Vincoli, Jeffrey W. "E-H"
*Lewis' Dictionary of Occupational and Environmental Safety and Health*
Edited by Jeffrey W. Vincoli
Boca Raton: CRC Press LLC, 2000
ear

A structure within and external to the side of the head consisting of three major aspects (external ear, middle ear, and inner ear), which is used for hearing and equilibrium. The outer ear consists of the auricle, or pinna, and the external acoustic meatus. The auricle collects sound waves and directs them to the external acoustic meatus which conducts them to the tympanum (the cavity of the middle ear). The tympanic membrane (eardrum) separates the outer ear from the middle ear. In the middle ear are the three ossicles: the malleus (referred to as the "hammer" because of its shape), the incus (or "anvil") and the stapes (or "stirrup"). These three small bones form a chain across the middle ear from the tympanum to the oval window in the membrane separating the middle ear from the inner ear. The middle ear is connected to the nasopharynx by the Eustachian tube, through which the air pressure on the inner side of the eardrum is equalized with the air pressure on its outside surface. The middle ear is also connected with the cells in the mastoid bone just behind the outer ear. Two muscles attached to the ossicles contract when loud noises strike the tympanic membrane, limiting its vibration and thus protecting it and the inner ear from damage. In the inner ear (or labyrinth) is the cochlea, containing the nerves that transmit sound to the brain. The inner ear also contains the semicircular canals, which are essential to the sense of balance. When sound strikes the ear, it causes the tympanic membrane to vibrate. The ossicles function as levers, amplifying the motion of the tympanic membrane, and passing the vibrations on to the cochlea. From there, the vestibulocochlear (eighth cranial) nerve transmits the vibrations, translated into nerve impulses, to the auditory center in the brain. See also external ear, middle ear, and inner ear.

ear breadth

The horizontal linear distance from the most anterior point to the most posterior point of the external ear. Measured with the head level and the scalp and facial muscles relaxed.

ear clearing

The process of equalizing pressure between the middle ear and the external environment. Commonly accomplished by holding one's mouth closed, pinching the nostrils closed, and gently blowing through the nose until the pressure is equalized.

ear defender

Outdated term for devices, such as earplugs, earmuffs, canal caps, etc., that are used by individuals to provide personal hearing protection from noise.

ear insert

A hearing protective device that is designed to be inserted into the ear canal in order to reduce the level of noise reaching the hearing sensitive part of the ear.

ear length

The vertical distance between the highest point of the upper rim and the most inferior point of the ear lobe of the external ear. Measured with the head level and the scalp and facial muscles relaxed.

ear length above tragion

The vertical distance along the axis of the auricle from tragion to the level of the upper rim.

ear mark

A mark put upon a thing to distinguish it from another. Originally, and literally, a mark upon the ear; a mode of marking sheep and other animals.
ear mark rule
Through the process of commingling money or deposits with funds already in a bank, the money or deposits lose their "identity," with the resultant effect of defeating the right of preference over general creditors.

ear protector
Any device designed to reduce the level of noise passing through a person's auditory system (ear muffs, ear plugs, etc.).

ear protrusion
The horizontal distance from the bony eminence directly behind the auricle to the most lateral protrusion of the auricle. Measured with the head level and the scalp and facial muscles relaxed.

ear squeeze
See barotalgia.

ear witness
In the law of evidence, one who attests or can attest anything as heard by himself/herself.

earache
Pain in the ear. Medically referred to as otalgia.

earblock
The failure of the middle ear to equalize pressure with the external environment due to blockage of the Eustachian tube.

earcon
The auditory counterpart of the visual icon.

earcup
The cavity on the lateral interior structure of a helmet, headphone, or other headgear, into which the pinna is expected to fit when the headgear is worn.

eardrum
The tympanic membrane that separates the outer ear from the middle ear.

ear flap
Any piece of cloth, fur, or other soft material designed into headwear for protecting the auricle from cold, sun, or other environmental stressors.

earlier maturity rule
The rule under which bonds maturing first are entitled to priority when the sale of a security is not sufficient to satisfy all obligations.

earlobe
The fleshy tissue at the base of the auricle.

earmuffs
Devices worn to protect against hearing loss in high-noise environments or to protect against exposure to cold. See also circumaural protectors.

earn
To acquire by labor, service, or performance. To merit or deserve, as for labor or service.

earned income
Income from services (e.g., salaries, wages, or fees); distinguished from passive, portfolio, and other unearned income.

earned income credit
A refundable tax credit on earned income up to a certain amount for low income workers who maintain a household for dependent children. The amount of the credit is reduced dollar for dollar if earned income (or adjusted gross income) is greater than a specified amount.

earned premium
In insurance, that portion of the premium properly allocable to a policy which has expired. An "earned premium" is the difference between the premium paid by the insured and the portion returnable to him/her by the insurance company on cancellation of the policy during its term.

earned surplus
Retained earnings. That species of surplus which has been generated from profits as contrasted with paid-in surplus. The term relates to the net accumulation of profits. It is a part of the surplus that represents net earnings, gains or profits, after deduction of all losses, but has not been distributed as dividends, or transferred to stated capital or capital surplus, or applied to other purposes permitted by law.

earned time
The standard time, in a specified time unit (usually hours), which is credited to one or a group of personnel on completion of one or more jobs.

earnest money
A sum of money paid by a buyer at the time of entering a contract to indicate the intention and ability of the buyer to carry out the con-
tract. Normally, such earnest money is applied against the purchase price. Often, the contract provides for forfeiture of this sum if the buyer defaults.

**earning capacity**
Refers to the capability of a worker to sell his/her labor or services in any market reasonably accessible to him/her, taking into consideration his/her general physical functional impairment resulting from his/her accident, any previous disability, his/her occupation, age at the time of injury, nature of the injury, and his/her wages prior to and after the injury. The term does not necessarily mean the actual earnings that one who suffers an injury was making at the time the injuries were sustained, but refers to that which, by virtue of the training, the experience, and the business acumen possessed, an individual is capable of earning.

**earnings**
*Income.* That which is earned (i.e., money earned from the performance of labor, services, sale of goods, etc.). *Gross earnings.* Total income from all sources without considering deductions, personal exemptions, or other reductions of income in order to arrive at taxable income. *Net earnings.* The excess of gross income over expenses incurred in connection with the production of such income.

**earnings and profits**
A tax concept peculiar to corporate taxpayers which measures the economic capacity to make a distribution to shareholders that is not a return of capital. Such a distribution will result in dividend income to the shareholders to the extent of the corporation's current and accumulated earnings and profits.

**earnings per share**
One common measure of the value of common stock. The figure is computed by dividing the net earnings for the year (after interest and prior dividends) by the number of shares of common stock outstanding.

**earnings profile**
An individual's anticipated future annual income from employment. Use often during litigation proceedings of wrongful death claims to determine the lifetime earnings the deceased would have been expected to accumulate had the fatality never occurred.

**earphone**
An electro-acoustic transducer intended to be closely coupled acoustically to the ear.

**earplugs**
Any device which fits into the external auditory canal for the purpose of reducing the acoustic intensity reaching the eardrum. Usually constructed of a soft, sponge-like material allowing for "one-size-fits-all." See also *aural insert protectors and ear protector.*

**earring**
A piece of jewelry worn on or about the earlobe. It can be fastened by a mechanical clip or pierced directly through the lobe or other portion of the external ear.

**earth surface**
The outermost surface of the land and waters of the planet.

**earthquake**
See *plate tectonics.*

**earwax**
Cerumen.

**EAS**
See *Employee Aptitude Survey.*

**ease**
To provide or obtain comfort, consolation, contentment, enjoyment, happiness, pleasure, satisfaction.

**easement**
A right of use over the property of another. Traditionally the permitted kinds of uses were limited, the most important being rights of way and rights concerning flowing waters. The easement was normally for the benefit of adjoining lands, no matter who the owner was (an *easement appurtenant*), rather than for the benefit of a specific individual (*easement in gross*). The land having the dominant tenement and the land which is subject to the easement is known as the *servient tenement.*

**easterly wave**
A migratory wavelike disturbance in the tropical easterlies. Easterly waves occasionally intensify into tropical cyclones.

**Eastern California Shear Zone (ECSZ)**
A region of increased seismic activity which stretches from the San Andreas fault near In-
dio, north-northwest across the Mojave and northward into Owens Valley. It may accommodate as much as 10 to 20 percent of the relative motion between the North American and Pacific Plates.

EAT
Earnings after taxes.

eat inde sine die
Law (Latin). Words used on the acquittal of a defendant, or when a prisoner is to be discharged, that he may go hence without a day, (i.e., be dismissed without any further continuance or adjournment).

eaves-drip
The drip or dropping of water from the eaves of a house on the land of an adjacent owner; the easement of having the water so drip, or the servitude of submitting to such drip.

eavesdropping
Knowingly and without lawful authority: a) entering into a private place with intent to listen surreptitiously to private conversations or to observe the personal conduct of any other person or persons therein; or b) installing or using outside a private place any device for hearing, recording, amplifying, or broadcasting sounds originating in such place, which sounds would not ordinarily be audible or comprehensible outside, without the consent of the person or persons entitled to privacy therein; or c) installing or using any device or equipment for the interception of any telephone, telegraph, or other wire communication without the consent of the person in possession or control of the facilities for such wire communication. Such activities are regulated by state and federal statutes, and commonly require a court order.

ebonation
The removal of loose pieces of bone from a wound.

ebriety
Drunkenness; alcoholic intoxication.

Ebstein's anomaly
A malformation of the tricuspid valve, usually associated with an atrial septal defect.

EC50
Concentration in which a given effect (e.g., death, incoordination) is observed in 50 percent of exposed organisms. The effective concentration for 50 percent of exposed organisms is usually reported along with the duration of exposure (e.g., 96 hours EC50).

eccentric action
A dynamic muscle action which involves muscle lengthening with an increase in muscle tension. Also referred to as eccentric contraction and eccentric muscle contraction.

eccentric contraction
See eccentric action.

eccentric muscle contraction
See eccentric action.

eccentricity
Personal or individual peculiarities of mind and disposition which markedly distinguish the subject from the ordinary, normal, or average types of men/women, but do not amount to mental unsoundness or insanity.

echymosis
A small hemorrhagic spot in the skin or mucous membrane forming a non-elevated blue or purplish spot.

eccrine gland
A sweat gland whose ducts terminate on the free skin surface. See also apocrine gland.

ECD
Electron capture detector. Used in gas chromatography primarily to analyze halogenated organics.

ECG
See electrocardiogram.

echo
(1) To display on a computer screen the character or other symbol typed on a keyboard. (2) An acoustic or electromagnetic reflected energy signal which has sufficient magnitude and delay to be distinguishable from the original emitted signal.

echoacousia
The subjective hearing of repetition of sound after the stimuli producing it have ceased.

echocardiogram
The record produced by echocardiography.

echocardiography
The recording of the position and motion of the heart borders and valves by reflected echoes of ultrasonic waves transmitted through the chest wall.
echoencephalogram
The record produced by echoencephalography.

echoencephalography
The mapping of intracranial structures by means of reflected echoes of ultrasound transmitted through the skull.

echography
See sonography.

echoic memory
A sensory memory associated with the auditory system.

echovirus
A group of viruses, the name of which was derived from the first letters of the description "enteric cytopathogenic human orphan." At the time of the isolation of the viruses, the diseases they caused were not known, hence the term "orphan." But it is now known that these viruses produce many different types of diseases, including forms of meningitis, diarrhea, and various respiratory diseases.

ecological impact
The effect that a manmade or natural activity has on living organisms and their non-living (abiotic) environment.

ecological stress vector
See environmental stressor.

ecology
The relationship of living things to one another and their environment, or the study of such relationships.

economic discrimination
Any form of discrimination within the field of commerce such as a boycott of a particular product or price fixing.

economic duress
A legal defense of "economic duress," or business compulsion, arises where one individual, acting upon another's fear of impending financial injury, unlawfully coerces the latter to perform an act in circumstances which prevent his/her exercise of free will.

economic impact analysis
A corporate analysis which assesses direct and indirect costs of a rule or policy and examines how it will affect the local, regional, and national economies and what economic sectors will bear the burden of costs. It estimates the magnitude and distribution of the financial burden but does not assess whether or not the rule or policy is nonetheless worthwhile.

economic life
That period of time which either minimizes an asset's total equivalent annual cost or maximizes an asset's equivalent annual net income. Also referred to as minimum cost life and optimum replacement interval.

economic loss
In a products' liability action, recovery of damages for "economic loss" includes recovery for costs of repair and replacement of defective property which is the subject of the transaction, as well as commercial loss for inadequate value and consequent loss of profits or use.

economic obsolescence
Loss of desirability and useful life of property due to economic developments (e.g., deterioration of neighborhood or zoning change) rather than deterioration (functional obsolescence).

economic poisons
Chemicals used to control pests and to defoliate cash crops such as cotton.

economic strike
Refusal to work because of a dispute over wages, hours or working conditions, or other conditions of employment. An economic strike is one neither prohibited by law nor by collective bargaining agreement nor caused by employer unfair labor practices, but is typically for the purpose of enforcing employer compliance with union collective bargaining demands, and economic strikers possess more limited reinstatement rights than unfair labor practice strikers.

economic waste
An overproduction or excessive drilling of oil or gas.

economies of scale
Cost reductions or productivity efficiencies achieved through size-optimization in relation to operational circumstances. For example, commodity freight rates usually decline as the volume of cargo tonnage shipped increases.

economy
(1): General. Frugal management of money, materials, resources, and the like. Also, the
practical administration of the material resources of a country, community, or establishment. (2) Transportation. Transport service established for the carriage of passengers at fares and quality of service below that of coach service.

economy of scale factor
The ratio of the change in investment cost to the change in capacity.

ecosphere
The "bio-bubble" that contains life on earth, in surface waters, and in the air.

ecosystem
The interacting system of a biological community and its non-living environmental surroundings.

ECSZ
See Eastern California Shear Zone.

ectocanthic breadth
The horizontal linear distance from the ectocanthus of the right eye to the ectocanthus of the left eye. Measured with the individual sitting or standing erect, and the facial musculature relaxed. May also be referred to as biocular breadth or bicantic diameter.

ectocanthus
The junction of the most lateral parts of the upper and lower eyelids, with the eyelids open normally. May also be referred to as external canthus or lateral canthus.

ectocanthus to back of head
The horizontal linear distance from ectocanthus to the back of the head. Measured with the individual standing or sitting erect and looking straight ahead, and the facial musculature relaxed. Equivalent to ectocanthus to wall.

ectocanthus to otobasion
The horizontal linear distance from ectocanthus to otobasion superior. Measured with the individual sitting or standing erect, with the facial musculature relaxed.

ectocanthus to top of head
The vertical linear distance from ectocanthus to the vertex level of the head. Measured with the individual standing or sitting erect, with the facial musculature relaxed.

ectocanthus to wall
The horizontal distance from ectocanthus to a reference wall. Measured with the individual standing erect with his/her back and head against the wall, looking straight ahead, and the facial musculature relaxed. Equivalent to ectocanthus to back of head.

ectoderm
The outermost of the three primitive germ layers of the embryo; from it are derived the epidermis and epidermic tissues, such as the nails, hair, and glands of the skin, the nervous system, external sense organs (eye, ear, etc.), and mucous membrane of the mouth and anus.

ectomorph
A Sheldon somatotype having characteristics of a thin, frail-appearing body build with little fat or muscle, small bones, and thin chest.

ecuresis
Production of absolute dehydration of the body by excessive urinary excretion in relation to the intake of water.

ECW
See extracellular water.

eczema
Generalized term for an inflammatory process involving the epidermis and marked by itching, weeping, and crusting.

ED
See effective dose.

ED_{10}
Ten percent effective dose. Estimated dose associated with a 10% increase in response over control groups. For Hazard Ranking System purposes, the response considered is cancer. It is measured as milligrams of toxicant per kilogram body weight per day (mg/kg-day).

ED_{50}
Dose in which a given effect (e.g., death, incoordination) is observed in 50 percent of exposed organisms. The effective dose for 50 percent of the exposed organisms is usually reported along with the duration of exposure (e.g., 80 hours ED_{50}).

EDB
See ethylene dibromide.
EDCT
See expected departure clearance time.

EDD
See enforcement decision document.

eddy
(1) A small volume of air (or any fluid) that behaves differently from the larger flow in which it exists. (2) A current running contrary to the main current, causing water turbulence, e.g., below the bridge pier where a swift current is passing through, or below a bar or point.

eddy above and below
Maritime. Channel report term meaning that eddies should be expected both above and below the object mentioned in the marks, such as dikes, top and bottom of crossings, sunken obstructions, etc.; tricky water.

eddy extends way out
Maritime. Term meaning that an eddy extends from the shore or the dike into or across the range formed by this set of marks, or extends one-third or more across the river.

eddy makes out from right (left) shore
Maritime. Term indicating that one should watch for eddy along the shore designated in this set of marks.

eddy viscosity
The internal friction produced by turbulent flow. See also molecular viscosity.

edema
A condition in which body tissues contain an excessive amount of fluid. Edema can be caused by a variety of factors, including hypoproteinemia in which a lowered concentration of plasma proteins decreases the osmotic pressure, thereby permitting passage of abnormal amounts of fluid out of the blood vessels and into the tissue spaces. Some other causes are poor lymphatic drainage, increased capillary permeability (as in inflammation), and congestive heart failure. Local edema due to inflammation or poor drainage through the lymph vessels may be relieved by elevation of the part and application of cold to the area. Generalized edema is treated by the administration of diuretics, which increase the loss of certain salts and thereby increase removal of tissue fluids, which are eliminated as urine.

EDC
Environmental Defense Fund.

edge lease
One located on the edge of an oil-bearing structure.

edit
To manually change the data or information in a file, document, or other form of textual or graphic material.

eductor
See ejector.

EEC
European Economic Community.

EEG
See electroencephalograph and electroencephalogram.

EEL
See emergency exposure limit.

EEO

effect
That which is produced by an agent or cause; result; outcome; consequence.

effective assistance of counsel
The conscientious, meaningful representation wherein the accused is advised of his/her rights and honest, learned, and able counsel is given a reasonable opportunity to perform the task assigned to him/her.

effective compliance program
Under the Federal Sentencing Guidelines (FSGs), an organization may take advantage of mitigating factors if it has an effective program to prevent and detect violations of law. An effective program includes a minimum of seven due diligence steps which the organization must have in place to receive reduced fines at the time of an offense. The organization must generally:

1. have established compliance standards and procedures,
2. have a specific individual within high level personnel of the organization to oversee compliance with such standards and procedures,
3. use due care not to delegate substantial discretionary authority to individuals who had a propensity to engage in illegal activities,
4. take steps to communicate the above to all employees and agents,
5. take reasonable steps to achieve compliance with its standards,
6. consistently enforce standards through disciplinary mechanisms, and
7. respond appropriately to the offense and prevent further similar offenses.

