

# EXHIBIT 3

# Chambers Dictionary of Science and Technology

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Chambers

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**Gaussian curvature** (MathSci) See CURVATURE (3).

**Gaussian distribution** (MathSci) See NORMAL DISTRIBUTION.

**Gaussian noise** (Acous) Any noise whose frequency shows a Gaussian distribution.

**Gaussian noise** (ICT) An unwanted, randomly fluctuating electrical signal, due for example to thermal motion of electrons in a resistor, whose probability density function is given by the Gaussian or normal distribution. For a stationary system in which the average noise voltage is zero, the average noise power is proportional to the VARIANCE of the signal.

**Gaussian optics** (Phys) Simple optical theory which does not consider the aberration of lenses. Practically, it applies only to paraxial rays.

**Gaussian points** (Phys) See PRINCIPAL POINTS OF A LENS.

**Gaussian response** (Phys) The response, eg of an amplifier, for a transient impulse, which, when differentiated, matches the Gaussian distribution curve.

**Gaussian units** (Phys) Formerly widely used system of electric units where quantities associated with electric field are measured in ELECTROSTATIC UNITS and those associated with magnetic field in ELECTROMAGNETIC UNITS. This involves introducing a constant  $c$  (the free space velocity of electromagnetic waves) into MAXWELL'S EQUATIONS.

**Gaussian well** (Phys) A particular form of POTENTIAL WELL used to describe the distribution of potential energy of a nuclear particle in the field of the nucleus or other nuclear particle.

**gaussmeter** (ElecEng) An instrument measuring magnetic flux density. This term is most widely used in the USA.

**Gauss's convergence test** (MathSci) The theorem that if, for a series of positive terms  $\sum a_n$

$$n\left(\frac{a_n}{a_{n+1}} - 1\right) = \sigma + \left(\frac{1}{n^\delta}\right), \quad \delta > 0$$

then  $\sum a_n$  is convergent if  $\sigma > 1$  and divergent if  $\sigma \leq 1$ . This test is an extension of Raabe's test.

**Gauss's differential equation** (MathSci) The equation

$$x(1-x)\frac{d^2y}{dx^2} + [c - (a+b+1)x]\frac{dy}{dx} - aby = 0$$

It is satisfied by the hypergeometric function  $F(a;b;c;x)$ . Also *hypergeometric equation*.

**Gauss's laws** (ElecEng) Laws concerning electrostatics and magnetostatics. The surface integral of the normal component of electric displacement (or magnetic flux) over any closed surface in a dielectric is equal to the total electric charge enclosed (or to zero in the magnetic case). Differential forms of these laws constitute two of MAXWELL'S FIELD EQUATIONS. See POISSON'S EQUATION.

**Gauss's theorem** (MathSci)

$$\int_S \frac{\partial \phi}{\partial n} dS = \int_V \nabla^2 \phi dV$$

where the surface  $S$  is the boundary of the volume  $V$  and  $n$  is the normal direction to  $S$ . Cf GREEN'S THEOREM.

**gauze** (Textiles) A lightweight woven fabric of open texture.

**gavage** (Agri) Forced feeding of birds being fattened for meat production.

**gavel** (Build) A mallet used for setting stones.

**gavelock** (Build) An iron crowbar. Also *gablock*.

**Gay-Lussac's law** (Chem) (1) Of volumes: when gases react, they do so in volumes which bear a simple ratio to one another and to the volumes of the resulting substances in the gaseous state, all volumes being measured at the same temperature and pressure. (2) See CHARLES'S LAW.

**gay-lussite** (Min) A rare grey hydrated carbonate of sodium

**Gb** (ICT) Abbrev for GIGABYTE.

**G-banding** (BioSci) See BANDING TECHNIQUES and panel on CHROMOSOME.

**GBL** (Chem) Abbrev for *gamma-butyrolactone*, a colourless liquid used as a solvent and sometimes as a recreational drug.

**GCA** (Aero, Radar) Abbrev for GROUND-CONTROLLED APPROACH.

**GCI** (Aero, Radar) Abbrev for GROUND-CONTROLLED INTERCEPTION.

**G clamp** (Build) One in the shape of a G, with a screw passing through one end. The shoe is sometimes swivelled to enable the clamp to be used on tapered surfaces. Also *G clamp*.

**Gd** (Chem) Symbol for GADOLINIUM.

**G-display** (Radar) Similar to F-DISPLAY but indicating increasing or diminishing range of target by increasing or diminishing lateral extension of the spot.

**Ge** (Chem) Symbol for GERMANIUM.

**geanticline** (Geol) A regional upwarping of the crust of the Earth. Cf GEOSYNCLINE.

**gear** (Eng) (1) Any system of moving parts transmitting motion, eg levers, gear wheels, etc. (2) A set of tools for performing some particular work. (3) A mechanism built to perform some special purpose, eg steering gear, valve gear. (4) The position of the links of a steam-engine valve motion, as astern gear, mid-gear, etc. (5) The actual gear ratio in use, or the gear wheels involved in transmitting that ratio, in an automobile gearbox, as 'first gear', 'third gear', etc.

**gearbox** (Eng) Casing containing a GEAR TRAIN. The term commonly stands also for the casing including its gear train, particularly when applied to gearboxes used with engines or with machine tools.

**gear cluster** (Eng) A set of gear wheels integral with, or permanently attached to, a shaft, as on the lay shaft of an automobile gearbox.

**gear cutters** (Eng) Milling cutters, hobs, etc, having the requisite tooth form for cutting teeth on gear wheels.

**geared lathe** (Eng) A lathe provided with a BACK GEAR or a multi-speed gearbox between the driving motor and the head.

**geared turbogenerator** (ElecEng) An electric generator driven through a reduction gear from a steam turbine, the object being to enable both machines to operate at their most economical speeds.

**gearing** (Eng) Any set of gear wheels transmitting motion. See GEAR.

**gearing-down** (Eng) A reduction in speed between a driving and a driven wheel or unit, eg between the engine of an automobile and the road wheels.

**gearing-up** (Eng) Raising the speed of a driven unit above that of its driver by the use of gears.

**gearless motor** (ElecEng) A traction motor mounted directly on the driving axle of an electric locomotive.

**gear lever** (Eng) A lever used to move gear wheels relative to each other to change gear. In a motor car, this lever acts on the gear wheels indirectly through SELECTOR FORKS.

**gear marks** (Print) Slurred streaks or bands across the printed sheet or web caused by uneven rotation of cylinder.

**gear pump** (Eng) A small pump consisting of a pair of gear wheels in mesh, enclosed in a casing, the fluid being carried round from the suction to the delivery side in the tooth spaces; used for lubrication systems etc.

**gear-tooth forming** (Eng) A family of engineering processes, including casting, plastic moulding, stamping from sheet metal for watch and clock gears, form cutting, gear shaping, hobbing and other methods of gear-tooth generating.

**gear train** (Eng) Two or more GEAR WHEELS, transmitting motion from one shaft to another. With external spur or