

McGRAW-HILL DICTIONARY OF SCIENTIFIC AND TECHNICAL TERMS

**Sixth
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Tessell Exhibit 1102
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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 Stinfo 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.

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recoil milking [NUCLEO] A technique for detecting transmutation recoil atoms knocked out of a target by heavy-ion bombardment, in which the atoms come to rest in a stream of helium or other gas which carries them through an orifice to a rough vacuum where they are adsorbed on a surface and their radioactivity detected. { 'rē,kōil,milk-ŋ }

recoil oil [MATER] A neutral, constant-viscosity oil used in hydropneumatic and hydrospring recoil systems. { 'rē,kōil,ōil }

recoil particle [PHYS] A particle that has been set into motion by a collision or by a process involving the ejection of another particle. { 'rē,kōil,pārd-ə-kəl }

recoil pit [ORD] Pit dug near the breech of a gun to provide space for the breech when it moves backward during recoil. { 'rē,kōil,pit }

recoil velocity [ORD] Velocity in recoil of the recoiling parts of a gun. { 'rē,kōil,və,lās-əd-ē }

recombinant [GEN] Any new cell, individual, or molecule that is produced in the laboratory by recombinant deoxyribonucleic acid technology or that arises naturally as a result of recombination. { rē'kām-bə-nənt }

recombinant DNA [CELL MOL] Deoxyribonucleic acid (DNA) that has been altered (caused to recombine) by rearrangement of its sequence, addition or deletion of DNA segments, or introduction of foreign DNA segments (for example, a gene from another organism introduced into an organism's genome). { rē'kām-bə-nənt 'dē'en-ā }

recombinant technology [GEN] 1. In genetic engineering, laboratory techniques used to join deoxyribonucleic acid (DNA) from different sources to produce novel DNA. Also known as gene splicing. 2. In genetic engineering, laboratory techniques used to join ribonucleic acid (RNA) from different sources to produce novel RNA. { rē'kām-bə-nənt tek'nāl-ə-jē }

recombination [GEN] 1. The occurrence of gene combinations in the progeny that differ from those of the parents as a result of independent assortment and crossing-over. 2. The production of genetic information in which some elements of one line of descent are replaced or added to by those of another line. [PHYS] The combination and resultant neutralization of particles or objects having unlike charges, such as a hole and an electron or a positive ion and a negative ion. { rē,kām-bə'nā-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. { rē,kām-bə'nā-shən,kō-i,fish-ənt }

recombination electroluminescence See injection electroluminescence. { rē,kām-bə'nā-shən i'lek-trō,lū-mə'nes-əns }

recombination energy [PHYS] The energy released when two oppositely charged portions of an atom or molecule rejoin to form a neutral atom or molecule. { rē,kām-bə'nā-shən,en-ər-jē }

recombination frequency [GEN] The number of recombinants divided by the total number of progeny. { rē'kām-bə'nā-shən,fir-əkwən-sē }

recombination mosaic [GEN] A mosaic produced as the result of somatic crossing-over. { rē,kām-bə'nā-shən mō,zā-ik }

recombination radiation [SOLID STATE] The radiation emitted in semiconductors when electrons in the conduction band recombine with holes in the valence band. { rē,kām-bə'nā-shən,rād-ē,ā-shən }

recombination repair [MOL BIO] A repair mechanism involving exchange of correct for incorrect segments between two damaged deoxyribonucleic acid molecules. { rē,kām-bə'nā-shən ri,per }

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. { rē,kām-bə'nā-shən,və,lās-əd-ē }

recombinator [MOL BIO] Any nucleotide sequence that stimulates genetic recombination at neighboring sites. { rē'kām-bə,nād-ər }

recompletion [PETRO ENG] Redrilling an oil well to a new

producing zone (new depth) when the current zone is depleted. { rē'kām'plē-shən }

recomposed granite [PETR] An arkose composed of consolidated feldspathic residue that has been reworked and decomposed so slightly that upon cementation the rock resembles granite except that its grain is less even and it contains a greater percentage of quartz. Also known as reconstructed granite. { rē'kām'pōzd 'gran-ət }

recomposed rock [PETR] A rock produced in place by the cementation of the fragmental products of surface weathering; for example, a recomposed granite. { rē'kām'pōzd 'rāk }

recomputed point of turn [NAV] An altered dead-reckoning position of an aircraft at a turning point, determined after wind has been established by drift observations made before and after the turn. { 'rē-kām,pyūd-əd,pōint əv 'tərn }