The size of the organization, the likelihood that certain offenses may occur because of the nature of its business, and the prior history of the organization are relevant factors to be considered. See also Federal Sentencing Guidelines.

effective dose (ED)
The amount of a toxicant (or drug) required to bring about a given functional change in an intact organism, at a biochemical site, or in an isolated tissue. Expressed in a proportion to the population affected (ED$_{50}$, for example).

effective intensity

effective locking device
Railroad. A manually operated switch or derail which is a) vandal resistant; b) tamper resistant; and c) capable of being locked and unlocked only by the class, craft, or group of employees for whom the protection is being provided.

effective stack height
The sum of the actual stack height and the rise of the plume after emission from the stack.

effective sound pressure
The root mean square value of the pressure exerted at a given location by an acoustical waveform over a complete cycle. Also referred to as root mean square sound pressure, or, simply, sound pressure.

effective temperature
The combination of the dry-bulb and wet-bulb temperature of slowly moving air which produces immediate sensations of warmth and coolness. The combinations of dry-bulb and wet-bulb temperature and air movement are located on an effective temperature chart from which the effective temperature can be read.

effective temperature index
An arbitrary index which combines into a single value the effect of temperature, humidity, and air movement on the sensation of warmth or cold felt by the human body. A sensory index, developed by ASHRAE, of the degree of warmth that a person, stripped to the waist and engaged in light activity, would experience upon exposure to different combinations of air temperature, humidity, and air movement. This index is applicable to work situations where light activity is performed over a several-hour period. A revised effective temperature chart has been developed for sedentary type work situations, as well as one where radiant heat is a concern.

effective thermal insulation value of clothing
See total thermal insulation value of clothing.

effectively grounded
As pertains to systems over 600 volts (nominal), permanently connected to earth through a ground connection of sufficiently low impedance and having sufficient ampacity that ground fault current which may occur cannot build up to voltages dangerous to personnel.

effectiveness
The ability to produce a specific result or to exert a specific measurable influence.

effectus sequitur causam
Law (Latin). The effect follows the cause.

efferent
Conveying information away from a central point, pertaining especially to neural signals.

efferent nerve
A collection of one or more axons which conducts signals primarily from the central nervous system to the periphery.

efficacy
The capacity or ability to produce the desired effect.

efficiency
The effectiveness of some process, usually measured with respect to the amount of output compared to energy, cost, or other measure input.

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cause, which produces results which would not have come to pass except for its interposition, and for which, therefore, the person who set in motion the original chain of causes is not responsible. That cause of an injury to which legal liability is attached.

efficient intervening cause
An intervening efficient cause is a new and independent force, which breaks the causal connection between the original wrong and the injury, and is the proximate and immediate cause of the injury. This means that the original negligent actor is not liable for an injury that could not have been foreseen or reasonably anticipated as the probable consequence of his/her negligent act, and would not have resulted from it had not the intervening efficient cause interrupted the natural sequence of events, turned aside their own course, and produced the injury.

efflorescence
A rash or eruption. Any skin lesion.

effluent
Wastewater, treated or untreated, that flows out of a treatment plant, sewer, or industrial outfall. Generally refers to wastes discharged into surface waters.

effluent limitation
Restrictions established by a state or the EPA on quantities, rates, and concentrations in wastewater discharges.

effort
(1) That point of force application on a lever.
(2) The expenditure of physical and/or mental energy in the performance of some task.

effort arm
That portion of a lever arm from the fulcrum to the point at which an effort is applied. Also referred to as force arm.

effort-controlled cycle
See self-paced work.

effort rating
See performance rating.

effort time
That part of the cycle time during which an employee is required to use his/her skill and effort.

egestion
The elimination from the body of waste products and residue of ingested nutrients.

EGG
See electrogoniogram and electrogoniography.

ego
In psychoanalytic theory, one of the three major parts of the personality, the others being the id and the superego.

egregious policy
OSHA’s fining strategy implemented in 1990 which allowed the agency to fine employers for multiple violations of the same standard as if each were a separate and distinct violation. This allowed the assessment of huge fines against employers found to be in violation of the same requirement in several different instances (or at several different company locations) during an OSHA inspection.

egress
To exit from a region or space. The path or opening by which a person goes out; exit. The means or act of going out.

EHF
See extremely high frequency.

EH&S
Environmental Health and Safety.

EHS
Extremely hazardous substance.

EIA
See environmental impact assessment. See also Energy Information Administration.

Eiband tolerance curve
A graph developed from both human and animal data illustrating the likelihood and severity of injuries based on uniform acceleration of short duration (an older concept).

eidoptometry
A measurement of the acuteness of visual perception.

eight hour laws
Statutes which establish eight hours as the length of a day’s work, prohibited work beyond this period, and required payment of overtime for work in excess of this period.
Eighteenth Amendment
The amendment to the U.S. Constitution added in 1919 which prohibited the manufacture, sale, transportation, and exportation of intoxicating liquors in all the States and Territories of the United States and which was repealed in 1933 by the Twenty-first Amendment.

Eighth Amendment
The amendment to the U.S. Constitution added in 1791 which prohibits excessive bail, excessive fines, and cruel and unusual punishment.

einsteinium
A chemical element, atomic number 99, atomic weight 254, symbol Es.

EIS
See environmental impact statement.

ejection
Refers to occupants being totally or partially thrown from a vehicle as a result of an impact or rollover.

ejection seat
A seat structure which uses rockets or explosive devices to propel a crew member from a high performance aircraft in a life-threatening, emergency situation.

ejector
An air-moving device employing compressed air to create a vacuum as it is passed through a venturi or straight pipe, which then induces air to flow. Often used when contaminant air could corrode a fan if it were passed through it. Ejectors are not very efficient air-moving devices but do have application in special situations. Sometimes referred to as eductors.

Ekman spiral
An idealized description of the way the wind-driven ocean currents vary with depth. In the atmosphere, it represents the way the winds vary from the surface up through the friction layer.

El Niño
A condition that generally develops about every eight years or so just before Christmas off the coast of Peru when the ocean water turns warm as upwelling diminishes. El Niño means "little boy" in Spanish; when capitalized, it refers to the Christ child. This innocent-sounding name originated in the 19th century when Peruvian sailors noticed that every few years around Christmas, coastal waters warmed up and the current shifted southward. El Niño occurs when weather patterns in the tropical Pacific shift violently. Normally, strong, westward-blowing trade winds of South America push surface water toward Asia. These trade winds almost literally "pile" warm water against the coastlines of Australia, Indonesia, and the Philippines. Above the warm water, moist air rises, lowering atmospheric pressure and triggering the tropical downpours that nourish the rain forests of Asia. Meanwhile, high-altitude winds travel back toward South America. There, the now cooled air sinks, raising atmospheric pressure and suppressing rain along most of the Pacific coast, making it one of the driest regions in the world. When El Niño strikes, this pattern reverses. Atmospheric pressure in the western Pacific rises, setting the stage for drought from Australia to India. The trade winds decrease, or in extreme years, reverse to blow eastward. With no wind to push it toward Asia, some of the huge mass of warm water flows back toward South America, spawning storms from Chile to California. Meanwhile over the Pacific, towering ten-mile high thunderheads further heat the atmosphere, fueling a stronger-than-normal jet stream, which often splits into two. One branch veers north, warming the Pacific Northwest, central Canada, and Alaska. Another branch surges south, producing heavy rains in the U.S. gulf states and southwest.

elapsed time
The temporal interval from the beginning point of some activity to a specified or current point of that activity.

elastic
Susceptible of being stretched, compressed, or distorted, and then tending to assume its original shape.

elastic limit
The level of physical deformation beyond which damage to a structure occurs and/or the structure will not return to its original condition.

elasticity
The property of a material to return to its original shape after being distorted by the application of an external force.
elastomer
A rubber or rubber-like materials, for example, a synthetic polymer with rubber-like characteristics.

elation
Emotional excitement marked by the acceleration of mental and bodily activity.

elbow
(1) The joint between the upper arm and the forearm. It joins the large bone of the upper arm, or humerus, with the two smaller bones of the lower arm, the radius and ulna. The elbow is one of the body's most versatile joints, with a combined hinge and rotating action allowing the arm to bend and the hand to make a half turn. The flexibility of the elbow and shoulder joints together permits a nearly infinite variety of hand movements. The action of the elbow is controlled primarily by the biceps and the triceps muscles. When the biceps contracts, the arm bends at the elbow. When the triceps contracts, the arm straightens. In each action, the opposite muscle exerts a degree of opposing tension, moderating the movement so that it is smooth and even instead of sudden and jerky. The funny bone is not a bone but the ulnar nerve, a vulnerable and sensitive nerve that lies close to the surface near the point of the elbow. Hitting causes a tingling pain or sensation that may be felt all the way to the fingers. (2) That joint in a robotic arm capable of planar motion and corresponding by analogy to the human elbow in function.

elbow breadth
The horizontal linear distance between the medial and lateral epicondyles of the humerus. Also referred to as humeral breadth. Measured with the flesh compressed, the individual standing erect, and the arms hanging naturally at the sides in the anatomical position.

elbow circumference, flexed
The surface distance around the flexed elbow over the olecranon prominence and through the elbow crease. Measured with the elbow flexed 90°, the shoulder flexed 90° laterally such that the upper arm is horizontal, and the hand clenched into a fist.

elbow circumference, fully bent
The surface distance around the olecranon prominence and the crease of the elbow. Measured with the elbow maximally flexed and the fingers extended touching the shoulder.

elbow - elbow breadth
The horizontal distance across the body from the lateral surface of the left elbow to the lateral surface of the right elbow. Also called elbow-to-elbow breadth. Measured with the individual sitting erect, the elbows flexed 90°, and resting lightly against the body.

elbow - fingertip breadth
See forearm - hand length.

elbow - grip length
The horizontal distance from the posterior tip of the elbow to the center of the clenched fist. Measured with the elbow flexed 90°.

elbow height
The vertical distance from the floor or other reference surface to the height of radiale. Also called radiale height. Measured with the individual sitting erect and the arms hanging naturally at the sides.

elbow rest height, sitting
The vertical distance from the sitting surface to the bottom tip of the elbow. Also called elbow rest height. Measured with the individual sitting erect, the upper arm resting vertically at his/her side, and the elbow flexed 90°.

elbow - wrist length
The horizontal linear distance from the posterior tip of the elbow flexed 90° to the tip of
the styloid process of the radius. Measured with the individual sitting or standing erect, the upper arm vertical, and the palm facing medially.

electoral college
The college or body of electors of a State chosen to elect the president and vice-president; also, the whole body of such electors, composed of the electoral colleges of the several states.

electric arc
The visible effect of an undesired electrical discharge between two electrical connections; produces burned spots or fused metal.

electric discharge lamp
A source of radiant electromagnetic energy within or near the visible spectrum resulting from the passage of electrical current through one or more materials in the gaseous state.

electric lock
Rail Operations. A device to prevent or restrict the movement of a lever, a switch or a movable bridge, unless the locking member is withdrawn by an electrical device such as an electromagnet, solenoid, or motor.

electric locking
Rail Operations. The combination of one or more electric locks and controlling circuits by means of which levers of an interlocking machine, or switches or other units operated in connection with signaling and interlocking, are secured against operation under certain conditions.

electric shock
Effect caused by electric current passing through the body. The longer the contact with electricity, the smaller the chance of survival. The victim's breathing may stop, and his/her body may appear stiff.

electric sign
A fixed, stationary, or portable self-contained, electrically illuminated utilization equipment with words or symbols designed to convey information or attract attention.

electric system
Physically connected generation, transmission, and distribution facilities operated as an integrated unit under one central management or operating supervision.

electric utility steam generating unit
Under the Clean Air Act: (1) Any fossil fuel-fired combustion unit of more than 25 megawatts that serves a generator that produces electricity for sale. (2) A unit that cogenerates steam and electricity and supplies more than one-third of its potential electric output capacity and more than 25 megawatts electrical output to any utility power distribution system for sale shall be considered an electric utility steam-generating unit.

electrical component
A component such as a switch, fuse, resistor, wire, capacitor, or diode in an electrical system.

electrical current
In all Systems of Units, the basic unit of electrical current is the ampere, which has been defined to be that constant flow of electricity which, if maintained in two straight parallel conductors of infinite length, each having negligible circular cross-section, and placed 1.0 meter apart in a vacuum, would produce between these conductors and normal to the direction in which these conductors are positioned, a repulsive force equal to 2 x 10^-7 newtons per meter of conductor length.

electrical ground
An electrical reference point or return path for current flow. Also referred to simply as ground.

electrical hygrometer
See hygrometer.

electrical impedance (Z)
The total opposition to an alternating current in an electrical circuit. Also called impedance.

electrical muscle stimulation (EMS)
The stimulation of muscles or muscle tissue with electrical current/voltage.

electrical resistance (R)
A measure of the opposition to electric current flow. Also called resistance. See also electrical impedance.

electrical resistance thermometer
Thermometer that uses electrical conducting wires (or thermistors) whose electrical resistance changes with the temperature. It is used in radiosondes.
**electrical shock**
The passage of electrical current/voltage through the body, resulting in the abnormal stimulation of muscles and nerves.

**electrical skin resistance (ESR)**
See skin resistance response.

**electrical stimulation**
Any form of artificial activation of nerves, muscles, or other materials by the application of electrical current/voltage.

**electricity**
A form of energy generated by friction, induction, or chemical change that is caused by the presence and motion of elementary charged particles of which matter consists. See also gigawatt, kilowatt, and megawatt.

**electro-pneumatic switch**
A switch operated by an electro-pneumatic switch-and-lock movement.

**electro-pneumatic valve**
A valve electrically operated which, when operated, will permit or prevent passage of air.

**electro-silence**
The absence of measurable electrical potentials in biological tissues.

**electroaffinity**
The tenacity with which the ions of an element hold their charges.

**electroanalysis**
Chemical analysis by means of electric current.

**electrobiology**
The science of the relationship between electricity and living organisms.

**electrocardiogram (ECG)**
A graphical record or other visual display of the electrical activity of the heart as recorded from various points on the body surface, usually consisting of a P wave, a QRS wave complex, and a T wave, depending on the recording locations. Often referred to as EKG.

**electrocardiograph**
The instrumentation used to obtain a graphical recording of heart electrical activity.

**electrocardiography**
The study, measurement, recording, analysis, and/or interpretation of the electrical activity of the heart.

**electrochemical detector**
A detector that operates on the principle of electrochemical oxidation or reduction of a specific chemical in an electrolyte or galvanic cell. The electrons produced in the chemical reaction are proportional to the contaminant concentration.

**electrochemistry**
The science that deals with the use of electrical energy to bring about a chemical reaction or with the generation of electrical energy by means of chemical action.

**electrode**
Any electrically conductive device used for sensing or applying electrical current/voltage.

**electrodialysis**
A process that uses electrical current applied to permeable membranes to remove minerals from water. Often used to desalinize salty or brackish water.

**electroencephalogram (EEG)**
A graphical recording or other visual display of the electrical potentials generated by the brain and measured by electrodes attached to the scalp or implanted within the brain itself.
electroencephalograph (EEG)
The instrumentation used to obtain a graphical recording or the graphical recording itself of brain electrical activity.

electroencephalography
The study, measurement, recording, analysis, and/or interpretation of electrical activity from the brain.

electrogoniogram (EGG)
The electronic display or hardcopy record of changes in a joint angle using a potentiometer-equipped or other type of electrical goniometer.

electrogoniography (EGG)
The measurement, study, or analysis of changes in joint angles using potentiometer-equipped or other type of electrical goniometers.

electrogoniometer
An electromechanical goniometer, normally using changes in electrical resistance across a potentiometer to indicate the joint angle.

electroluminescence
The emission of light due to the application of an electromagnetic field to certain materials, and which is not due to heating effects alone.

electrolyte
A chemical substance that breaks down into electrically charged particles (ions) when dissolved or melted.

electromagnetic field (EMF)
Any combination of an electric field and a magnetic field which occur as a result of natural or artificially generated electromagnetic radiation.

electromagnetic interference (EMI)
A disturbance of some system due to the presence of electromagnetic fields.

electromagnetic radiation
A traveling wave motion resulting from changing electric or magnetic fields. The length of these waves can be relatively short (x-rays and gamma rays) or relatively long (ultra-violet, visible, and infrared through to radar and radiowaves). All electromagnetic radiation travels with the speed of light in a vacuum. Generally speaking, the shorter the wavelength, the more penetrating the radiation.

electromagnetic spectrum
The range of frequencies and wavelengths emitted by atomic systems. The spectrum includes radiowaves as well as the short cosmic rays.

electromagnetic susceptibility
Degraded performance of an instrument caused by an electromagnetic field.

electromagnetic waves
See radiant energy.

electromyogram (EMG)
A graphical recording or other visual display of the electrical potentials generated by a muscle, muscle group, or a large segment of muscle tissue and measured by electrodes placed in or over the tissues involved.

electromyographic kinesiology
The use of electromyography in the analysis of human motion. Also referred to as correlative kinesiology.

electromyography (EMG)
The study, measurement, recording, analysis, and/or interpretation of the electrical activity of muscles. Also referred to as myography.

electron
A negatively charged particle that is a fundamental constituent of all atoms. A unit of negatively charged electricity found in orbit around the nucleus of the atom. It has a negative electric charge of 1.60210 E-19 coulombs, and can exist as a constituent of an atom or in the free state (e.g., a beta particle).

electron capture
As pertains to ionizing radiation, a mode of radioactive decay in which an orbital electron merges with a proton in the nucleus. The process is followed by emission of an electron or photon.

electron capture detector
A type of detector employed in gas chromatography.

electron microscopy
An analytical method which utilizes a beam of electrons for the analysis of materials. This methodology is used for the identification of asbestos and other materials.

electron volt
A unit of energy equivalent to that gained by an electron in passing through a potential dif-
ference of 1 volt. Often expressed in large units such as keV (thousand electron volts), MeV (million electron volts), BeV (billion electron volts).

**electronystagmogram (ENG)**
A graphical recording or other visual display of the electrooculogram during nystagmus. See also electroculogram.

**electrooculogram (EOG)**
A graphical display or recording of eye movements as detected by surface electrodes positioned on the skin around the eye socket, which is due to the relative orientations between the eyeball (corneo-retinal potential) and the electrodes.

**electrooculography**
The study, measurement, recording, analysis, and/or interpretation of the electrical activity associated with eye movements.

**electrophoresis**
The movement of charged particles suspended in a liquid on various media (e.g., paper, starch, agar), under the influence of an applied electric field. The method is used to analyze the plasma protein content in order to diagnose certain diseases.

**electrophysiological kinesiology**
The use of electrophysiological techniques in biomechanical and kinesiological research and training.

**electrophysiology**
The study of any form of electrical activity of the body, either associated with natural processes or due to external stimulation.

**electroretinography (ERG)**
The study, measurement, recording, analysis, and/or interpretation of the electrical potentials from the retina.

**electrostatic discharge**
A spontaneous or enticed release of static electricity.

**electrostatic precipitator (ESP)**
An air pollution control device that removes particles from a gas stream (smoke) after combustion occurs. The ESP imparts an electrical charge to the particles causing them to adhere to metal plates inside the precipitator. Rapping on the plates causes these particles to fall into a hopper for disposal.

**electrotherapy**
The use of various aspects of non-ionizing electromagnetic radiation or conduction in an attempt to heal, reduce pain, or create other beneficial effects.

**element**
(1) A pure substance that cannot be broken down into a simpler substance by chemical change but whose atoms will disintegrate in simpler particles through physical decomposition when exposed to drastic bombardment with high-energy particles. (2) A basic division of work, whether for man or machine, consisting of one or more basic, describable, and quantifiable motions or processes.

