3, 1970; P. W. Thrush, comp. and ed., *A Dictionary of Mining, Mineral, and Related Terms*, Bureau of Mines, 1968; *A DOD Glossary of Mapping, Charting and Geodetic Terms*, Department of Defense, 1967; J. M. Gilliland, *Solar-Terrestrial Physics: A Glossary of Terms and Abbreviations*, Royal Aircraft Establishment Technical Report 67158, 1967; W. H. Allen, ed., *Dictionary of Technical Terms for Aerospace Use*, National Aeronautics and Space Administration, 1965; *Glossary of Stunfo Terminology*, Office of Aerospace Research, U.S. Air Force, 1963; *Naval Dictionary of Electronic, Technical, and Imperative Terms*, Bureau of Naval Personnel, 1962; R. E. Huschke, *Glossary of Meteorology*, American Meteorological Society, 1959; *ADP Glossary*, Department of the Navy, NAVSO P-3097; *Glossary of Air Traffic Control Terms*, Federal Aviation Agency; *A Glossary of Range Terminology, White Sands Missile Range, New Mexico*, National Bureau of Standards, AD 467-424; *Nuclear Terms: A Glossary*, 2d ed., Atomic Energy Commission.

**McGraw-Hill Dictionary of Scientific and Technical Terms,  
Sixth Edition**

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the range just above and just below the acoustic velocity. { 'tranz'sän-'ik 'fö }.

**transonic range** [FL MECH] The range of speeds between the speed at which one point on a body reaches supersonic speed, and the speed at which all points reach supersonic speed. { 'tranz'sän-'ik 'rænj }

**transonic speed** [FL MECH] The speed of a body relative to the surrounding fluid at which the flow is in some places on the body subsonic and in other places supersonic. { 'tranz'sän-'ik 'sped }

**transonic wind tunnel** [ENG] A type of high-speed wind tunnel capable of testing the effects of airflow past an object at speeds near the speed of sound, Mach 0.7 to 1.4; sonic speed occurs where the cross section of the tunnel is at a minimum, that is, where the test object is located. { 'tranz'sän-'ik 'wind 'tʌn-əl }

**transorbital lobotomy** [MED] A lobotomy performed through the roof of the orbit. { 'tranz'ɔr-'bæd-'əl lə'bäd-'ə-mē }

**transosonde** [ENG] The flight of a constant-level balloon, whose trajectory is determined by tracking with radio-direction-finding equipment; thus, it is a form of upper-air, quasi-horizonal sounding. { 'tranz'zə-'sænd }

**transparency** [GRAPHICS] An image fixed on a clear base by means of a photographic, printing, chemical, or other process, especially adaptable for viewing by transmitted light. [OPTICS] The ability of a substance to transmit light of different wavelengths, sometimes measured in percent of radiation which penetrates a distance of 1 meter. { 'tranz'par-'ən-sē }

**transparency range** [NUC PHYS] A postulated energy range for extremely high-energy heavy-ion collisions in which the projectile passes through the target and emerges with its temperature and density raised to the point at which a quark-gluon plasma forms. { 'tranz'par-'ən-sē 'rænj }

**transparent** [COMPUT SCI] Pertaining to a device or system that processes data without the user being aware of or needing to understand its operation. [PHYS] Permitting passage of radiation or particles. { 'tranz'par-'ənt }

**transparent medium** [OPTICS] 1. A medium which has the property of transmitting rays of light in such a way that the human eye may see through the medium distinctly. 2. A medium transparent to other regions of the electromagnetic spectrum, such as x-rays and microwaves. { 'tranz'par-'ənt 'med-'ē-əm }

**transparent sky cover** [METEOROL] In United States weather-observing practice, that portion of sky cover through which higher clouds and blue sky may be observed; opposed to opaque sky cover. { 'tranz'par-'ənt 'skɪ 'kəv-ər }

**transpassive region** [PHYS CHEM] That portion of an anodic polarization curve in which metal dissolution increases as the potential becomes noble. { 'tranz'pas-'iv 'rɛ-'jən }