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. { rē,kən'dish-ənd 'kar-ē-ər ri,sep-shən }

reconditioning [ENG] Restoration of an object to a good condition. { rē'kən'dish-ən-ŋ }

reconnaissance [ENG] A mission to secure data concerning the meteorological, hydrographic, or geographic characteristics of a particular area. [ORD] A mission undertaken to obtain, by visual observation or other detection methods, information about the activities and resources of an enemy or potential enemy. { ri'kän-ə'səns }

reconnaissance drone [AERO ENG] An uncrewed aircraft guided by remote control, with photographic or electronic equipment for providing information about an enemy or potential enemy. { ri'kän-ə'səns,drōn }

reconnaissance map [MAP] A map based on the information obtained in a reconnaissance survey. { ri'kän-ə'səns,map }

reconnaissance spacecraft [AERO ENG] A satellite put into orbit about the earth and containing electronic equipment designed to pick up and transmit back to earth information pertaining to activities such as military. { ri'kän-ə'səns'spās,kraft }

reconnaissance survey [ENG] A preliminary survey, usually executed rapidly and at relatively low cost, prior to mapping in detail and with greater precision. { ri'kän-ə'səns,sər,vā }

reconnection [ASTRON] The rejoining of solar magnetic field lines that have been severed at a neutral region. { rē'kə'nek-shən }

reconstituted mica [MATER] Mica sheets or shaped objects made by breaking up scrap natural mica, combining with a binder, and pressing into forms suitable for use as electrical insulating material. { rē'kän-stə,tüd-əd 'mī-kə }

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. [GEOL] The formation of new chemicals, minerals, or structures under the influence of metamorphism. { rē,kän-stə'tü-shən }

reconstructed coal [MATER] Coal formed from crushed or powdered, briquetted lignite or coal, waterproofed with a coating of pitch. { rē'kän'strək-təd 'kōl }

reconstructed granite See recomposed granite. { rē'kän'strək-təd 'gran-ət }

reconstructed stone [LAP] A gem material made by the fusing or sintering of small particles of the genuine stone. { rē'kän'strək-təd 'stōn }

reconstruction [SOLID STATE] A process in which atoms at the surface of a solid displace and form bands different from those existing in the bulk solid. { rē'kän'strək-shən }

reconstructive processing [INORG CHEM] The spinning of an inorganic compound of an organic support or binder subsequently removed by oxidation or volatilization to form an inorganic polymer. { rē'kän'strək-tiv 'prā,ses-ŋ }

reconstructive transformation [CRYSTAL] A type of crystal transformation that involves the breaking of either first- or second-order coordination bonds. { rē'kän'strək-tiv 'tranz-fər'mā-shən }

recontrol time See deionization time. { rē'kən'trōl,tīm }

record [COMPUT SCI] A group of adjacent data items in a computer system, manipulated as a unit. Also known as entity.

[SCI TECH] 1. To preserve for later reproduction or reference.

2. See recording. { 'rek-ərd }

record block See physical record. { 'rek-ərd ,blæk }

record changer [ENG ACOUS] A record player that plays a number of records automatically in succession. { 'rek-ərd ,chānj-ər }

record density See bit density; character density. { 'rek-ərd ,den-səd-ē }

recorder See recording instrument. { ri'kɔrd-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 ,gap }

record head See recording head. { ri'kɔrd ,hed }

recording [SCI TECH] 1. Any process for preserving signals, sounds, data, or other information for future reference or reproduction, such as disk recording, facsimile recording, ink-vapor recording, magnetic tape or wire recording, and photographic recording. 2. The end product of a recording process, such as the recorded magnetic tape, disk, or record sheet. Also known as record. { ri'kɔrd-ɪŋ }

recording balance [ANALY CHEM] An analytical balance equipped to record weight results by electromagnetic or servomotor-driven accessories. { ri'kɔrd-ɪŋ ,bal-əns }

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'kɔrd-ɪŋ ,kəm'pləd-ɪŋ ,trɒŋk }

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'kɔrd-ɪŋ ,den-səd-ē }

recording head [ELECTR] A magnetic head used only for recording. Also known as record head. [ENG ACOUS] See cutter. { ri'kɔrd-ɪŋ ,hed }

recording instrument [ENG] An instrument that makes a graphic or acoustic record of one or more variable quantities. Also known as recorder. { ri'kɔrd-ɪŋ ,ɪn-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'kɔrd-ɪŋ ,lamp }

recording level [ELECTR] Amplifier output level required to secure a satisfactory recording. { ri'kɔrd-ɪŋ ,lev-əl }

recording noise [ELECTR] Noise that is introduced during a recording process. { ri'kɔrd-ɪŋ ,nɔɪz }

recording optical tracking instrument [ENG] Optical system used for recording data in connection with missile flights. { ri'kɔrd-ɪŋ ,ɒp-tə-kəl 'trak-ɪŋ ,ɪn-strə-mənt }