**element breakdown**
A descriptive listing of work elements, with or without certain parameters for each.

**element time**
That period of time required or allowed to perform a specified work element or other portion of a process or task.

**elemental motion**
See therblig.

**elements**
The forces of nature. Violent or severe weather. The ultimate undecomposable parts which unite to form anything. Popularly: fire, air, earth, and water.

**elements of crime**
Those constituent parts of a crime which must be proved by the prosecution to sustain a conviction.

**elephantiasis**
Massive subcutaneous edema, with accompanying thickening of the skin, the result of lymphatic obstruction. The disease derives its name from the symptoms, particularly swelling of the legs which makes them look like those of an elephant. The condition is usually caused by a slender, threadlike parasite, the filarial worm which enters the lymphatic system, causing an obstruction to drainage. The disease is transmitted by mosquitoes or flies which carry blood infected with filaria larva. The first visible signs are inflammation of the lymph nodes, with temporary swelling in the affected area, red streaks along the leg or arm, pain, and tenderness.
elevated on fill
*Rail Operations.* Rail transit way above the surface level fill. Transition segments above surface level on fill are included.

**elevated on structure**
*Rail Operations.* Rail transit way above surface level on structure. Transition segments above surface level on structures are included.

elevated rail subway
Includes elevated and subway trains in a city.

**elevated temperature material**
*Transit.* A material which, when offered for transportation or transported in a bulk packaging is a) in a liquid phase and at a temperature at or above 100°C (212°F); b) in a liquid phase with a flash point at or above 37.8°C (100°F) that is intentionally heated and offered for transportation or transported at or above its flash point; or c) in a solid phase and at a temperature at or above 240°C (464°F).

eleven contiguous western states

Eleventh Amendment
The Amendment to the U.S. Constitution, added in 1798, which provides that the judicial power of the U.S. shall not extend to any suit in law or equity, commenced or prosecuted against one of the United States by citizens of another State, or by citizens of any foreign state.

ELF
Extremely low frequency range of rf radiation (3 to 3,000 Hz). *See extremely low frequency.*

**ELF EM field**
Extremely low frequency electromagnetic field.

eligible costs
The construction costs for wastewater treatment works upon which EPA grants are based.

**elimination**
(1) The removal of a chemical substance from the body by metabolism or excretion. Also, the removal of health or physical hazard risk through control, substitution, or some other means. (2) Defecation or urination. (3) The reduction in the use or importance of an impaired process as proficiency in an alternate process is developed.

Elkins Act
Federal Act (1903) which strengthened the Interstate Commerce Act by prohibiting rebates and other forms of preferential treatment to large shippers.

**ELP**
*See Environmental Leadership Program.*

elutriation
Purification of a substance by dissolving it in a solvent and pouring off the solution, thus separating it from the undissolved foreign material.

elutriator
An air-sampling device that uses gravitational force to remove non-respirable dust from the air sample. It separates particles according to mass and aerodynamic size by maintaining laminar flow through it, thereby permitting particles of greater mass to settle out rapidly with the smaller particles depositing at greater distances from the entry point of the elutriator.

eluviation
The movement of soil caused by excessive water in the soil.

**ELT**
*See emergency locator transmitter.*

emaciation
A wasted, lean appearance due to extreme weight loss.

embankment
A raised structure of earth, ground, etc.

**embedded measure**
A hidden process, operation, or test which an individual completes as a subset of a regular job or task, and which is intended to provide another individual or group with information about that person's performance.

embezzlement
(1) The fraudulent appropriation of property by one lawfully entrusted with its possession.
(2) To "embezzle" means willfully to take, or convert to one's own use, another's money or property, of which the wrongdoer acquired possession lawfully, by reason of some office or employment or position or trust.

**embolism**
A blockage of a blood vessel by some substance.

**embolus**
A mass of undissolved material, usually part or all of a thrombus, carried in the blood stream and frequently causing obstruction of a vessel (i.e., an embolism).

**embracery**
The crime of attempting to influence a jury corruptly to one side or the other, by promises, persuasions, entreaties, entertainment, and the like. The person guilty of this offense if called an "embraceor." This is both a state and federal crime, and is commonly included under the offense of "obstructing justice."

**embryo**
(1) *Anatomy.* An organism in an early stage of development. (2) *Meteorology.* In cloud physics, a tiny ice crystal that grows in size and becomes an ice nucleus.

**embryotoxicity**
The toxic effect of a substance on the embryo.

**embryotoxin**
A material that is harmful to the developing embryo. Substances that act during pregnancy to cause adverse effects on the fetus.

**emergency**
(1) *General.* A deviation from normal operation, a structural failure, or severe environmental conditions that probably would cause harm to people or property. (2) *Department of Transportation.* Any hurricane, tornado, storm (e.g., thunderstorm, snowstorm, ice storm, blizzard, sandstorm, etc.), high water, wind-driven water, tidal wave, tsunami, earthquake, volcanic eruption, mud slide, drought, forest fire, explosion, blackout or other occurrence, natural or manmade which interrupts the delivery of essential services (such as, electricity, medical care, sewer, water, telecommunications, and telecommunication transmissions) or essential supplies (such as, food and fuel) or otherwise immediately threatens human life or public welfare, provided such hurricane, tornado, or other event results in: a) a declaration of an emergency by the President of the United States, the Governor of a State, or their authorized representatives having authority to declare emergencies; by the Regional Director of Motor Carriers for the region in which the occurrence happens; or by other Federal, State or local government officials having authority to declare emergencies, or b) a request by a police officer for tow trucks to move wrecked or disabled vehicles. (3) *Chemical.* A situation created by an accidental release or spill of hazardous chemicals which poses a threat to the safety of workers, residents, the environment, or property. (4) *Confined Spaces.* Any occurrence (including any failure of hazard control or monitoring equipment) or event internal or external to the permit space that could endanger entrants. (5) *Law.* A sudden unexpected happening; an unforeseen occurrence or condition; perplexing contingency or complication of circumstances; a sudden unexpected occasion for action; exigency; pressing necessity.

**emergency action plan**
A plan for a workplace, or parts thereof, describing what procedures the employer and employees must take to ensure employee safety from fire or other emergencies.

**emergency brake**
A mechanism designed to stop a motor vehicle after a failure of the service brake system.

**emergency brake system**
A mechanism designed to stop a vehicle after a single failure occurs in the service brake system of a part designed to contain compressed air or brake fluid or vacuum (except failure of a common valve, manifold brake fluid housing, or brake chamber housing).

**emergency button**
A type of emergency stop consisting of a pushbutton installed on or near a piece of equipment which is capable of quickly shutting off electricity to that equipment.

**emergency contingency vehicles**
Revenue vehicles placed in an inactive contingency fleet for energy or other local emergencies after the revenue vehicles have reached the end of their normal minimum useful life. The vehicles must be properly stored and maintained, and the Emergency Conti-
Emergency Plan must be approved by FTA. Substantial changes to the plan (10% change in fleet) require re-approval by FTA.

Emergency Court of Appeals
Court created during World War II to review orders of the Price Control Administrator. It was abolished in 1953 but reestablished in 1970 under Section 211 of the Economic Stabilization Act to handle primarily wage and price control matters.

Emergency doctrine
Under the doctrine variously referred to as the "emergency," "imminent peril," or "sudden peril" doctrine, when one is confronted with a sudden peril requiring instinctive action, he/she is not, in determining a course of action, held to the exercise of the same degree of care as when he/she had time for reflection, and in the event that a driver of a motor vehicle suddenly meets with an emergency which naturally would overpower the judgement of a reasonably prudent and careful driver, so that momentarily he/she is thereby rendered incapable of deliberate and intelligent action, and as a result injures a third person, he/she is not negligent, provided he/she has used due care to avoid meeting such an emergency and, after it arises, exercises such care as a reasonably prudent and capable driver would use under the unusual circumstances. In an emergency situation when medical service is required for an adult who by virtue of his/her physical condition is incapable of giving consent, or with respect to a child, whose parent or other guardian is absent, and thus incapable of giving consent, the law implies the consent required to administer emergency medical services. This is a good defense to an action of tort for an alleged battery.

Emergency episode
See air pollution episode.

Emergency escape route
The route that employees are directed to follow in the event they are required to evacuate the workplace or seek a designated refuge area.

Emergency exposure limit (EEL)
The concentration of an air contaminant to which, it is believed, an individual can be exposed in an emergency without experiencing permanent adverse health effects but not necessarily without experiencing temporary discomfort or other evidence of irritation or intoxication.

Emergency lighting
A system for providing adequate illumination automatically in the event of interruption of the normal lighting system. The emergency lighting should provide, throughout a means of egress, not less than one foot-candle of illumination for a period of one and one-half hours.

Emergency locator transmitter (ELT)
A radio transmitter attached to the aircraft structure which operates from its own power source on 121.5 mHz and 243.0 mHz. It aids in locating downed aircraft by radiating a downward sweeping audio tone, 2-4 times per second. It is designed to function without human action after an accident.

Emergency mover
A skeletal muscle which may be used to assist a prime mover when a very high force level is required.

Emergency opening window
Rail. That segment of a side-facing glazing location which has been designed to permit rapid and easy removal during a crisis situation.

Emergency procedure
An action plan to be implemented in the event of an emergency. It typically describes, as a minimum, roles and responsibilities, types of emergency situations to be expected, emergency notification and/or communication procedures, public relations procedures during an emergency, and any other contingency plans applicable to the facility and its processes.

Emergency relief
Transit. An operation in which a motor carrier or driver of a commercial motor vehicle is providing direct assistance to supplement state and local efforts and capabilities to save lives or property or to protect public health and safety as a result of an emergency.

Emergency respirator use
The use of a respirator when a hazardous atmosphere develops suddenly and requires its immediate use for escape or for responding to the emergency in locations, areas, or opera-
tions where the hazardous situation may exist or arise.

**Emergency Response Planning Guides (ERPG)**

Concentration ranges, developed by the American Industrial Hygiene Association (AIHA) committee, above which adverse health effects could reasonably be expected to occur if exposures exceed the time limits established for the guides. Different effects are identified for exposure periods of one hour in ERPG-1, ERPG-2, and ERPG-3.

**Emergency Shower (Drench Shower, Hans Corp., Berkeley, CA)**

**emergency shower**

A water shower designed and located for use if an employee or other individual contacts a material that must be removed promptly in order to prevent an adverse health effect. Typically, it is recommended that such showers be capable of providing a continuous flow of deluge water for a period of not less than 15 minutes.

**emergency stop**

(1) A pushbutton, switch, or other control device installed in or on a piece of equipment which is capable of quickly cutting power to that equipment in an emergency. (2) A rapid cessation of the forward motion of a vehicle to avoid undesirable consequences.

**emergency switch**

A type of emergency stop consisting of a switch located in some readily accessible position for quickly shutting down a system in an emergency.

**emergency temporary standard (ETS)**

See Section 6 (c) standard.

**emetic**

An agent that induces or causes vomiting.

**EMF**


**EMG**

See electromyogram and electromyography.

**EMI**

See electromagnetic interference.

**eminent domain**

Government taking or forced acquisition of private land for public use, with compensation paid to the landowner. The power to take private property for public use by the state, municipalities, and private persons or corporations authorized to exercise functions of public character. In the United States, the power of eminent domain is founded in both federal (Fifth Amendment) and state constitutions. The Constitution limits the power to taking for a public purpose and prohibits the exercise of the power of eminent domain without just compensation to the owners of the property which is taken. The process of exercising the power of eminent domain is commonly referred to as "condemnation," or "expropriation."

**emission**

Pollution discharged into the atmosphere from smokestacks, other vents, and surface areas of commercial or industrial facilities; from residential chimneys, and from motor vehicle, locomotive, or aircraft exhausts.

**emission factor**

The relationship between the amount of pollution produced and the amount of raw material processed. For example, an emission
factor for a blast furnace making iron would be the number of pounds of particulates per ton of raw materials.

emission inventory
A listing, by source, of the amount of air pollutants discharged into the atmosphere of a community. It is used to establish emission standards.

emission standard
(1) Standards for the levels of pollutants emitted from automobiles and trucks. Congress established the first standards in the Clean Air Act of 1963. Currently, standards are set for four vehicle classes: automobiles, light trucks, heavy-duty gasoline trucks, and heavy-duty diesel trucks. (2) The maximum amount of air polluting discharge legally allowed from a single source, mobile or stationary.

emissions trading
EPA policy that allows a plant complex with several facilities to decrease pollution from some facilities while increasing it from others, so long as total results are equal to or better than previous limits. Facilities where this is done are treated as if they exist in a bubble in which total emissions are averaged out. Complexes that reduce emissions substantially may "bank" their "credits" or sell them to other industries. Also referred to as bubble policy.

emissivity
The ratio of the radiation intensity from a surface to the radiation intensity of the same wavelength from a black body at the same temperature. The emissivity of a perfect black body is 1.

emmetrope
One who has normal refractive vision.

emmetropia
A condition of normal optical vision in which parallel light rays are brought to an accurate focus on the retina without the need for accommodation.

emotion
A feeling or state of mental excitement that is usually accompanied by physical changes in the body.

emotional insanity
The species of mental aberration produced by a violent excitement of the emotions or passions, though the reasoning faculties may remain unimpaired. A passion, effecting for a space of time, complete derangement of a person's intellect, or an impulse, which his/her mind is not able to resist, to do an act.

empathy
Intellectual understanding of something in another person which is foreign to oneself.

emphasizing facts
A jury instruction is said to emphasize facts which may contain sufficient facts to authorize a verdict, but nevertheless some fact or facts are selected from the evidence and mentioned in such a way as to indicate to the jury that they have especial importance when that is not justified.

emphysema
Overdistention of the alveolar sacs of the lungs. A condition of the lungs in which there is dilatation of the air sacs, resulting in labored breathing and increased susceptibility to infection.

empiric
A practitioner in medicine or surgery, who proceeds on experience only, without science or legal qualification; a quack.

empirical
Derived from practical experience or relying on observations or experimental results as opposed to theory.

empirical distribution
A distribution of sampled events or data.

empirical probability
When many possible outcomes can result, including a desired outcome, the probability of occurrence of such outcomes is referred to as empirical and requires statistical evaluation to determine the likelihood of expected results based upon past performance.

empirical workplace design
The evolutionary design of the working environment based on a combination of human factors engineering and experience.

emplead
To indict; to prefer a charge against; to accuse.
employ
To engage in one's service; to hire; to use as an agent or substitute in transacting business; to commission and entrust with the performance of certain acts or functions or with the management of one's affairs; and, when used with respect to a servant or hired laborer, the term is equivalent to hiring, which implies a request and a contract for compensation.

employed
(1) Performing work under an employer-employee relationship. The term signifies both the act of doing a thing and the being under contract or orders to do it. (2) To give employment to or to have employment.

employee
(1) General. The person taking the direction from the employer. An individual who has an agreement to work for an employer and is compensated by that employer for his/her time and/or effort. (2) Transit. a) A driver of a commercial motor vehicle (including an independent contractor while in the course of operating a commercial motor vehicle); b) a mechanic; c) a freight handler; d) any individual who is employed by an employer and who in the course of his or her employment directly affects commercial motor vehicle safety, but such term does not include an employee of the United States, any State, any political subdivision of a State, or any agency established under a compact between States and approved by the Congress of the United States who is acting within the course of such employment; e) an individual who is compensated by the transit agency and whose expense is reported in object class 501 labor. (3) Law. A person in the service of another under any contract of hire, express or implied, oral or written, where the employer has the power or right to control and direct the employee in the material details of how the work is to be performed.

Employee Aptitude Survey (EAS)
A commonly used test for determining symbolic, verbal, and numeric reasoning abilities, word fluency and comprehension, spatial visualization, visual pursuit, speed and accuracy abilities, and manual speed and accuracy.

employee hours
(1) General. The total number of hours worked by all employees in a facility or company. May also be referred to as exposure hours. (2) Transit. The number of hours worked by all employees of the railroad during the previous calendar year.

employee human factor
Railroad. Includes any of the accident causes signified by the rail equipment accident/incident cause codes listed under "Train Operation-Human Factors" in the current "Federal Railroad Administration (FRA) Guide for Preparing Accident/Incident Reports," except for Cause Code 506. See also human factor.

employee not on duty
Railroad. A railroad employee who is on railroad property for a purpose connected with his or her employment or with other railroad permission, but who is not employed in rail operations for financial or other compensation. Two classifications or categories are used: a) Employee on duty (Class A): Those persons who are employed in the operation of a railroad. Ordinarily the fact that the employee is or is not under pay will determine whether he or she is "on duty." However, employees on railroad property while on rest or meal periods, "training time," or doing work which they are expected to do, but actually perform before pay starts, must be considered as "employees on duty." b) Employee on duty (Class B): Those employees who are on railroad property for purposes connected with their employment or with other railroad permission, but who are not "on-duty" as defined above.

employee participation team
See quality circles.

Employee Retirement Income Security Act (ERISA)
A government regulation with the intent of guaranteeing employees' pensions if they leave a company before retirement age and that sufficient funds will exist to pay pensions when due.

Employee Stock Ownership Plan (ESOP)
A type of qualified profit sharing plan that invests in securities of the employer. Such plans acquire shares of the employer corporation for the benefit of employees, usually through contributions of the employer to the plan. In a contributory ESOP, the employer usually contributes its shares to a trust and re-
receives a deduction for the fair market value of such stock. Generally, the employee recognizes no income until the stock is sold after its distribution to him/her upon retirement or other separation from service. Special tax benefits are provided to companies with such benefits.

**employer**

(1) **General.** The person who has the authority to direct and control the activities of another. Also, the person who supervises the employee on a day to day basis is usually considered the employer. This means that temporary and part-time workers may be considered "employees." (2) **Transit.** Any person engaged in a business affecting interstate commerce who owns or leases a commercial motor vehicle in connection with that business, or assigns employees to operate it, but such terms do not include the United States, any State, any political subdivision of a State, or an agency established under a compact between States approved by the Congress of the United States. (3) **Law.** One who employs the services of others; one for whom employees work and who pays their wages or salaries. The correlative of "employee."

**employers' liability acts**

Statutes, such as the Federal Employer's Liability Act and Workers' Compensation Acts, defining or limiting the occasions and the extent to which public and private employers shall be liable in damages (compensation) for injuries to their employees occurring in the course of their employment, and particularly abolishing the common-law rule that the employer is not liable if the injury is caused by fault or negligence of a fellow servant, and also the defenses of contributory negligence and assumption of risk.

**employers' liability insurance**

In this form of insurance, the risk insured against is the liability of the insured to make compensation of pay damages for an accident, injury, or death occurring to a servant or other employee in the course of his/her employment, either at common law or under statutes imposing such liability on employers. It is coverage which protects the employer as to claims not covered under workers' compensation insurance. See also insurance.

**employment**

The act of employing or the state of being employed. That which engages or occupies; that which consumes time and attention; also an occupation, profession, trade, post, or business.

**employment agency**

A business operated by a person, firm, or corporation engaged in procuring, for a fee, employment for others and employees for employers. The fee may be paid by either the employer or the employee, depending upon the terms of the agreement.

**employment at will**

This doctrine provides that, absent the express agreement to the contrary, either the employer or the employee may terminate their relationship at any time, for any reason. Such employment relationship is one which has no specific duration, and such a relationship may be terminated at will by either the employer or the employee, for or without cause. See also at-will employment.