**transphaser** [OPTICS] A nonlinear optical device that uses one light beam to modulate another, in a manner analogous to an electronic transistor, and that operates through the transference of a phase shift from one beam to the other. { 'tranz 'fæz-ər }

**transpiration** [BIOL] The passage of a gas or liquid (in the form of vapor) through the skin, a membrane, or other tissue. { 'tranz'pə-'rā-'ʃən }

**transpiration cooling** See sweat cooling. { 'tranz'pə-'rā-'ʃən 'kʊl-'ɪŋ }

**transplantation** [BIOL] 1. The artificial removal of part of an organism and its replacement in the body of the same or of a different individual. 2. To remove a plant from one location and replant it in another place. { 'tranz'plan-'tā-'ʃən }

**transplantation antigen** [IMMUNOL] An antigen in a cell which induces a histocompatibility reaction when the cell is transplanted into an organism not having that antigen. { 'tranz'plan-'tā-'ʃən 'ant-'i-'jən }

**transplantation disease** [MED] Disease ascribable to an immunological graft-versus-host reaction which occurs after transplantation of adult lymphoid cells to incompatible recipients who cannot reject them. { 'tranz'plan-'tā-'ʃən di-'zēz }

**transplanter** [AGR] A special kind of equipment designed for the planting of cuttings or small plants; it transports one or more workers who assist the action of the machine in placing plants in a furrow and covering them; it commonly supplies a small quantity of water to each plant. { 'tranz'plan-'tər }

**transplutonium element** [INORG CHEM] An element having

an atomic number greater than that of plutonium (94). { 'tranz'plə-'tō-'ne-əm 'el-'ə-mənt }

**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'pə-'lə-'rɪz-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 'be-'kæn }

**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 'tɪm }

**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 'set }

**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 'tɪm 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. [ENG] Conveyance equipment such as vehicular transport, hydraulic transport, and conveyor-belt setups. [NAV ARCH] A ship designed to carry military personnel from one place to another. Also known as troop ship. { 'trans'pɔrt (verb), 'tranz,pɔrt (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'pɔrt-'ə-bəl kəm'pyʊt-ər }

**transportation** [GEOL] A phase of sedimentation concerned with movement by natural agents of sediment or any loose or weathered material from one place to another. { 'tranz'pɔrt-'tā-'ʃən }

**transportation emergency** [ENG] A situation which is created by a shortage of normal transportation capability and of a magnitude sufficient to frustrate movement requirements, and which requires extraordinary action by the designated authority to ensure continued movement. { 'tranz'pɔrt-'tā-'ʃən i,mər-'jən-sē }

**transportation engineering** [ENG] That branch of engineering relating to the movement of goods and people; major types of transportation are highway, water, rail, subway, air, and pipeline. { 'tranz'pɔrt-'tā-'ʃən ,en-'jə-nɪr-'ɪŋ }

**transportation lag** See distance/velocity lag. { 'tranz'pɔrt-'tā-'ʃən ,lag }

**transportation priorities** [ENG] Indicators assigned to eligible traffic which establish its movement precedence; appropriate priority systems apply to the movement of traffic by sea and air. { 'tranz'pɔrt-'tā-'ʃən prɪ-'ər-'əd-'ēz }

**transportation problem** [IND ENG] A programming problem that is concerned with the optimal pattern of the distribution of goods from several points of origin to several different destinations, with the specified requirements at each destination. { 'tranz'pɔrt-'tā-'ʃən ,prɒb-'ləm }

**transport capacity** [ENG] The number of persons or the tonnage (or volume) of equipment which can be carried by a vehicle under given conditions. { 'tranz,pɔrt kə,pas-'əd-'ē }

**transport case** [ENG] A moistureproof nonconductive wood, plastic, or fabric container used to transport safely small quantities of dynamite sticks to and from blasting sites. { 'tranz,pɔrt ,kās }

**transport cross section** [PHYS] The product of the total scattering cross section and the average value of  $1 - \cos \theta$ , where  $\theta$  is the laboratory scattering angle. { 'tranz,pɔrt 'krɒs ,sek-'ʃən }