recording rain gage [ENG] A rain gage which automatically records the amount of precipitation collected, as a function of time. Also known as pluviograph. { ri'kɔrd-ɪŋ 'ræn ,gæj }

recording spot See picture element. { ri'kɔrd-ɪŋ ,spæt }

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'kɔrd-ɪŋ 'stɔr-ɪj ,tüb }

recording thermometer See thermograph. { ri'kɔrd-ɪŋ θər'mi-əd-ər }

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'kɔrd-ɪŋ ,trɒŋk }

record layout [COMPUT SCI] A form showing how fields are positioned within a record, usually with information about each field. { 'rek-ərd ,lā,aut }

record length [COMPUT SCI] The number of characters required for all the information in a record. { 'rek-ərd ,lɛŋkθ }

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 ,læk-ɪŋ }

record mark [COMPUT SCI] A symbol that signals a record's beginning or end. { 'rek-ərd ,mɑrk }

record observation [METEOROL] A type of aviation weather observation; the most complete of all such observations and usually taken at regularly specified and equal intervals (hourly, usually on the hour). Also known as hourly observation. { 'rek-ərd ,əb-zər,və-shən }

record player [ENG ACOUS] A motor-driven turntable used with a phonograph pickup to obtain audio-frequency signals from a phonograph record. { 'rek-ərd ,plā-ər }

record storage mark [COMPUT SCI] A special character which appears only in the record storage unit of the card reader to limit the length of the record read into storage. { 'rek-ərd 'stɔr-ɪj ,mɑrk }

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 ,ver-ē-ə-bəl }

recoupling [QUANT MECH] A transformation between eigenfunctions of total angular momentum resulting from coupling eigenfunctions of three or more angular momenta in some order, and eigenfunctions of total angular momentum resulting from coupling of the same eigenfunctions in a different order. { rē'kəp-ɪŋ }

recoverable shear [FL MECH] Measure of the elastic content of a fluid, related to elastic recovery (mechanicallike property of elastic recoil); found in unvulcanized, unfilled natural rubber, and certain polymer solutions, soap gels, and biological fluids. { ri'kəv-ə-rə-bəl 'ʃɪr }

recovered oil See reclaimed oil. { ri'kəv-ərd 'ɔɪl }

recovery [AERO ENG] 1. The procedure or action that obtains when the whole of a satellite, or a section, instrumentation package, or other part of a rocket vehicle, is retrieved after a launch. 2. The conversion of kinetic energy to potential energy, such as in the deceleration of air in the duct of a ramjet engine. Also known as ram recovery. 3. In flying, the action of a lifting vehicle returning to an equilibrium attitude after a nonequilibrium maneuver. [HYD] The rise in static water level in a well, occurring upon the cessation of discharge from that well or a nearby well. [MECH] The return of a body to its original dimensions after it has been stressed, possibly over a considerable period of time. [MET] 1. The percentage of valuable material obtained from a processed ore. 2. Reduction or elimination of work-hardening effects, usually by heat treatment. [MIN ENG] The proportion or percentage of coal or ore mined from the original seam or deposit. [PETRO ENG] The removal (recovery) of oil or gas from reservoir formations. { ri'kəv-ə-rē }

recovery area [AERO ENG] An area in which a satellite, satellite package, or spacecraft is recovered after reentry. { ri'kəv-ə-rē ,er-ē-ə }

recovery capsule [AERO ENG] A space capsule designed to be recovered after reentry. { ri'kəv-ə-rē ,kap-səl }

recovery factor [PETRO ENG] The ratio of recoverable oil reserves to the oil in place in a reservoir. { ri'kəv-ə-rē 'fak-tər }

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 'ɪnt-ə-rəpt }

recovery package [AERO ENG] A package attached to a reentry or other body designed for recovery, containing devices intended to locate the body after impact. { ri'kəv-ə-rē ,pak-ɪj }

recovery party [ORD] A form of contact party whose purpose is the recovery of disabled ordnance materiel from predesignated collecting points, and the transportation of this materiel to the ordnance shops for repairs. { ri'kəv-ə-rē ,pɑrd-ē }

recovery room [MED] A hospital room in which surgical patients are kept during the period immediately following an operation for care and recovery from anesthesia. { ri'kəv-ə-rē ,rüm }

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 rü,tēn }

recovery ship [NAV ARCH] A naval vessel designed to participate in the retrieval of a satellite, instrument package, or spaceship after it has reentered the atmosphere and landed in the ocean. { ri'kəv-ə-rē ,ʃɪp }

recovery system [COMPUT SCI] A system for recognizing a malfunction in a data-base management system, reporting it,