**employment contract**

An agreement or contract between employer and employee in which the terms and conditions of one's employment are provided.

**empiriatrics**

That branch of medicine particularly concerned with the health problems of travelers about the world.

**empower**

(1) To give an individual the challenge or opportunity to show creativity, demonstrate personal responsibility, and provide quality work. (2) A grant of authority rather than a command of its exercise.

**emptor**

**Law (Latin).** A buyer or purchaser. Used in the maxim "caveat emptor," meaning let the buyer beware (i.e., the buyer of an article must be on guard and take the risks of his/her purchase). See also caveat emptor.

**empty car mile**

**Rail Operations.** A mile run by a freight car without a load. In the case of intermodal movements, the car miles generated will be loaded or empty depending on whether the trailers/containers are moved with or without a waybill, respectively.
empty chair doctrine
Under this doctrine, a trial justice may charge a jury that it may infer from the litigant's unexplained failure to produce an available witness who would be expected to give material testimony in the litigant's behalf that the witness, had he/she occupied the empty chair, would have testified adversely to the litigant.

empty field myopia
The condition of eye accommodation for near, as opposed to far, vision when viewing a homogeneous field.

empyema
The presence of pus in a body cavity, particularly the presence of a purulent exudate within the pleural cavity (pyothorax). It occurs as an occasional complication of pleurisy or some other respiratory disease. Symptoms include dyspnea, coughing, chest pain on one side, malaise, and fever.

EMS
See electrical muscle stimulation.

EMU
See extravehicular mobility unit.

emulsifier
A surface-active agent that promotes the dispersion of one liquid in another, such as small fat globules in water.

en route
Aviation. One of three phases of flight services (terminal, en route, oceanic). En route service is provided outside of terminal airspace and is exclusive of oceanic control.

en route air traffic control service
Air traffic control service provided for aircraft on Instrument Flight Rules (IFR) flight plans, generally by Air Route Traffic Control Center (ARTCC), when these aircraft are operating between departure and destination terminal areas. When equipment capabilities and controller workload permit, certain advisory or assistance services may be provided to Visual Flight Rules (VFR) aircraft.

en route center
An Air Route Traffic Control Center.

en route descent
Descent from the en route cruising altitude which takes place along the route of flight.

en route facility activity
Total Instrument Flight Rules aircraft handled; (2 x departures) + Domestic and Oceanic overflights.

en route high altitude charts
Provide aeronautical information for en route instrument navigation (IFR) in the high altitude stratum. Information includes the portrayal of jet routes, identification and frequencies of radio aids, selected airports, distances, time zones, special uses airspaces, and related information.

en route low altitude charts
Provide aeronautical information for en route instrument navigation (IFR) in the low altitude stratum. Information includes the portrayal of airways, limits of controlled airspace, position identification and frequencies of radio aids, selected airports, minimum en route and minimum obstruction clearance altitudes, airway distances, reporting points, restricted areas, and related data. Area charts, which are a part of this series, furnish terminal data at a larger scale in congested areas.

en route minimum safe altitude warning
A function of the National Airspace System (NAS) Stage A en route computer that aids the controller by alerting him when a tracked aircraft is below or predicted by the computer to go below a predetermined minimum Instrument Flight Rules (IFR) altitude (MIA).

en route spacing program
A program designed to assist the exit sector in achieving the required in trail spacing.

enable
To give power to do something; to make able. In the case of a person under a disability as to dealing with another, "enable" has the primary meaning of removing that disability; not of giving a compulsory power that can be used against another person.

Enabling Act
A term referring to the foundation statute creating an agency and giving it jurisdiction and authority, usually also establishing some standards and procedures for it to follow. See also enabling statute.

enabling clause
That portion of a statute or constitution which gives to governmental offices the power and
authority to put it into effect and to enforce such.

enabling statute
Term applied to any statute enabling persons or corporations, or agencies to do what before they could not. It is applied to statutes which confer new powers. See also Enabling Act and enabling clause.

enact
To establish by law; to perform or effect; to decree. The common introductory formula in making statutory laws is "Be it enacted."

enacting clause
A clause at the beginning of a statute which states the authority by which it is made. That part of a statute which declares its enactment and serves to identify it as an act of legislation proceeding from the proper legislative authority.

enactment
The method or process by which a bill in the legislature becomes a law.

enamel
The calcified tissue of ectodermal origin covering the crown of a tooth.

encapsulant
A material that can be applied to a solid or semisolid material to prevent the release of a component(s), such as fibers from an ACM.

encapsulation
The process of coating an asbestos-containing material, manmade mineral fiber, lead-containing or other material from which release of a contaminant is to be controlled by the encapsulating material. An example is the coating of asbestos-containing material with a bonding or sealing agent to prevent the release of fibers.

encephalopathy
Any degenerative disease of the brain.

enclosed
Surrounded by a case, housing, fence, or walls which will prevent persons from accidentally contacting energized parts.

enclosed structure
A structure with a roof or ceiling and at least two walls which may present fire hazards to employees, such as accumulations of smoke, toxic gases and heat, similar to those found in buildings.

enclosing hood
A hood that encloses the source of contamination.

enclosure
(1) General. The case or housing of an apparatus, or the fence or walls surrounding an installation, to prevent personnel from accidentally contacting energized parts, or to protect the equipment from physical damage. (2) Asbestos. A tight structure around an area of asbestos-containing material to prevent the release of fibers into the surrounding area.

encoder
Any device for coding one or more values for use by another device or computer.

encourage
Law. In criminal law, to instigate; to incite to action; to give courage to; to inspire; to embolden; to raise confidence; to make confident; to help; to forward; to advise.

encroach
To enter by gradual steps or stealth into the possessions or rights of another; to trespass or intrude. To gain or intrude unlawfully upon the lands, property, or authority of another.

encroachment
An illegal intrusion in a highway or navigable river, with or without obstruction. An encroachment upon a street or highway is a fixture, such as a wall or fence, which illegally intrudes into or invades the highway or encloses a portion of it, diminishing its width or area, but without closing it to public travel.

encumbrance
Any right to, or interest in, land which may subsist in another to diminution of its value, but consistent with the passing of the fee by
conveyance. A claim, lien, charge, or liability attached to and binding real property (e.g., a mortgage, judgement lien; mechanics' lien; lease; security interest; easement or right of way; accrued and unpaid taxes). If the liability relates to a particular asset, the asset is encumbered. While encumbrances usually relate to real property, a purchaser of personal property is provided with a warranty of title against unknown encumbrances.

end effector
A remote mechanical latching device for gripping, holding, and/or performing work.

end facing glazing location
Railroads. With regard to safety glazing on rail car windows: Any location where a line perpendicular to the plane of the glazing material makes a horizontal angle of 50 degrees or less with the centerline of the locomotive, caboose, or passenger car. Any location which, due to curvature of the glazing material, can meet the criteria for either a front facing location or a side facing location shall be considered a front facing location.

end item
The final manufactured product, typically built to certain requirements or specifications.

end plate
(1) A specialized region of muscle cell membrane in which an axon terminates with extensive branching. Also referred to as motor end plate. (2) A layer of cartilage at the top and bottom of each intervertebral disk.

end-plate potential (EPP)
A prolonged potential change from the resting potential across the membrane of a muscle cell which may or may not result in a muscle action potential.

end-use energy consumption
DOE. (1) Primary end-use energy consumption is the sum of fossil fuel consumption by the four end-use sectors (residential, commercial, industrial, and transportation) plus electric utility sales to those sectors and generation of hydroelectric power by non-electric utilities. Net end-use energy consumption includes electric utility sales to those sectors but excludes electrical system energy losses. Total end-use energy consumption includes both electric utility sales to the four end-use sectors and electrical system energy losses. (2) The sum of fossil fuel consumption by the four end-use sectors (residential, commercial, industrial, and transportation) plus electric utility sales to those sectors and generation of hydroelectric power by non-electric utilities. Net end-use energy consumption excludes electrical system energy losses. Total end-use energy consumption includes electrical system energy losses.

end-use sectors
The residential, commercial, industrial, and transportation sectors of the economy.

endangered assessment
A study conducted to determine the nature and extent of contamination at a site on the National Priorities List and the risk posed to public health or the environment. EPA or the state conduct the study when a legal action is to be taken to direct potentially responsible parties to clean up a site or pay for the cleanup. An endangered assessment supplements a remedial investigation.

endangered species
Under the Federal Endangered Species Act of 1973: Any species which is in danger of extinction throughout all or a significant portion of its range other than a species of the Class Insecta determined by the Secretary of the Interior or the Secretary of Commerce to constitute a pest whose protection under the provisions of the Federal Endangered Species Act of 1973 would present an overwhelming and overriding risk to man.

endarteritis
Inflammation of the innermost coat of an artery.

endeavor
To exert physical and intellectual strength toward the attainment of an object. A systematic or continuous effort.

endemic
Refers to diseases or infectious agents in the human population within a given geographic area that are constantly present or usually prevalent.

ending milepost
Transit. The continuous milepost notation, to the nearest 0.01 mile that marks the end of any road or trail segment.

endocanthic breadth
The horizontal linear distance between the right and left endocanths. Also referred to as interocular breadth.
endocanthis
The junction of the most medial parts of the upper and lower eyelids, with the eyelids open normally. May be referred to as internal canthus or medial canthus.

endocarditis
An inflammation of the inner lining membrane of the heart, usually involving the heart valves. Bacterial endocarditis is an acute or subacute, febrile, systemic disease characterized by bacterial infection of the heart valves or irregular areas on the endocardium, with the formation of bacteria-laden vegetation on these areas.

endocardium
The membrane lining the chambers of the heart and covering the cusps of the various valves.

endocrine
(1) Secreting internally. (2) Pertaining to internal secretion.

endocrine gland
Gland that regulates body activity by special secretions, the hormones, which are delivered directly into the blood. Each of the glands within the endocrine system has one or more specific functions, but they are all dependent upon other glands in the system for maintenance of a normal hormonal balance in the body.

endocrinology
The study of the glands of internal secretions.

endogenous
Originating within an organ or part.

endolymph
The fluid within the semicircular ducts, the utricle, saccule, and cochlear duct of the inner ear.

endometriosis
A condition in which tissue, more or less perfectly resembling the uterine mucous membrane, occurs aberrantly in various locations in the pelvic cavity. The condition may be characterized by pelvic pain, abnormal uterine or rectal bleeding, dysmenorrhea, and symptoms of pressure within the pelvic cavity. Sterility and dyspareunia also may be present.

endometrium
The mucous membrane lining the uterus.

endomorph
A Sheldon somatotype characterized generally by a soft, rounded body, with greater amounts of fatty tissue, little muscle, and an abdominal protrusion.

endorsement
(1) Insurance. An amendment to an insurance policy. (2) Transit. An authorization to an individual's commercial driver's license (CDL) required to permit the individual to operate certain types of commercial motor vehicles.

endoscope
An instrument used for direct visual inspection of hollow organs or body cavities.

endoskeleton
The framework of hard structures, embedded in and supporting the soft tissues of the body of higher animals, derived principally from the mesoderm.

endospore
A thick-walled structure formed within the cells of certain bacteria that allows the organism to withstand adverse environmental conditions, such as drying.

endothermic
Refers to a reaction in which the products contain more energy than the reacting materials, causing the absorption of energy as heat.

endothoracic
Within the thorax; situated internal to the ribs.

endotoxin
A heat-stable toxin that is present in the bacterial cell but not in cell-free filtrates of cultures of intact bacteria.

endpoint
See breakpoint.

endurance
A measure of the ability to maintain some specific level of effort, usually represented in units of time. May be referred to as capacity.

enema
(1) The introduction of fluid into the rectum. (2) A solution introduced into the rectum to promote evacuation of feces or as a means of administering nutrient or medicinal substances, anesthetics, or opaque material in roentgen examination of the lower intestinal tract.
energy
(1) General. The capacity for doing work or the amount of work done. The product of power (watts) and time duration (seconds) where one watt-second equals one joule. Forms of energy include chemical, nuclear, kinetic, and others. (2) DOE. The capacity for doing work as measured by the capability of doing work (potential energy) or the conversion of this capability to motion (kinetic energy). Energy has several forms, some of which are easily convertible and can be changed to another form useful for work. Most of the world's convertible energy comes from fossil fuels that are burned to produce heat that is then used as a transfer medium to mechanical or other means to accomplish tasks. Electrical energy is usually measured in kilowatt hours, while heat energy is usually measured in British Thermal Units (BTUs).

energy average level
A quantity calculated by taking ten times the common logarithm of the arithmetic average of the antilogs of one-tenth of each of the levels being averaged. The levels may be of any consistent type, such as maximum sound levels, sound exposure levels, and day-night sound levels.

energy capacity
Measured in kilowatt hours. The energy delivered by the battery, when tested at C/3 discharge rate, up to termination of discharge specified by the battery manufacturer. The required acceleration power must be delivered by the battery at any point up to 80% of the battery’s energy capacity rating.

energy consumption
The use of energy as a source of heat or power or as an input in the manufacturing process.

energy efficiency
In reference to transportation, the inverse of energy intensiveness. The ratio of outputs from a process to the energy inputs, for example, miles traveled per gallon of fuel (mpg).

energy efficient motors
Are also known as "high-efficiency motors" and "premium motors." They are virtually interchangeable with standard motors, but differences in construction make them more energy efficient.

energy expenditure
See metabolic rate.

energy facilities
Under the Federal Coastal Zone Management Act of 1972: Any equipment or facility which is or will be used primarily in the exploration for, or the development, production, conversion, storage, transfer, processing, or transportation of any energy resource; or for the manufacture, production, or assembly of equipment, machinery, products, or devices which are involved in any such activity. The term includes, but is not limited to electric generating plants; petroleum refineries and associated facilities; gasification plants; facilities used for the transportation, conversion, treatment, transfer, or storage of liquefied natural gas; uranium enrichment or nuclear fuel processing facilities; oil and gas facilities, including platforms, assembly plants, storage depots, tank farms, crew and supply bases, and refining complexes; facilities including deepwater ports, for the transfer of petroleum; pipelines and transmission facilities; and terminals which are associated with any of the foregoing.

energy flow
Under ISO 14000, input flow to or output flow from a unit process or product system measured in units of energy.

Energy Information Administration (EIA)
An independent agency within the U.S. Department of Energy that develops surveys, collects energy data, and analyzes and models energy issues. The Agency must meet the requests of Congress, other elements within the Department of Energy, Federal Energy Regulatory Commission, the Executive Branch, its own independent needs, and assist the general public, or other interest groups, without taking a policy position.

energy intensity
In reference to transportation, the ratio of energy inputs to a process to the useful outputs form that process; for example, gallons of fuel per passenger-mile or BTU per ton mile.

energy management
The allocation or use of energy.
Energy Research and Development Administration (ERDA)
The part of the now defunct Atomic Energy Commission (AEC) that became the reactor development section and was subsequently incorporated into the Department of Energy.

energy source
A substance, such as petroleum, natural gas, or coal, that supplies heat or power. In Energy Information Administration reports, electricity and renewable forms of energy, such as biomass, geothermal, wind, and solar, are considered to be energy sources.

energy summation of levels
A quantity calculated by taking ten times the common logarithm of the sum of the antilogs of one-tenth of each of the levels being summed. The levels may be of any consistent type, such as day-night sound level or equivalent sound level.

energy trace and barrier analysis (ETBA)
A system safety analytical technique used to evaluate the flow of energy through a system and analyze the effectiveness of existing barriers within the system which are intended to prevent unwanted transfers of that energy flow.

enfleshment
The use of volumes surrounding body segments or links in human computer modeling to stimulate the presence of body tissues.

enforcement
(1) Law. The act of putting something such as a law into effect; the execution of a law; the carrying out of a mandate or command. (2) Environmental. EPA, state, or local actions to obtain compliance with environmental laws, rules, regulations, or agreements and/or obtain penalties or criminal sanctions for violations. Enforcement procedures may vary, depending on the specific requirements of different environmental laws and related implementing regulatory requirements.

enforcement decision document (EDD)
A document that provides an explanation to the public of EPA’s selection of the cleanup alternatives at enforcement sites on the National Priorities List. Similar to a record of decision.

enforcement powers
The 13th, 14th, 15th, 19th, 23rd, 24th, and 26th Amendments to the U.S. Constitution; each contains clauses granting to Congress the power to enforce by appropriate legislation the provisions of such Amendments.

ENG
See electronystagmogram.

engage
To employ or involve oneself; to take part in; to embark on.

engaged in commerce
To be "engaged in commerce" for purposes of Fair Labor Standards Act and Federal Employers' Liability Act, an employee must be actually engaged in the movement of commerce or the services he/she performs must be so closely related thereto as to be for all practical purposes an essential part thereof, rather than an isolated local activity.

engaged in employment
To be rendering service for an employer under the terms of employment, and is more than being merely hired to commence work.

engine
A locomotive propelled by any form of energy and used by a railroad.

engine classification
A 2-digit numeric code identifying vehicle engines by the number of cylinders.

engine displacement
The volume in inches, through which the head of the piston moves, multiplied by the number of cylinders in the engine. Also known as cubic inch displacement (CID), may also be measured in liters. See also cylinder and engine size.

engine retarder
Electronic equipment which governs engine speed control.

engine size
The total volume within all cylinders of an engine, when pistons are at their lowest positions. The engine is usually measured in "liters" or "cubic inches of displacement (CID)." Generally, larger engines result in greater engine power, but less fuel efficiency. There are 61.024 cubic inches in a liter. See also cylinder and engine displacement.
engineer
(1) An individual qualified by education, training, and/or experience to practice in one or more fields of engineering. (2) A person responsible for operating and maintaining the power system on a vessel.

engineered barriers
Under the Federal Nuclear Waste Policy Act of 1982: Manmade components of the disposal system designed to prevent the release of radionuclides into the geologic medium involved. The term includes the high-level radioactive waste form, high-level radioactive waste canisters, and other materials placed over and around such canisters.

engineered performance standard
See standard time.

engineering
A discipline in which knowledge of the mathematical and natural sciences, gained by some combination of education, training, and practical experience, is integrated with various natural materials and forces to shape the environment.

engineering anthropology
The application of anthropometric data for designing products to be used by humans. See also human factors engineering.

engineering controls
Measures taken to prevent or minimize hazard exposure through the application of controls such as improved ventilation, noise reduction techniques, chemical substitution, equipment and facility modifications, etc.

engineering model
A full-size structural model which is functionally identical to and dimensionally corresponds with the intended or actual final production item.

engineering psychology
See human factors engineering.

engineering tolerance
The maximum degree of variation permitted or allowed on a given specification, drawing, or part. Also referred to as tolerance, tolerance specification, and tolerance limits.

English System
A nearly obsolete system of measurement, used only in the United States, whose primary units are essentially "non-metric" in nature (e.g., feet, inches, yards, miles, gallons, etc.). See also basic units and English Units.

English Units
The term "English" refers to the United States legislative interpretation of the units as defined in a document prepared by the National Institute of Standards and Technology (NIST), U.S. Department of Commerce, Special Publication 330. Commonly used English units in Highway Performance Monitoring System (HPMS) are miles, feet, and inches. See also English System and base units.

engram
A postulated neural pathway representing the trace of a memory in the brain.

engulfment
As pertains to confined spaces, the surrounding and effective capture of a person by a liquid or finely divided solid substance that can be aspirated to cause death by filling or plugging the respiratory system or that can exert enough force on the body to cause death by strangulation, constriction, or crushing.

enhancement coding
Any technique for increasing the chances that a particular item will stand out against a background. Examples include color coding, blinking, and bolding.

enjoin
To require; command; positively direct. To require a person, by writ of injunction, to perform, or to abstain or desist from, some act.

enplaned passenger
The total number of revenue passengers boarding aircraft.

enplaned revenue tons of freight and mail
The number of revenue tons of freight and mail loaded on an aircraft including originating and transfer tons.

enplanement
Domestic, territorial, and international revenue passengers who board an aircraft in the states in scheduled and non-scheduled service of aircraft in intrastate, interstate, and foreign commerce and includes intransit passengers (passengers on board international flights that transit an airport in the US for non-traffic purposes).
enrichment
The addition of nutrients (e.g., nitrogen, phosphorus, carbon compounds) from sewage effluent or agricultural runoff to surface water. This process greatly increases the growth potential for algae and aquatic plants.

enrolled bill
The final copy of a bill or joint resolution which has passed both houses of a legislature and is ready for signature. In legislative practice, a bill which has been duly introduced, finally passed by both houses, signed by the proper officers of each, approved by the governor (or president) and filed by the secretary of state.

enter
A user operation which signifies the end of a sequence of keystrokes or other operations and directs the computer to take action based on the content of that sequence.

enteric
Pertaining to the intestines.

entering judgements
The formal entry of the judgement on the rolls or records (e.g., civil docket) of the court, which is necessary before bringing an appeal or an action on the judgement. The entering of judgement is a ministerial act performed by the clerk of court by means of which permanent evidence of a judicial act in rendering judgement is made a record of the court.

enteritis
An inflammation of some portion of the intestines. A general condition that can be produced by a variety of causes. Bacteria and certain viruses may irritate the intestinal tract and produce symptoms of abdominal pain, nausea, vomiting, and diarrhea. Similar effects may result from poisonous foods such as mushrooms and berries, or from a harmful chemical present in food or drink. Enteritis may also be the consequence of overeating, alcoholic excesses, or emotional tension.

enterocolitis
Inflammation of the small intestine and colon.

enteromegaly
Enlargement of the intestines.

enterotoxin
(1) A toxin specific for the cells of the intestinal mucosa. (2) A toxin arising in the intestine. (3) An exotoxin that is protein in nature and relatively heat-stable, produced by staphylococci and causing food poisoning.

enterprise
A business venture or undertaking.

enterprise liability
Imposition of liability upon each member in industry who manufactures or produces a product which causes injury or harm to a consumer and apportions liability of each member of industry by reference to that member's share of the market for the product.

enthalpy
Heat function at constant pressure. Enthalpy is sometimes also called the heat content of the system.

entire loss of sight
In legal terms, with respect to one eye or both, means substantial blindness, not necessarily absolute.

entitlement
See apportionment.

entity
(1) One of the more basic graphical elements, such as a line, arc, or circle. (2) An individual, organism, or other object having existence.

entraining agent
Any event, signal, or cue which is a driver for maintaining periodicity in biological rhythms. Also referred to as Zeitgeber and synchronizer.

entrainment
The mixing of environmental air into a pre-existing air current or cloud so that the environmental air becomes part of the current or cloud.

entrant
A person who has been authorized by their employer to enter a permit-required confined space.

entrapment
(1) Law. The act of officers or agents of the government in inducing a person to commit a crime not contemplated by him/her, for the purpose of instituting a criminal prosecution against him/her. (2) Vehicle Safety. Refers to persons being partially or completely in the vehicle and mechanically restrained by a
damaged vehicle component. Jammed doors and immobilizing injuries, by themselves, do not constitute entrapment. Occupants pinned by cargo shift are not considered to be entrapped. Occupants who are completely or partially ejected and subsequently become pinned by their own vehicle and any surface other than their own vehicle are not considered entrapped. An occupant whose seat belt buckle release mechanism is jammed as a result of a crash is not considered entrapped.

**entrepreneur**
One who, on his/her own, initiates and assumes the financial risks of a new enterprise and who undertakes its management.

**entropy**
A measure of the degree of disorder in a system, wherein every change that occurs and results in an increase of disorder is said to be a positive change in entropy. All spontaneous processes are accompanied by an increase in entropy. The internal energy of a substance that is attributed to the internal motion of the molecules.

**entrust**
To give something over to another after a relation of confidence has been established.

**entry**
(1) Law. The act of making or entering a record; a setting down in writing of particulars; or that which is entered; an item. (2) **Confined Spaces.** The act of passing through an opening into a confined space and the ensuing work in the space. An entry occurs when any part of the body breaks the plane of an opening of what is classified as a confined space. An alternate definition is any action resulting in any part of the face of the employee breaking the plane of any opening of a confined space as well as any ensuring work inside the space.

**entry loss**
Loss in pressure caused by air flowing into a duct or hood opening.

**entry permit**
The written authorization of the employer for entry into a confined space under defined conditions for a stated purpose during a specified time.

**entry point**
The point at which an aircraft transitions from an offshore control area to oceanic airspace.

**entry supervisor**
As pertains to confined spaces, the person (such as the employer, foreman, or crew chief) responsible for determining if acceptable entry conditions are present at a permit space where entry is planned, for authorizing entry and overseeing entry operations, and for terminating entry. An entry supervisor may also serve as an **attendant** or as an **authorized entrant**, as long as that person is trained and equipped as required by OSHA for each role he or she fills. Also, the duties of entry supervisor may be passed from one individual to another during the course of any operation.

**enumerated**
This term is often used in law as equivalent to "mentioned specifically," "designated," or "expressly named or granted," as in speaking of "enumerated" governmental powers, items of property, or articles in a tariff schedule.

**enumerated powers**
The powers specifically delegated by the Constitution to some branch or authority of the national government, and which are not denied to that government or reserved to the States or to the people. The powers specifically given to Congress are enumerated in Article I of the U.S. Constitution.

**envelope**
A specified volume as determined by some methodology or required function.

**environment**
The sum of all external conditions affecting the life, development, and survival of an organism. Includes water, air, land, and all plants and man and other animals living therein, and the interrelationships which exist among these.

**environmental anthropometry**
The measurement or study of changes in an individual's anthropometry due to his/her physical environment.

**environmental aspect**
Under ISO 14000, the element of an organization's activities, products, or services that can interact with the environment.
environmental assessment
A written environmental analysis which is prepared pursuant to the National Environmental Policy Act to determine whether a federal action would significantly affect the environment and thus require preparation of a more detailed environmental impact statement. Also referred to as environmental impact assessment (EIA).

environmental audit
(1) An independent assessment of the current status of a party's compliance with applicable environmental requirements. (2) An independent evaluation of a party's environmental compliance policies, practices, and controls. (3) Auditing an organization's policies and procedures to bring industrial operations and practices into compliance with environmental laws and regulations, its permits, and any agreements with government agencies before they trigger enforcement action.

environmental audit privilege statutes
State legislation enacted by many states which insulates companies from abuse of their self-policing efforts. Although the statutes of the individual states do vary, generally the elements include a) documentation using Environmental Audit Report, b) immunity or reduction in penalties for voluntary disclosure, c) waiver of privilege, d) loss of privilege in certain cases, and e) a burden of proof in proving the privilege and due diligence toward compliance. See also State Audit Immunity Statutes.

environmental control
The regulation or alteration of the environment to maintain certain conditions.

environmental due diligence
The process used to investigate a commercial or industrial property (usually prior to completion of a real estate transaction) for contamination by hazardous wastes or hazardous substances.

environmental factors
Conditions other than indoor air contaminants that cause stress, comfort and/or health problems (e.g., humidity extremes, drafts, lack of air circulation, noise, and overcrowding).

environmental fate
Term used to describe the transport and transformation processes which occur to a chemical in the environment.

Environmental Guidelines for Sentencing Organizations (Draft)

environmental health
(1) The body of knowledge concerned with the prevention of disease through the control of biological, chemical, or physical agents in air, water, and food. Also concerned with the control of environmental factors that may have an impact on the well-being of people. (2) The activities necessary to ensure that the health of employees, customers, and the public is adequately protected from any health hazards associated with a company's operations.

environmental impact
Under ISO 14000, any change to the environment, whether adverse or beneficial, wholly or partially resulting from an organization's activities, products, or services.

environmental impact assessment (EIA)
A report prepared by an applicant for a discharge permit which identifies and analyzes the impact of a new source of emission to the environment and discusses possible alternatives.

environmental impact statement (EIS)
A document required of federal agencies by the National Environmental Policy Act for major projects or legislative proposals significantly affecting the environment. A tool for decision making, it describes the positive and negative effects of the undertaking and lists alternative actions.

environmental impairment liability
A type of insurance coverage carried by hazardous waste generators and others involved in hazardous waste handling and disposal. The coverage typically provides funds for remediating environmental impairment or paying for damages resulting from the impairment. Not all such insurance polices include the same types of coverage; however, some have specific exclusion for certain types of occurrences or releases.
environmental inputs
The economic, social, psychological, managerial, mechanical, and climatic variables which cause an individual to respond, either physiologically or behaviorally.

environmental labeling or declaration
A tool of environmental management which is a claim indicating the environmental aspects of a product or service that may take the form of statements, symbols, or graphics on product or package labels, product literature, technical bulletins, advertising, publicity, etc. An element of ISO 14000.

environmental lapse rate
The distribution of the temperature vertically. It is most often measured with a radiosonde. Also called the lapse rate.

environmental leadership program (ELP)
An EPA positive incentives program which earns a company a degree of trust by that agency and public recognition once the company has met the very highest standards of compliance. Applicant companies must be held to a high standard of performance at the time of entry into the program and must have addressed any outstanding problems with either state or federal officials. The company’s own internal self-evaluation system would serve as evidence of its continuous compliance. See also carrot and stick approach and positive incentives.

environmental monitoring
The systematic collection, analysis, and evaluation of environmental samples, such as from air, to determine the contaminant levels to which workers are exposed.

environmental noise
Under the Federal Noise Control Act of 1972, the intensity, duration, and the character of sounds from all sources.

environmental objective
Under ISO 14000, the overall environmental goal, arising from the environmental policy, that an organization sets itself to achieve, and which is quantified where practicable.

environmental performance
Under ISO 14000, the measurable results of the environmental management system, related to an organization's control of its environmental aspects, based on its environmental policy, objectives, and targets.

environmental policy
Under ISO 14000, a statement by an organization of its intentions and principles in relation to its overall environmental performance which provides a framework for action and for setting of its environmental objectives and targets.

Environmental Protection Agency (EPA)
Established in 1970 by Presidential Executive Order (President Nixon), the EPA is the primary federal agency charged with ensuring the protection and preservation of environmental resources in the United States. It is responsible for pollution control and abatement, including programs for air, water, pollution, solid and toxic waste, pesticide, control, noise abatement, and other pollution sources and concerns.

Environmental Protection Agency Certification Files
Computer files produced by Environmental Protection Agency (EPA) for analysis purposes. For each vehicle make, model and year, the files contain the EPA test Miles Per Gallon (MPG) (city, highway, and 55/45 composite). These MPGs are associated with various combinations of engine and drive-train technologies (e.g., number of cylinders, engine size, gasoline or diesel fuel, and automatic or manual transmission). These files also contain information similar to that in the Department of Energy (DOE)/EPA Gas Mileage Guide, although the MPGs in that publication are adjusted for shortfall.

Environmental Protection Agency Composite Mile Per Gallon (MPG)
The harmonic mean of the Environmental Protection Agency (EPA) city and highway MPG, weighted under the assumption of 55 percent city driving and 45 percent highway driving.

environmental response team
EPA experts located in Edison, New Jersey and Cincinnati, Ohio who can provide around-the-clock technical assistance to EPA regional offices and states during all types of emergencies involving hazardous waste sites and spills of hazardous substances.
environmental restoration
Restitution for the loss, damage, or destruction of natural resources arising out of the accidental discharge, dispersal, release, or escape into or upon the land, atmosphere, watercourse, or body of water of any commodity transported by a motor carrier. This shall include the cost of removal and the cost of necessary measures taken to minimize or mitigate damage to human health, the natural environment, fish, shellfish, and wildlife.

evironmental risk
The probability of a human health effect resulting from some environmental state or circumstance.

evironmental sampling
The taking of samples from the environment for analysis. Also called sampling. See also environmental monitoring.

evironmental stressor
Any condition in the environment which produces stress in an organism, whether climatological, biological, chemical, mechanical, or particulate. Also referred to as ecological stress vector.

evironmental target
Under ISO 14000, the detailed performance requirement, quantified where practicable, applicable to the organization or parts thereof, that arises from the environmental objectives and that needs to be set and met to achieve those objectives.

environmentally sensitive area
An area of environmental importance which is in or adjacent to navigable waters.

enzyme
An organic compound, frequently a protein, that accelerates (catalyzes) specific transformations of material, as in the digestion of foods.

EOG
See electrooculogram.

E. P. Tox
EP Toxicity or Extraction Procedure Toxicity; an analytical laboratory characterization using extraction procedures for determining primarily toxic metal concentrations and/or leaching potential. Recently updated as a series of combined tests now called TCLP or toxicity characterization leaching procedure.

EPA
See Environmental Protection Agency.

EPCRA
Emergency Planning and Community Right-to-Know Act of 1986 (Federal). It is Title III of the Superfund Amendments and Reauthorization Act (SARA) of 1986.

ephedrine
An alkaloid obtained from the shrub Ephedra equisetina or produced synthetically; used, in the form of ephedrine hydrochloride or ephedrine sulfate, as a sympathomimetic, as a pressor substance, to relieve bronchial spasm and as a central nervous system stimulant. It may be administered orally, topically, intramuscularly, or intravenously.

epicardia
The lower portion of the esophagus, extending from the esophageal hiatus to the cardia, the upper orifice of the stomach.

epicardium
The layer of the pericardium that is in contact with the heart.

epicenter
The point on the earth's surface directly above the (subterranean) point of origin (the hypocenter) of an earthquake. Only two measurements, latitude and longitude, are need to locate it.

epicondyle
A bony protrusion at the distal end of bones such as the humerus, radius, and femur.

epicondylitis
A cumulative trauma disorder (CTD) characterized by inflammation or infection in the general area of the elbow, such as tennis elbow.

epidemic
The occurrence of cases that are of similar nature in human populations in a particular geographic area and that are clearly in excess of the usual incidence.

epidemiologist
A person who applies epidemiological principles and methods to the prevention and control of diseases.

epidemiology
The study of the distribution and determinants of disease causation in human populations.
Examines the frequency of occurrence and distribution of a disease throughout a population, often with the purpose of determining the cause. To the industrial hygienist, it is the determination of statistically significant relationships of specific diseases of specific organs of the human body in selected organs of the human body in selected occupational groups (cohorts) in comparison with selected controls.

**epidermis**

The outer, non-vascular, non-sensitive layer of the skin that covers the true skin.

**epiglottis**

A large piece of cartilage at the top of the larynx which closes the tracheal entrance when swallowing to prevent food from entering.

**epilation**

The removal of hair by the roots. Loss of body hair.

**epilepsy**

A disruption of the normal rhythm of the brain. An occasional, periodic, excessive and disorderly discharge of nerve cells in the brain. The discharge is chemical-electrical in nature. While the discharge itself is hidden, it manifests itself in various forms of visible activity called seizures. The type of seizures will vary according to the location of the discharge in the brain, and the spread of the charges from cell to cell. In many cases, seizures are so mild (a brief twitch, a momentary attention loss) that they are not recognized. Even when they are, they have a minimal effect. A major convulsion which the public tends to associate immediately with epilepsy is only one of a number of seizure types.

**epinephrine**

A catecholamine which may act as a neurotransmitter or hormone, depending on the location and source. More commonly referred to as adrenaline.

**epiphyseal separation**

Not a bone fracture in true sense, but a separation of the fibers and cartilaginous tissues which attach the epiphysis to the femur.

**epiphyseitis**

Inflammation of an epiphysis (a process of bone attached for a time to another bone by cartilage).

**epiphysis**

The region at the end of a long bone having an expanded cross-section.

**episode**

(1) **Epilepsy.** With regard to grand mal epilepsy, a seizure event. 
(2) **Air Pollution.** An incident within a given region as a result of a significant concentration of an air pollutant with meteorological conditions such that the concentration may persist and possibly increase with the likelihood that there will be a significant increase in illnesses and possibly deaths, particularly among those who have a preexisting condition that may be aggravated by the pollutant.

**epistaxis**

Hemorrhage from the nose; a nosebleed.

**epithelial**

Pertaining to or comprised of epithelium.

**epithelioma**

Tumor derived from epithelium.

**epithelium**

Refers to cells that line all canals and surfaces that have contact with external air, and also cells that are specialized for secretion in certain organs such as the liver and kidneys.

**eponychium**

The thin layer of tissue which overlaps the lunula at the base of a fingernail or toenail.

**EPP**

See end-plate potential.

**EPRI**

Electric Power Research Institute.

**EP toxic waste**

A waste with certain toxic substances present at levels greater than limits specified by regulation.

**Equal Access to Justice Act**

This 1980 Act entitles certain prevailing parties to recover attorney and expert witness fees, and other expenses, in actions involving the United States, unless the government action was substantially justified.

**Equal Employment Opportunity (EEO)**

A series of government regulations intended to prevent discrimination in hiring, firing, and promotion of minorities and women.
Equal Employment Opportunity Commission (EEOC)
The EEOC was created by Title VII of the Civil Rights Act of 1964 (78 Stat. 241; 42 U.S.C.A. § 2000a), and became operational July 2, 1965. The purposes of the Commission are to end discrimination based on race, color, religion, age, sex, or national origin in hiring, promotion, firing, wages, testing, training, apprenticeship, and all other conditions of employment; and to promote voluntary action programs by employers, unions, and community organizations to put equal employment opportunity into actual operation.

equal-energy white point

See achromatic point.

equal-interval scale
A measurement scale which meets the criteria for an ordinal scale and which items can be classified by value on a linear magnitude measure, with equal distances between measures, but providing no information as to the absoluteness of the magnitudes. May be referred to as interval scale.

Equal Pay Act
Federal law which mandates the same pay for all persons who do the same work without regard to sex, age, etc. For work to be "equal" within the meaning of the Act, it is not necessary that the jobs be identical but only that they be substantially equal.

equal protection clause
That provision in the 14th Amendment to the U.S. Constitution which prohibits a state from denying to any person within its jurisdiction the equal protection of the laws. This clause requires that persons under like circumstances be given equal protection in the enjoyment of personal rights and the prevention and redress of wrongs.

equal protection of the law
The constitutional guarantee of "equal protection of the laws" means that no person or class of persons shall be denied the same protection of the laws which is enjoyed by other persons or other classes in like circumstances in their lives, liberty, property, and in their pursuit of happiness.

equalizing reservoir

Rail. An air reservoir connected with and adding volume to the top portion of the equalizing piston chamber of the automatic brake valve, to provide uniform service reductions in brake pipe pressure regardless of the length of the train.

equilibrium
(1) Physiology. A state in which the body maintains desired posture or retains control in body movement through continuous sensory monitoring and the balancing of muscle tensions. See also static equilibrium and dynamic equilibrium. (2) Radiation. The state at which the radioactivity of consecutive elements within a radioactive series is neither increasing nor decreasing.

equilibrium vapor pressure
The necessary vapor pressure around liquid water that allows the water to remain in equilibrium with its environment. Also called saturation vapor pressure.

equinoxes
The two periods of the year (vernal equinox about March 21st, and the autumnal equinox about September 22nd) when the time from the rising of the sun to its setting is equal to the time from its setting to its rising.

equinus
A deformity where the foot is continuously plantar-flexed.

equipment
A general term including material, fittings, devices, appliances, fixtures, apparatus, and the like, used as a part of, or in connection with, an electrical installation.

equipment code
Transit. A six-digit numeric code used to classify equipment by its usage characteristics (passenger carrying, cargo hauling, etc.), gross weight rating, and equipment configuration (panel truck, pick-up, stake body, dump etc.).

equipment consist
Rail. An equipment consist is a train, locomotive(s), cut of cars, or a single car not coupled to another car or locomotive.

equipment damage
Rail. All costs, including labor and material, associated with the repair or replacement-in-
kind of on-track rail equipment. Trailers and/or container on flat cars are considered to be lading and damage to these is not to be included in on-track equipment damage. Damage to a flat car carrying a trailer/container is to be included in reportable damage.

equipment-type flow process chart
A flow process chart which provides a plan or usage record for equipment.

equity
A legal doctrine which emphasizes fairness as opposed to law in resolving disputes. Sometimes referred to as balancing of equities; for instance, when a court decides whether or not to issue an injunction.

equivalent airspeed
The calibrated airspeed of an aircraft corrected for adiabatic compressible flow for the particular altitude. Equivalent airspeed is equal to calibrated airspeed in standard atmosphere at sea level.

equivalent diameter
See aerodynamic diameter.

equivalent form
Any of two or more forms of some test which are very similar in content and difficulty and which are expected to yield similar means and variability for a given group.

equivalent groups method
See matched groups design.

equivalent mean luminance
The transformed luminance output by a flickering light compared to an equivalent steady light.

equivalent method
Any method of sampling or analyzing for air pollution which has been demonstrated to the EPA Administrator’s satisfaction to be, under specific conditions, an acceptable alternative to the normally used reference methods.

equivalent sound level
The level, in decibels, of the mean-square A-weighted sound pressure during a stated time period, with reference to the square of the standard reference sound pressure of 20 micropascals. It is the level of the sound exposure divided by the time period and is abbreviated as $L_{eq}$.

equivalent weight
The weight of an element that combines chemically with 8 grams of oxygen or its equivalent.

erbium
A chemical element, atomic number 68, atomic weight 167.26, symbol Er.

ERDA
See Energy Research and Development Administration.

erect
Pertaining to a standing posture in which the individual's shoulders are back and the neck is fully extended.

erg
A unit of work equal to the force of one dyne acting through a distance of one centimeter.

ERG
See electroretinography.

erograph (Kelso-Hellebrandt)
A device used for measuring muscle work output in a series of repetitive movements.

erometer
Any device which permits some determination of the work performed by an individual over a period of time.

ergonomics
A multi-disciplinary activity that concentrates on the interactions between the human and their total working environment with consideration for the stressors that may be present in that environment such as atmospheric heat, illumination, and sound as well as all the tools and equipment used in the work place. Also referred to as human factors and human factors engineering.
ergonomist
An individual trained in health, behavioral, and technological sciences and who is competent to apply those fields to the industrial environment to reduce stress on personnel and thereby prevent work strain from developing to pathological levels or producing fatigue, careless workmanship, or high employee turnover.

ERISA

Erlanger-Gasser classification
A method for classifying motor neurons, based on conduction velocity, into three primary groups: A, B, and C, with the A group being further divided into four subgroups: α, β, γ, and δ.

ERMAC
Electromagnetic Radiation Management Advisory Council.

erosion
The wearing away of land surface by wind or water. Erosion occurs naturally from weather or runoff but can be intensified by land-clearing practices related to farming, residential or industrial development, road building, or timber-cutting.

ERPG
See Emergency Response Planning Guides.

erroneous
Involving error; deviating from the law. This term is not generally used as designating a corrupt or evil act.

erroneous judgement
One rendered according to course and practice of court, but contrary to law, upon mistaken view of law, or upon erroneous application of legal principles.

error
(1) The difference between the true or actual value to be measured and the value to be measured and the value indicated by the measuring system. Any deviation of an observed value from the true value. (2) An inappropriate response by a system, whether of commission, omission, inadequacy, or timing. (3) A mistaken judgment or incorrect belief as to the existence or effect of matters of fact, or a false or mistaken conception or application of the law.

error in exercise of jurisdiction
Error in determination of questions of law or fact on which the court's jurisdiction in a particular case depends.

error in fact
Error in fact occurs when, by reason of some fact which is unknown to the court and not apparent on the record (e.g., infancy, or death of one of the parties), it renders a judgement void. Such occurs when some fact which really exists is unknown, or some fact is supposed to exist which really does not.

error in law
An error of the court in applying the law to the case on trial (e.g., in ruling on the admission of evidence, or in charging the jury.

error rate
The number of errors per division, in which the division may be time, number of products output, motions, or other quantifiable variable.

errors and omissions (O&E) insurance
A type of insurance that indemnifies the insured for any loss sustained because of an error or oversight on his/her part. See also insurance.

ERV
See expiratory reserve volume.

erysipelas
An inflammation of the skin marked by red patches with sharp border lines, usually due to Group A hemolytic streptococci. The visible symptoms or erysipelas, a form of cellulitis, are round or oval patches on the skin that promptly enlarge and spread, becoming swollen, tender, and red. The affected skin is hot to the touch, and, occasionally, the adjacent skin blisters. Headache, vomiting, fever, and sometimes complete prostration can occur.

erythema
A abnormal redness of the skin, due to distention of the capillaries with the blood. It can be caused by a various agents such as heat, certain drugs, ultraviolet rays, and ionizing radiation.
**erythemal region**
The electromagnetic spectrum in the ultraviolet region from 2800 angstroms to 3200 angstroms.

**erythemal threshold**
That level at which erythema becomes apparent. Also referred to as *minimal perceptible erythema*.

**erythrasma**
A chronic infection of the skin, marked by the development of red or brownish patches on the inner side of the thigh, on the scrotum, and in the axilla.

**erythroblastemia**
The presence in the peripheral blood of abnormally large numbers of nucleated red cells.

**erythrocyte**
A red blood cell which contains hemoglobin and transports oxygen to body tissues.

**erythromycin**
An antibiotic obtained from *Streptomyces erythreus*. It is effective against a wide variety of organisms, including gram-negative and gram-positive bacteria and many rickettsial and viral infectious agents. It may be administered orally or parenterally.

**escalator clause**
(1) In *union contracts*, a provision that wages will rise or fall depending on some standard like the cost of living index. (2) In *a lease*, a provision that rent may be increased to reflect an increase in real estate taxes, operating costs, and even increases in Consumer Price Index. (3) In *construction contracts*, a clause authorizing a contractor to increase his/her contract price should costs of labor or materials increase.

**escape clause**
A provision in a contract, insurance policy, or other legal document permitting a party or parties to avoid liability or performance under certain conditions.

**eschar**
Damage created to the skin and underlying tissue from a burn or as a result of contact with a corrosive material.

**esophagus**
That portion of the digestive system composed of the passageway extending from the lower part of the pharynx to the stomach. The hollow muscular tube extending from the pharynx to the stomach, consisting of an outer fibrous coat, a muscular layer, a submucous layer and an inner mucous membrane. The junction between the stomach and esophagus is closed by a muscular ring known as the cardiac sphincter, which opens to allow the passage of food into the stomach. In an adult the esophagus is usually 10 to 12 inches long.

**esophoria**
A condition in which the eyes tend to turn inward, preventing binocular vision.

**ESP**
See *electrostatic precipitator*.

**ESR**
Electrical skin resistance. See *skin resistance response*.

**EST**
See *ex-ship's tackle*.

**establishment**
(1) *According to OSHA*: a) A single physical location where business is conducted or where services or industrial operations are performed. Examples include a factory, mill, store, hotel, restaurant, movie theater, farm, ranch, bank, sales office, warehouse, or central administrative office. When distinctly separate activities are performed at a single physical location (such as contract construction activities operated from the same physical location as a lumber yard, each activity shall be treated as a separate establishment. b) For firms engaged in activities such as agriculture, construction, transportation, communications, and electric, gas, and sanitary services, which may be physically dispersed, records may be maintained at a place to which employees report each day. c) Records of personnel who do not primarily report or work at a single establishment, and who are generally not supervised in their daily work, such as traveling sales personnel, technicians, and engineers, shall be maintained at the location from which they are paid or the base from which personnel operate to carry out their activities. (2) *According to FRA*: A single physical location where business is conducted or where services or industrial operations are performed. Examples of railroad establishments include, but are not limited to
an operating division, general office, and a major installation such as a locomotive or car repair or construction facility. For employees who are engaged in dispersed operations, such as track maintenance workers, the "establishment" is the location where these employees report for work assignments. (3) Law. An institution or place of business, with its fixtures and organized staff.

establishment list
A list that contains the names of particular plants located within the territorial jurisdiction of the local OSHA Area Office that are of the types of industries that have been noted on the industry rank report. See also industry rank report.

esthesiometer
An instrument for measuring touch sensitivity.

esthetic
Pertaining to the senses, especially when pleasuring to the senses.

estimate ratio
The ratio of two population aggregates (totals). For example, "average miles traveled per vehicle" is the ratio of total miles driven by all vehicles, over the total number of vehicles, within any subgroup. There are two types of ratio estimates; those computed using aggregates for vehicles and those computed using aggregates for households. Also referred to as aggregate ratio. See also mean and ratio estimate.

estimated arrival time
The time the flight is estimated to arrive at the gate (scheduled operators) or the actual runway on times for nonscheduled operators.

estimated elapsed time
The estimated time required to proceed from one significant point to another.

estimated en route time
Aviation. The estimated flying time from departure point to destination lift-off to touchdown.

estrogen
(1) An estrus-producing substance. (2) A general name for the principal female sex hormones. These hormones are manufactured in the ovaries and, though each has a slightly different function, they are closely related and are usually referred to collectively as estrogen.

estuarine sanctuary
A research area which may include any part or all of an estuary and any island, transitional area, and upland in, adjoining, or adjacent to such estuary, and which constitutes to the extent feasible a natural unit, set aside to provide scientists and students the opportunity to examine over a period of time the ecological relationships within the area.

estuary
(1) That part of a river or stream or other body of water having unimpaired connection with the open sea, where the sea water is measurably diluted with fresh water derived from land drainage. The term includes estuary-type areas of the Great Lakes and the Chesapeake Bay. (2) Associated aquatic ecosystems and those portions of tributaries draining into the estuary up to the historic height of migration of anadromous fish or the historic head of tidal influence, whichever is higher.

ET
Effective temperature.

ETA
See explosive transfer assembly. Also, an acronym for estimated time of arrival.

ETBA
See energy trace and barrier analysis.

ethanol
Otherwise known as ethyl alcohol, alcohol, or grain-spirit. A clear, colorless, flammable oxygenated hydrocarbon with a boiling point of 78.5°C in the anhydrous state. In transportation, ethanol is used as a vehicle fuel by itself (E100), blended with gasoline (E85), or as a gasoline octane enhancer and oxygenate (10% concentration).

Ethernet

ethics
That moral code practiced by an individual or groups, typically referring to a moral code involving honesty, integrity, and other qualities generally judged to be good.

ethmocarditis
Inflammation of the connective tissue of the heart.
ethmoid bone
A relatively complex, irregularly shaped bone within the anterior medial region of the skull behind the nose.

ethnic group
A group of people who either maintains affiliation due to strong racial and/or cultural ties or is descended from a certain race or culture.

ethylenedibromide (EDB)
A chemical used as an agricultural fumigant and in certain industrial processes. Extremely toxic and found to be a carcinogen in laboratory animals, EDB has been banned for most agricultural uses in the United States.

ethylenediamine
A volatile, colorless liquid with an ammonia odor that is used as a solvent and in organic synthesis.

etiologic agents
Infectious microorganisms, viruses, or parasitic agents capable of producing infection and/or disease in a susceptible host.

etiology
The study or theory of the causation of disease; the sum of knowledge regarding disease causes.

ETS
Emergency temporary standard. See Section 6(c) standard.

euphoria
The absence of pain or distress. An exaggerated sense of well-being.

eustachian tube
A hollow, tubular structure connecting the middle ear with the nasal/oral cavity.

eutrophic lakes
Shallow, murky bodies of water that have excessive concentrations of plant nutrients causing excessive algae production. An increase in mineral and organic nutrients reduces the dissolved oxygen, producing an environment that favors plant over animal life.

eutrophication
The slow aging process during which a lake, estuary, or bay evolves into a bog or marsh and eventually disappears. During the later stages of eutrophication, the water body is choked by abundant plant life as the result of increased amounts of nutritive compounds such as nitrogen and phosphorus. Human activities can accelerate the process.

EVA
See extravehicular activity.

evaporation
The change of a substance from the solid or liquid phase to the gaseous or vapor phase.

evaporation fog
Fog produced when sufficient water vapor is added to the air by evaporation. The two common types are steam fog, which forms when cold air moves over warm water, and frontal fog, which forms as warm raindrops evaporate in a cool air mass.

evaporation ponds
Areas where sewer sludge is dumped and allowed to dry out.

evaporation rate
The rate at which a material will vaporize (evaporate) as compared to the known rate of a standard material (such as normal-butyl acetate). It is the ratio of the time required to evaporate a measured amount of a liquid to the time required to evaporate the same amount of a reference liquid under ideal test condition. Normal-butyl acetate has typically been used as the reference standard.

evaporative heat loss
The dissipation of body heat through perspiration, indicated by an equation of the form:

\[ H = kA(P_s - P_a) \]

where:

- \( H \) = evaporative heat loss
- \( k \) = evaporative coefficient
- \( A \) = body surface area
- \( P_s \) = saturated vapor pressure of water at skin temperature
- \( P_a \) = ambient water vapor pressure

evaporative heat transfer coefficient
The value of the ratio of the permeability index to the total thermal insulation value of clothing. Also referred to as coefficient of evaporative heat transfer and evaporative transmissibility.

evapotranspiration
The loss of water from the soil both by evaporation and by transpiration from the plants growing in the soil.
evasé
A gradual enlargement at the outlet of an exhaust system to reduce the air discharge velocity efficiently so that velocity pressure can be regained instead of being wasted as occurs when air is discharged directly from a fan housing.

evasive answer
One which consists of refusing either to admit or to deny a matter in a direct, straightforward manner as to which the person is necessarily presumed to have knowledge. An evasive answer is considered and treated as a failure to answer, for which a party may on motion seek a court compelling answers to discovery questions.

evening person
Slang term for an individual who generally likes to go to sleep late at night, likes to sleep late, and has trouble waking early in the morning.

evening shift
*See second shift.*

event
(1) A collection of one or more sample points.
(2) The consequence of anything; the issue or outcome of an action as finally determined.

event recorder
*Rail Operations.* A device, designed to resist tampering, that monitors and records data on train speed, direction of motion, time, distance, throttle position, brake applications and operations (including train brake, independent brake, and, if so equipped, dynamic brake applications and operations) and, where the locomotive is so equipped, cab signal aspect(s), over the most recent 48 hours of operation of the electrical system of the locomotive on which it is installed.

event tree
A graphic depiction of system or operational events as they are related to the top event or failure condition.

event tree analysis
A system safety analysis method, similar to fault tree analysis, used to examine different system or operational responses to various positive or negative conditions which occur during system operation.

eversion
A turning of the bottom of the foot outward such that the more sagittal portions are also elevated slightly.

evertor
Any muscle which is involved in eversion of the foot.

evidence
Any species of proof, or probative matter, legally presented at the trial of an issue, by the act of the parties and through the media of witnesses, records, documents, exhibits, concrete objects, etc. for the purpose of inducing belief in the minds of the court or jury as to their contention.

evidence by inspection
Such evidence as is addressed directly to the senses without intervention of testimony. Tangible, physical evidence.

evidence codes
Statutory provisions governing admissibility of evidence and burden of proof at hearings and trials.

evidence rules
Rules which govern the admissibility of evidence at hearing and trials (e.g., Federal Rules of Evidence, Uniform Rules of Evidence).

evoked potential (EP)
An electrophysiological response recorded from the brain or scalp which is time-linked to peripheral sensory stimulation. Synonymous with evoked response.

evoked response
*See evoked potential.*

ex quay
*Maritime.* The seller makes the goods available to the buyer on the quay (wharf) at the destination named in the sales contract. The seller has to bear the full cost and risk involved in bringing the goods there.

ex ship
*Maritime.* The seller will make the goods available to the buyer on board the ship at the destination named in the sales contract. The seller bears all costs and risks involved in bringing the goods to the destination.

ex ship's tackle (EST)
*Maritime.* Similar to Cost, Insurance and Freight, but seller is responsible for loss and
damage until goods are delivered on dock at port of destination. Seller has to insure goods up to this point. Also called *ex ship*.

**ex warehouse**
Buyer is responsible for all charges to destination and has to arrange insurance to cover the goods from the time they leave the warehouse at the place of shipment until their arrival at final destination. Also called *ex works*.

**ex works**
*See ex warehouse.*

**exa**
Prefix indicating 1 E+18.

**examine (E)**
A mental basic work element involving examination of a part or product.

**exceedance**
Violation of environmental protection standards by exceeding allowable limits or concentration levels.

**excess**
Any property under the control of a federal agency which that agency determines is not required for its needs or for the discharge of its responsibilities.

**excess air**
A quantity of air in excess of the theoretical amount required to completely combust a material, such as a fuel, waste, etc. Also referred to as excess combustion air and is expressed as a percentage (e.g., 20% excess air).

**excess baggage revenue**
Revenues from the transportation by air of passenger baggage in excess of the free allowance.

**excess liability damages**
A cause of action in tort by an insured against his/her liability carrier for the negligent handling of settlement negotiations which result in a judgment against the insured in excess of his/her policy limits.

**excess work allowance**
A special time allowance given a worker for additional work required beyond that specified in his normal task or job or due to some alteration from usual working conditions. Also referred to as *additional work allowance*.

**excessive damages**
Those damages awarded by a jury which are grossly in excess of the amount warranted by law on the facts and circumstances of the case; unreasonable or outrageous damages.

**exchange rate**
A tradeoff for an increased sound pressure level above recommended limits for a proportionately reduced period of time.

**excitation**
The addition of energy to a system, thereby transferring it from its ground state to an excited state.

**excitation purity (p_e)**
The distance between a color sample and neutral white in the 1931 CIE chromaticity diagram relative to the distance between neutral white and the spectrum locus or the purple boundary in the same direction.

**excited state**
An atom with an electron at a higher energy level than it normally occupies. This principle is employed in the use of thermoluminescent dosimeters (TLDs) for determining exposure to ionizing radiation with this type device.

**exclusion zone**
An area surrounding a Liquefied Natural Gas (LNG) facility in which an operator or government agency legally controls all activities in accordance with 49 CFR 193.2057 and 49 CFR 193.2059 for as long as the facility is in operation.

**exclusionary**
Any form of zoning ordinance that tends to exclude specific classes of persons or businesses from a particular district or area.

**exclusive event**
As pertains to fault tree analysis (FTA) and/or the Management Oversight and Risk Tree (MORT), a conditional event which places specific restrictions upon the occurrence of other events. Represented graphically as an oval. *See also conditional event.*

**exclusive right-of-way**
A highway or other facility that can only be used by buses or other transit vehicles. *See also controlled access rights-of-way.*
exclusive rights-of-way
Roadways or other right-of-way reserved at all times for transit use and/or other high occupancy vehicles. The restriction must be sufficiently enforced so that 95 percent of vehicles using the right-of-way are authorized to use it.

Excobodo Rule
Under this rule, when police investigation begins to focus on a particular suspect, the suspect is in custody, the suspect requests and is denied counsel, and the police have not warned him/her of his/her right to remain silent, the accused will be considered to have been denied assistance of counsel and no statement elicited during such interrogation may be used in a criminal trial.

excretion
The removal of a substance or its metabolites from the body in urine, feces, or expired air.

excursion
A movement or deviation from the norm. In industrial hygiene, it is the deviation above the norm that is of concern.

excursion limit
The amount by which an exposure limit can be exceeded, and the number of times in an exposure period it can be exceeded without causing an adverse health effect, narcosis, discomfort, impairment of self rescue, or reducing work efficiency.

Executive Order
A document promulgated by the President of the United States or the Governor of a state binding federal or state agencies, usually instructing them how to carry out or coordinate policies or programs. There are federal Executive Orders on flood plains and wetlands, for example.

executive transportation
Any use of an aircraft by a corporation, company, or other organization for the purposes of transporting its employees and/or property not for compensation or hire, and employing professional pilots for the operation of the aircraft.

exempt carrier
A for-hire interstate operator which transports commodities or provides types of services that are exempt from federal regulation, could also operate within exempt commercial zones.

exempt intracity zone
The geographic area of a municipality or the commercial zone of that municipality described by the Interstate Commerce Commission (ICC) in 49 CFR 1048, revised as of October 1, 1975. The descriptions are printed in Appendix F to Subchapter B of 49 CFR, Chapter III. The term "exempt intracity zone" does not include any municipality or commercial zone in the State of Hawaii. For the purposes of 49 CFR 390.3(g), a driver may be considered to operate a vehicle wholly within an exempt intracity zone notwithstanding any common control, management, or arrangement for a continuous carriage or shipment to or from a point without such zone.

exempt motor carrier
A person engaged in transportation exempt from economic regulation by the Interstate Commerce Commission (ICC) under 49 U.S.C. 10526. Exempt motor carriers are subject to the safety regulations set forth in 49 CFR, Chapter III, Subchapter B.

exempt solvent
Specific organic compounds that are not subject to requirements of regulation because they have been deemed by the EPA to be of negligible photochemical reactivity.

exempted aquifer
Underground bodies of water defined in the Underground Injection Control program as aquifers that are sources of drinking water (although they are not being used as such) and that are exempted from regulations barring underground injection activities.

exemption
A temporary or permanent grant, license, or form of legal permission given by an agency to deviate from a regulation or provision of law administered by that agency. Issued in response to a petition for relief submitted by an individual or company.

executive branch of government
That branch of government consisting of the chief executive (i.e., the President), and those offices and positions held under its control.
executive privilege
This privilege, based on constitutional doctrine of separation of powers, exempts the executive from disclosure requirements applicable to the ordinary citizen or organization where such exemption is necessary to the discharge of highly important executive responsibilities involved in maintaining governmental operations, and extends not only to military and diplomatic secrets but also to documents integral to an appropriate exercise of the executive's domestic decision and policy making functions, that is, those documents reflecting the frank expression necessary in intragovernmental advisory and deliberative communications.

exemplary damages
Damages on an increased scale, awarded to the plaintiff over and above what will barely compensate for his/her property loss, where the wrong done to him/her was aggravated by circumstances of violence, oppression, malice, fraud, or wanton and wicked conduct on the part of the defendant, and are intended to solace the plaintiff for mental anguish, laceration of his/her feelings, shame, degradation, or other aggravations of the original wrong, or else to punish the defendant for his/her evil behavior or to make an example of him/her, for which reason they are also called punitive or punitive damages or vindictive damages. Unlike compensatory or actual damages, exemplary or punitive damages are based upon an entirely different public policy consideration: that of punishing the defendant or of setting an example for similar wrongdoers. In cases in which it is proved that a defendant has acted willfully, maliciously, or fraudulently, a plaintiff may be awarded exemplary damages in addition to compensatory or actual damages.

exemption
Freedom from a general duty or service; immunity from a general burden, tax, or charge.

exercise
The use of muscular exertion to maintain conditioning, train for an athletic event, or in an attempt to maintain health.

exercise physiology
The study of the metabolic activities and changes ongoing during exercise, including the aerobic and anaerobic mechanisms, and respiratory, neuromuscular, and cardiovascular mechanisms.

exfiltration
The flow of air from inside a building to the outside due to the existence of negative pressure outside the building surface.

exfoliation
The peeling or flaking off of the skin.

exhalation
(1) The expulsion of air or other vapor from the lungs. (2) Escape in the form of vapor. (3) Vapor escaping from a body or substance.

exhaust air
That air rejected to the outside from a ventilation system.

exhaust grill
Fixture in the wall, floor, or ceiling through which air is exhausted from a space.

exhaust hood
A structure to enclose or partially enclose a contaminant-producing operation or process, or to guide air flow in an advantageous manner to capture a contaminant and is connected to a duct/pipe or channel for removing the contaminant from the hood.

exhaust rate
The volumetric flow rate at which air is removed by a ventilation system.

exhaust system
(1) The combination of components which provides for the enclosed flow of exhaust gas from the engine exhaust port to the atmosphere. (2) Any constituent components of the combination that conducts exhaust gases and which are sold as separate products. (3) A system for removing contaminated air from a space, comprising one or more of the elements including an exhaust hood, duct work, air-cleaning equipment, exhauster, and stack.

exhaust ventilation
Mechanical removal of air from a portion of a building (e.g., piece of equipment, room or general area).

exhausting work
That level of work activity which has a gross metabolic cost of over 380 calories per square meter of skin surface per hour in young men.

exhaustion of administrative remedies
A legal doctrine stipulating the need for a party to pursue all available, possibly fruitful
appeals within an agency before challenging that agency in court.

existing source
Under the Clean Air Act, any stationary source other than a new source.

exit
That portion of a means of egress which is separated from all other spaces of the building or structure by construction or equipment to provide a protected way of travel to the exit discharge. See also means of egress and exit discharge.

exit access
That portion of a means of egress which leads to an entrance to an exit. See also means of egress.

exit discharge
That portion of a means of egress between the termination of an exit and a public way. See also means of egress.

exogenous
Derived or developed from external causes.

exophoria
A condition in which the eyes tend to turn outward, preventing binocular vision.

exoskeleton
An external hard framework that supports and protects the soft tissues of lower animals, derived from the ectoderm. In vertebrates, the term is sometimes applied to structures produced by the epidermis, as hair, nails, hoofs, teeth, etc.

exosphere
The outermost portion of the atmosphere.

exothermic
When applied to reactions, describes those that produce substances that have less energy than the reaction materials resulting in a release of energy as heat.

exotoxin
A microbial toxin (i.e., a toxin excreted by a microorganism into a surrounding medium).

expandable
Flatbed trailer which can be expanded beyond its regular length to carry larger shipments.

expect altitude at time or fix
Air traffic control terminology. Used under certain conditions to provide a pilot with an altitude to be used in the event of two-way communications failure. It also provides altitude information to assist the pilot in planning.

expect further clearance
Air traffic control terminology. Used to inform a pilot of the routing he can expect if any part of the route beyond a short range clearance limit differs from that filed.

expectancy damages
As awarded in actions for nonperformance of contract, such damages are calculable by subtracting the injured party's actual dollar position as a result of the breach from that party's projected dollar position had performance occurred. The goal is to ascertain the dollar amount necessary to ensure that the aggrieved party's position after the award will be the same (to the extent money can achieve this identity as if the other party had performed as expected).

expectation
A mental set in which an individual anticipates a certain outcome in a given situation.

expected attainment
See fair day's work.

expected departure clearance time (EDCT)
Air traffic control terminology. The runway release time assigned to an aircraft in a controlled departure time program and shown on the flight progress strip as an EDCT.

expected work pace
The rate of work output required to achieve a certain level of earnings or production standards.

expectorate
To cough up and eject from the mouth by spitting.

expedite
Used by Air Traffic Control (ATC) when prompt compliance is required to avoid the development of an imminent situation.

expenditure
All amounts of money paid out by a government, net of recoveries and other correcting transactions, other than retirement of debt, investment in securities, extension of credit, or agency transactions. Federal expenditures are also referred to as outlays.
expenditures
Funds spent for energy purchased and paid for or delivered to a manufacturer during a calendar year. The expenditure dollar includes state and local taxes and delivery charges.

experience
The verifiable, objective history of one's work performance.

experience curve
A graphical plot of a worker's performance over time, especially in the learning phase of a job.

experience rating
A method for adjusting workers' compensation rates using a three-year history of the employer's claim experience. See also merit rating (2).

experimental aircraft
An aircraft which does not have a type design or does not meet other certification standards. The "experimental" designation is one of several "Special Airworthiness Certificates" which allows the aircraft to operate in U.S. airspace. None may be used for commercial purposes. Experimental aircraft are divided into three groups: a) Amateur Built: an aircraft, built by one or more persons who undertake the effort for the purpose of recreation and education; d) Exhibition: a unique (one-of-a-kind) aircraft, a replica, a foreign or U.S. military surplus aircraft which may be used for exhibition purposes, movie and television productions, or sanctioned, organized events where the unique or unusual characteristics of the aircraft can be displayed; c) Other: includes experimental aircraft that are not amateur or exhibition. This includes aircraft involved in research and development, crew training, market surveys, air racing, those used to show compliance with regulations, and the like.

experimental variable
See independent variable and dependent variable.

experimenter
One who designs, supervises, and/or conducts research.

experimenter error
Any error resulting from an experimenter's inappropriate action or inaction, regardless of its nature.

expert
An individual who (a) possesses certain knowledge, wisdom, and/or skills in a particular subject not likely to be possessed by ordinary persons, (b) acquired such knowledge, wisdom, and/or skills by study, investigation, and/or experience, (c) is capable of reasoning, inference, and drawing conclusions based on hypothetical facts relating to that subject, and (d) can offer reasonable opinions regarding one or more situations dealing with that particular subject.

expert evidence
Any testimony given by an expert witness based on objective data or information, or information derived directly from such objective data or information. See also expert testimony.

expert opinion
A statement of belief by an expert witness, based on a given situation.

expert system
A decision-making job aid, generally developed in consultation with experts in a given field and which typically contains a computer-based model and database generated from that human expertise.

expert testimony
The opinion of a person skilled in a particular art, science, or profession, having demonstrated special knowledge through experience and education, beyond that which is normally considered common for that art, science, or profession. See also expert, expert evidence, and expert witness.

expert witness
(1) General. A witness qualified as a subject expert based upon their knowledge, skill, experience, training, or education. Unlike other witnesses, an expert's testimony may be in the form of an opinion. See also expert testimony. (2) Law. One who by reason of education or specialized experience possesses superior knowledge with respect to a subject about which persons having no particular training are incapable of forming an accurate opinion or deducing correct conclusions.

expiration
(1) Exhaling of the lungs caused by the relaxation of the diaphragm and rib muscles which causes decreased chest cavity space,
thus forcing air out through the trachea. (2) Cessation; termination from mere lapse of time, as the expiration date of a lease, insurance policy, statute, and the like. Coming to a close; termination or end.

**expiratory flow rate**
The maximum rate at which air can be expelled from the lungs.

**expiratory reserve volume (ERV)**
The maximum amount of air that can be forcibly expired after a normal expiration.

**exploration**
Under the Federal Antarctic Protection Act of 1990: Any activity, including logistic support, the purpose of which is the identification or evaluation of specific mineral resource deposits. The term includes exploratory drilling, dredging, and other surface or sub-surface excavations required to determine the nature and size of mineral resource deposits and the feasibility of their development.

**explosimeter**
A device for detecting the presence of, and measuring the concentration of, gases or vapors that can reach explosive concentrations.

**explosion**
A rapid build-up and release of pressure caused by chemical reaction or by an overpressurization within a confined space leading to a massive rupture of the pressurized container.

**explosion/detonation**
*Railroad Operations.* An accident/incident caused by the detonation of material carried by or transported by rail. A detonation occurs when a shock wave exceeds the speed of sound. Explosions/detonations resulting from mishaps during loading or unloading operations, and those caused by fire aboard on-track equipment are included in this definition.

**explosion-proof**
The design of a device or equipment to eliminate the possibility of its igniting volatile materials. A type of construction that is designed to contain an explosion and prevent its propagation to the atmosphere outside the device/equipment.

**explosion-proof apparatus**
An apparatus enclosed in a case that is capable of withstanding an explosion of a specified gas or vapor which may occur within it and of preventing the ignition of a specified gas or vapor surrounding the enclosure by sparks, flashes, or explosion of the gas or vapor within, and which operates at such external temperature that it will not ignite a surrounding flammable atmosphere.

**explosive**
Any chemical compound, mixture, or device, the primary or common purpose of which is to function by explosion (i.e., with substantially instantaneous release of gas and heat), unless such compound, mixture, or device is otherwise specifically classified by a governing authority, such as the U.S. Department of Transportation (DOT). The term "explosive" shall include all material which is classified as Class A, Class B, and Class C by the DOT and includes, but is not limited to, dynamite, black powder, pellet powders, initiating explosives, blasting caps, electric blasting caps, safety fuse, fuse lighters, fuse igniters, squibs, cordeau detonate fuse, instantaneous fuse, ignitor cord, ignitors, small arms ammunition, small arms ammunition primers, smokeless propellant, cartridges for propellant-actuated power devices, and cartridges for industrial guns. Commercial explosives are those explosives which are intended to be used in commercial industrial operations.

**explosive-actuated power devices**
Any tool or special mechanized but not including propellant-actuated power devices. Examples of explosive-actuated power devices are jet tappers and jet perforators.

**explosive atmosphere**
An atmosphere containing a mixture of vapors or gases which is within the explosive or flammable range. Also referred to as an explosive mixture.

**explosive decompression**
A rapid and significant decrease in barometric pressure.

**explosive limit**
See lower flammable limit and upper flammable limit. Also referred to as explosive limit.
explosive mixture

See explosive atmosphere.

explosive quantity distance site plan

A formal plan for explosives facilities and areas detailing the quantity of explosives, operating and storage limits and restrictions, and resultant distance clearance requirements.

explosive range

See flammability range.

explosive strength

That force expended in a very short burst of intense muscular activity.

explosive train

See explosive transfer assembly.

explosive transfer assembly (ETA)

An arrangement of explosive or combustible elements used to perform or transfer energy to an end function. Also referred to as explosive train.

exponent

A number conventionally placed to the right and above a base number, representing the power to which the base number is raised for evaluation.

exponential decay

As pertains to ionizing radiation, a mathematical expression describing the rate at which radioactive materials decay.

exponential distribution

A distribution having the probability distribution function of

\[ f(x) = ae^{-ax} \]

where:

\[ a = \frac{1}{\text{mean}}, \text{ and } a > 0 \text{ for } x > 0 \]

\[ f(x) = 0 \text{ for } x \leq 0 \]

export license

A government document permitting designated goods to be shipped out of the country as specified.

exports

(1) Outbound international freight, including re-export of foreign merchandise. (2) Shipments of goods from the 50 States and the District of Columbia to foreign countries and to Puerto Rico, the Virgin Islands, and other U.S. possessions and territories.

exposed

(1) General. Having come into close contact with something that may cause adverse physical or mental effects. (2) Wiring Methods. Where the circuit is in such a position that in case of failure of supports or insulation, contact with another circuit may result. Also, wires installed on or attached to the surface or behind panels designed to allow access.

exposed pipeline

A pipeline where the top of the pipe is protruding above the seabed in water less than 15 feet deep, as measured from the mean low water.

exposure

(1) General. a) A measure representing some combination of the amount of time an individual or object has been located in some environment and the severity of that environment. b) The amount of radiation or pollutant present in an environment which represents a potential health threat to the living organisms in that environment; the amount of biological, physical, or chemical agent that reaches a target population. c) The proximity to a condition that may produce injury or damage. (2) Physiology. Contact of an organism with a chemical, biological, or physical agent. Exposure is quantified as the amount of the agent available at the exchange boundaries of the organism (skin, lungs, etc.) and available for absorption; also, the route by which an organism comes in contact with a toxicant (inhalation, ingestion, dermal absorption, injection).

exposure assessment

(1) The defining of exposure pathways and the calculation of the potential magnitude of exposure. (2) The determination or estimation (qualitative or quantitative) of the magnitude, frequency, duration, and route of exposure. (3) Estimation of the amount of chemicals that may be ingested, inhaled, or absorbed through the skin by people living, working, or recreating in areas where air, water, soil, etc. may be contaminated.

exposure dose

A measure of the x-radiation or gamma radiation at a certain place, based upon the ability of the radiation to produce ionization. The unit of measure is the roentgen (R).
exposure dose rate
The radiation exposure dose per unit time expressed as R/unit time.

exposure event
An incident of contact with a chemical or physical agent. An exposure event can be defined by time (e.g., day, hour) or by the incident (e.g., eating a single meal of contaminated fish).

exposure hours
See employee hours.

exposure limit
A somewhat outdated term for the maximum vibration acceleration as a function of frequency and duration.

exposure pathway
The course a chemical or physical agent takes from the source to the exposed organism. An exposure pathway describes a unique mechanism by which an individual or population is exposed to chemicals or physical agents at or originating from the site. Each exposure pathway includes a source or release from a source, an exposure point, and an exposure route. If the exposure point differs from the source, a transport/exposure medium (e.g., air) or media (in cases of intermedia transfer) also is included.

exposure point
A point of potential contact between an organism and a chemical or physical agent.

exposure point concentration
The concentration of a chemical at the exposure point.

exposure route
The way a chemical or physical agent comes in contact with an organism (i.e., by ingestion, inhalation, injection, or dermal contact).

express body
Open box truck body.

express bus
A bus that operates a portion of the route without stops or with a limited number of stops.

expressway
A divided highway for through traffic with full or partial access control and including grade separations at all or most major intersections.

extend
Move adjacent body segments connected by a common joint such that the angle between the segments increases in the direction opposite to that of maximum flexion.

extended duty hours
See extended work hours.

extended functional reach
See thumb-tip reach, extended.

extended hours
See extended work hours.

extended over-water operations
(1) With respect to aircraft other than helicopters, an operation over water at a horizontal distance of more than 50 nautical miles from the nearest shoreline. (2) With respect to helicopters, an operation over water at a horizontal distance of more than 50 nautical miles from the nearest shoreline and more than 50 nautical miles from an off-shore heliport structure.

extended source
Any energy source whose dimensions are significant relative to the distance between the source and the point of observation. (Note: "significant" usually refers to greater than about 10' of arc for visual work).

extended work hours
That working time beyond the normal workday hours. Also referred to as extended duty hours or extended hours.

extension ladder
A non-self-supporting portable ladder adjustable in length. It consists of two or more sections traveling in guides or brackets so arranged as to permit length adjustment. Its size is designated by the sum of the lengths of the section measured along the side rails.

extension trestle ladder
A self-supporting portable ladder, adjustable in length, consisting of a trestle ladder base and a vertically adjustable single ladder, with suitable means for locking the ladders together. The size is designated by the length of the trestle ladder base.

extensor
Any muscle whose contraction normally causes joint extension.
**extensor retinaculum**
A membranous band of fibers in the posterior hand/wrist which forms the carpal tunnel through which the finger extensor tendons pass. Also referred to as *transverse dorsal ligament*.

**extent flexibility**
The ability to twist, stretch, bend, or reach out with one or more parts of the body on a one-time basis.

**external**
Beyond the outer or surface portion of the body or a body segment.

**external auditory canal**
The tubular structure leading from the external environment to the tympanic membrane. Also referred to as the *external auditory meatus*.

**external auditory meatus**
See *external auditory canal*.

**external canthus**
See *ectocanthus*.

**external combustion engine**
An engine in which fuel combustion takes place outside the cylinder, turbine, or the like and in which energy is turned into mechanical force; for example, a steam engine.

**external ear**
The visible, most lateral aspects of the ear, including the auricle, external auditory canal, and the tympanic membrane. Sometimes referred to as the *outer ear*.

**external element**
Any work element in a progress or operation which is performed by the operator outside the machine- or process-controlled time. See also *external work*.

**external load**
_Aviation._ A load that is carried, or extends, outside of the aircraft fuselage.

**external load attaching**
The structural components used to attach an external load to an aircraft, including externally loaded containers, the backup structure at the attachment points, and any quick-release device used to jettison the external load.

**external mechanical environment**
The manmade physical environment, consisting of tools, equipment, etc.

**external naris**
The entrance from the exterior to the air passageway of the nose. Also referred to more commonly as *nostril*.

**external occipital protuberance**
See *inion*.

**external pacing**
Pertaining to externally paced work.

**external radiation**
Ionizing radiation in which the source is located outside the body and the radiation penetrates into deeper tissues.

**external time**
That amount of time required to perform manual work elements when a machine is not in operation.

**external viewing**
Having the capability for seeing outside a vehicle, either to view the vehicle itself or the surrounding environment.

**external work**
Any work element or combination of work elements in a process or operation which is performed by the operator outside the machine- or process-controlled time. Also referred to as *outside work*. See also *external element*.

**externally operable**
Capable of being operated without exposing the operator to contact with live parts.

**externally paced element**
A work element whose completion is beyond a worker's control. Also referred to as *restricted element*.

**externally paced work**
Any manual or human/machine work in which the work pace and/or output is at least in part beyond a worker's control. Also called *restricted work*.

**exteroceptor**
Any sensory receptor at the body surface which receives information about the external environment.
extinguisher classification
The letter classification given an extinguisher to designate the class or classes of fire on which an extinguisher will be effective.

extinguisher rating
The numerical rating given to an extinguisher which indicates the extinguishing potential of the unit based on standardized tests developed by Underwriters' Laboratories, Inc.

extinguishing agent
Any substance capable of performing a fire extinguishing function.

extortion
A rotation of one or both eyes about their vertical axes away from the midline (opposite of intorsion).

extortion
The obtaining of property from another induced by wrongful use of actual or threatened forces, violence, or fear, or under control of an official right. A person is guilty of theft by extortion if he/she purposely obtains property of another by threatening to: a) inflict bodily injury on anyone or commit any other criminal offense; or, b) accuse anyone of a criminal offense; or c) expose any secret tending to subject any person to hatred, contempt, ridicule, or to impair his/her credit or business repute; or d) take or withhold action as an official, or cause an official to take or withhold action; or e) bring about or continue to strike, boycott, or other collective unofficial action, if the property is not demanded or received for the benefit of the group in whose interest the actor purports to act; or f) testify or provide information or withhold testimony or information with respect to another person's legal claim or defense; or g) inflict any other harm which would not benefit the actor. See also blackmail.

extra allowance
That additional time allowed for the completion of work which is not specified in the standard allowance.

extracanthic diameter
The horizontal linear distance between endocanthus and ectocanthus of one eye.

extracellular water (ECW)
That bodily water external to the cells. See also total body water.

extrafusal fiber
The contractile fiber of muscle tissue which is capable of generating motion or tension. See also intrafusal fiber.

extraocular muscle
Any of the six voluntary muscles which are capable of positioning the eyeball within the orbit.

extraordinary flood
A flood whose unexplained occurrence is not foreshadowed by the usual course of nature, and whose magnitude and destructiveness could not have been anticipated or provided against by the exercise of ordinary foresight. One such unusual occurrence is that it could not have been foreseen by men of ordinary experience and prudence.

extraordinary grand jury
Such a jury is limited in the scope of its investigation and may not go beyond terms of executive proclamation, and examination of witness must be confined within those terms, and must not be used as a means of disclosing or intermeddling with extraneous matters.

extraordinary hazards
One not commonly associated with a job or undertaking. If hazards are increased by what other employees do, and an injured employee has no part in increasing them, they are considered to be "extraordinary."

extraordinary items income (loss)
Income or loss which can be characterized as material, unusual, and of infrequent occurrence.

extraordinary nuclear occurrence
Under the Federal Atomic Energy Act of 1954: Any event causing a discharge or dispersal of source, special nuclear, or byproduct material from its intended place of confinement in amounts off site, or causing radiation levels off site, which the Nuclear Regulatory Commission or the Secretary of Energy, as appropriate, determines to be substantial, and which the Nuclear Regulatory Commission or the Secretary of Energy, as appropriate, determines has resulted or will probably result in substantial damages to persons off site or property off site. Any determination by the Nuclear Regulatory Commission or the Secretary of Energy, as appropriate, that such an event has, or has not, occurred shall be final
and conclusive, and no other official or any court shall have power or jurisdiction to review any such determination. The Nuclear Regulatory Commission or the Secretary of Energy, as appropriate, shall establish criteria in writing setting forth the basis upon which such determination shall be made.

**extraordinary risk**
A risk lying outside of the sphere of the normal, arising out of conditions not usual in the business. It is one which is not normally and necessarily incident to the employment, and is one which may be obviated by the exercise of reasonable care by the employer.

**extrapolate**
To estimate a value beyond current knowledge by using known current values and a predictor.

**extrapolation**
Using known data to predict or estimate unknown outcomes. A calculation, based on limited data from natural or experimental observation of humans or other organisms exposed to a substance, that aims to estimate the dose-effect relationship outside the range of the available data.

**extrapyramidal system**
A collection of subcortical neural structures involved in skeletal muscle activities which generally have more central integration, are slower than and supportive of pyramidal system motor function, and have involvement with postural motions.

**extrasystole**
A premature heartbeat.

**extratropical cyclone**
A cyclonic storm that most often forms along a front in middle and high latitudes. It is not a tropical storm or hurricane.

**extravehicular activity (EVA)**
That activity outside a support or transport vehicle, especially referring to space flight which requires a space suit.

**extravehicular mobility unit (EMU)**
An enclosed and self-contained clothing set for protecting the occupant outside a protective vehicle in a hazardous environment.

**extreme value projection**
In system safety, a risk projection technique used to provide information about potential losses (i.e., in the future) that are more severe than those occurring in the past.

**extremely hazardous substances**
Any of 406 chemicals identified by the EPA on the basis of toxicity, and listed under SARA Title III. The list is subject to revision.

**extremely high frequency (EHF)**
That portion of the electromagnetic spectrum consisting of radiation frequencies between 30 GHz and 300 GHz.

**extremely low frequency (ELF)**
That portion of the electromagnetic spectrum consisting of radiation frequencies below 300 Hz.

**extremely low frequency magnetic field**
A magnetic field with a frequency in the range of 0 to 3000 hertz that results from current flowing in electrical conductors.

**extremity**
Term referring to either an upper limb (arms) or a lower limb (legs).
extrinsic
Pertaining to a structure or mechanism which originates outside the structure on which it acts.

eye
(1) Anatomy. The organ of vision. The total of all structures and tissues enclosing and enclosed within the eyeball. (2) Meteorology. A region in the center of a hurricane (tropical storm) where the winds are light and skies are clear to partly cloudy.

eye blink
A brief closure and re-opening of both eyelids. Also referred to simply as blink.

eye blink rate
The number of occasions within a specified temporal interval that an individual executes an eye blink.

eye dominance
See ocular dominance.

eye height, sitting
The vertical distance from the upper seat surface to endocanthus. Measured with the individual seated erect and looking straight ahead.

eye height, standing
The vertical distance from the floor or other reference surface to endocanthus. Measured with the individual standing erect, looking straight ahead, and his/her weight balanced evenly on both feet.

eye movement
Any active or passive, conscious or unconscious movement of the eyeball relative to the orbit.

eye protector
A device worn by a person or affixed to equipment to deter harmful substances from contact with the human eye. The use of safety glasses, splash goggles, or other protective eye wear that will reduce the potential for eye contact with a hazardous material being used, handled, or processed is required under OSHA 29 CFR 1910.132. Such eyewear must meet or exceed the specification of the American National Standards Institute (ANSI Z-87). Normally, eye protection is provided at no cost to the worker when it is determined that such protection is required in a particular work environment.

eye scan
To scan the visual field by eye movement alone, not allowing or using any head movements.

eye sensitivity curve
See spectral luminous efficiency function.

eye wall
A wall of dense thunderstorms that surrounds the eye of a hurricane.

eyeball
The approximately spherical portion of the eye, including the sclera, cornea, pupil/iris, retina, intraocular fluids, lens, and blood vessels. The cornea is the clear transparent layer on the front of the eyeball. It is a continuation of the sclera (the white of the eye), the tough outer coat that helps protect the delicate mechanism of the eye. The choroid is the middle layer and contains blood vessels. The third layer, the retina, contains rods and cones, which are specialized cells that are sensitive to light. Behind the cornea and in front of the lens is the iris, the circular pigmented band around the pupil. The iris works
much like the diaphragm in a camera, widening or narrowing the pupil to adjust to different light conditions.

eyebrow
The supraorbital ridge with its associated overlying tissues and hairs.

eyecup
A small vessel for the application of cleansing or medical solution to the exposed area of the eyeball.

eyeflush
The process of rinsing fluid over the conjunctiva and anterior eyeball with water or eyewash.

eyeground
The fundus of the eye.

eyelash
A short, curved hair embedded in the free edges of the eyelids, usually in two or three separate rows.

eyelid
A thin, soft, movable structure which overlies the anterior portion of the eyeball, is capable of closure to protect the eyeball from certain stimuli, is lined on its posterior surface by the conjunctiva, and contains various glands, a muscle, and the eyelashes.

eyepiece
The lens or system of lenses of a microscope nearest the eye of the observer when the instrument is in use.

eyestrain
A visuo-motor fatigue resulting from a prolonged period of muscle tension to focus to overcome glare or any other vision-interfering conditions. Also referred to as visual strain.

eyewash
A solution for flushing the eyes.

eyewash fountain
A device used to irrigate and flush the eyes in the event of eye contact with a hazardous substance. Generally speaking, water deluge from the fountain must be capable of providing a continuous flow for a period of not less than 15 minutes.

eyewear
Any type of eye covering, whether for eye protection or for improving vision. See also eye protector.
**F**

A variable obtained from computing the *F* ratio and used in tests of statistical significance.

°F

Degrees Fahrenheit. See Fahrenheit temperature scale.

**F distribution**

That frequency distribution obtained by taking repeated random pairs of independent samples and calculating the *F* ratio.

**F ratio**

The ratio of two chi squares divided by their respective degrees of freedom.

**F test**

The use of an obtained *F* value with the degrees of freedom for each of the mean squares in an *F* distribution to indicate the probability that the samples are from the same population. Also referred to as variance ratio test.

**FAA**

See Federal Aviation Administration. Also, in maritime insurance means "Free of all average," denoting that the insurance is against total loss only.

**fabric filter**

A cloth device that catches dust particles from industrial emissions.

**fabric softener**

Any of a class of cationic amine compounds of substituted fatty acids which act to reduce wrinkling and increase fluffiness while retaining moisture to reduce static electricity/cling. Also called textile softener.

**fabricated evidence**

(1) Evidence manufactured or arranged after the fact, and either wholly false or else warped and discolored by artifice and contrivance with a deceitful intent. To fabricate evidence is to arrange or manufacture circumstances or indicia (after the fact committed) with the purpose of using them as evidence, and of deceitfully making them appear as if accidental or undesigned. (2) To devise falsely or contrive by artifice with the intention to deceive. Such evidence may be wholly forged and artificial, or it may consist of so warping and distorting real facts as to create an erroneous impression in the minds of those who observe them and then presenting such impression as true and genuine.

**fabricated fact**

In the law of evidence, a fact existing only in statement, without any foundation in truth. An actual or genuine fact to which a false appearance has been given by design; a physical object placed in a false connection with another, or with a person on whom it is designed to cast suspicion.

**Fabry's syndrome**

A genetically transmitted disorder characterized by remittent attacks of fever, lightning pains and burning dysesthesia of the extremities, proteinuria and hematuria, and cutaneous lesions.

**face**

(1) The anterior portion of the head, from crinion to menton, and from right otobasion to left otobasion. (2) The surface of anything, especially the front, upper, or outer part or surface. That which particularly offers itself to the view of a spectator. The words of a written paper in their apparent or obvious meaning, as, the face of a note, bill, bond, check, draft, judgment record, or contract. The face of a judgment for which it was rendered exclusive of interest.

**face amount**

The amount of an instrument is that shown by the mere language employed, and excludes any accrued interest.

**face breadth**

See bizygomatic breadth.

**face line**

A line used from head of boat to the tow.

**face shield**

A protective device designed to prevent hazardous materials, dusts, sharp objects, and other materials from contacting the face. A device worn in front of the eyes and a portion of, or all of, the face. It supplements the eye protection afforded by a primary protective device, such as safety glasses.

**face up**

To make-up the towboat to the tow (i.e., maneuver barges into position and secure for towing).
face validity
Having apparently relevant or appropriate measure, statement, or data.

face velocity
The average air velocity in the plane of an opening into an enclosure, such as a hood, through which air moves, usually expressed in feet per minute or meters per second.

face wires
Heavy cables securing boat to tow (i.e., pusher to barge).

facepiece
That part of a respirator which covers the wearer's nose, mouth, and in a full facepiece, the eyes.

facet
A smooth, generally flat surface on a bone.

facial angle
That angle formed by the intersection of a line connecting nasion and gnathion with the Frankfort plane of the head.

facial breadth
See bizygomatic breadth.

facial disfigurement
That which impairs or injures the beauty, symmetry, or appearance of a person. That which renders unsightly, misshapen, or imperfect, or deforms in some manner.

facial hair policy
Respirators are not to be worn when conditions prevent a good facial seal. Such conditions may include the presence of a beard, long sideburns, mustache, or other facial hair growth. A facial hair policy is one which does not permit the presence of facial hair that could prevent a good respirator-to-face seal on personnel who may be required to wear such devices. Some facilities do not permit such facial hair on anyone who comes on the site.

facial height
The vertical linear distance between crinion and menton in the midsagittal plane. Also referred to as facial length. See also facial height, total.

facial height, total
The sellion-menton length. See also facial height.

facial index
The ratio of the facial length to the face breadth.

facial length
See facial height and facial height, total.

facial nerve
A cranial nerve having both motor and sensory aspects, and which is involved in facial expressions, cutaneous sensations, and taste.

facies
The front aspect of the head.

facility
(1) General. Any building, plant, factory, office complex, or other structure where work or other designated activity or activities occur on a regularly scheduled or unscheduled basis. Also, all or any portion of buildings, structures, sites, complexes, equipment, roads, walks, passageways, parking lots, or other real or personal property, including the site where the building, property, structure, or equipment is located. (2) CERCLA. Broadly defined under Superfund to include any structure, installation, equipment, landfill impoundment, storage vessel, vehicle, or any site or area where hazardous substances have been deposited or otherwise have come to be located. (3) OSHA. The buildings, containers, or equipment which contain a process.

Facility Index System (FINDS)
An informational database that provides the EPA with an inventory of almost 500,000 facilities. FINDS contains both facility information and pointers to other sources of information that contain more detailed information about the facility.

facing movement
Rail. The movement of a train over the points of a switch which face in a direction opposite to that in which the train is moving.

facing point lock plunger
Rail. That part of a facing point lock which secures the lock rod to the plunger stand when the switch is locked.

facing point switch
Rail. A switch, the points of which face traffic approaching in the direction for which the track is signaled.
fact
A thing done; an action performed or an incident transpiring; an event or circumstance; an actual occurrence; an actual happening in time or space or an event mental or physical; that which has taken place.

fact question
Those issues in a trial or hearing which concern facts or events and whether such occurred and how they occurred as contrasted with issues and questions of law. Fact questions are for the jury, unless the issues are presented at a bench trial, while law questions are decided by the judge. Fact questions and their findings are generally not appealable though rulings of law are subject to appeal.

factor
(1) A set of related variables as determined by factor analysis. (2) An agent or element that contributes to the production of a result. (3) See variable.

factor analysis
A statistical data treatment in which variable scores are analyzed and rotated to obtain orthogonality and achieve a summary in terms of a minimum number of factors.

factor loading
A calculated measure of the degree of generalization between variables and factors in a factor analysis.

factor of safety
(1) Ultimate. The ratio of the ultimate stress to the maximum calculated stress based on limit loads, as follows:

\[
\text{Ultimate Factor of Safety} = \frac{\text{Ultimate Strength}}{\text{Limit Load Stress}}
\]

(2) Yield. The ratio of the yield stress to the maximum calculated stress based on limit loads, as follows:

\[
\text{Yield Factor of Safety} = \frac{\text{Yield Strength}}{\text{Limit Load Stress}}
\]

factorial design
A type of experimental design in which two or more independent variables are examined as part of the same process to permit the study of both their independent and interaction effects on a dependent variable.

factory acts
Laws enacted for the purpose of regulating the hours of work, and the health and safety conditions.

factory investigative audit
 Maritime. The presence of the Officer in Charge of Marine Inspection (OCMI) and other Coast Guard personnel at a manufacturing facility to gather information and evidence to prove or disprove violations of the statutes, or to investigate potential defects which may present substantial risks of personal injury.

Factory Mutual Association
An industrial fire protection, engineering, and inspection bureau established and maintained by mutual insurance companies. The Factory Mutual laboratories test and list fire protection equipment for approval, assist in the development of standards, and conduct research in fire protection. Approvals by the Factory Mutual Association carry the designation FM.

facts in issue
Those matters of fact on which the plaintiff proceeds by his/her action, and which the defendant controverts in his/her defense. Under civil rule practice in the federal courts, and in most state courts, the facts alleged in the initial complaint are usually quite brief, with the development of additional facts being left to discovery and pretrial conference.

factum probandum
(Latin) In the law of evidence, the fact to be proved; a fact which is at issue, and to which evidence is to be directed.

facultative
Capable of adaptation to different conditions.

facultative anaerobe
Microorganisms that can multiply either in the presence or in the absence of oxygen. They can obtain energy either by respiration or by fermentation and do not require oxygen for biosynthesis.

facultative saprophytes
Organisms which can only survive on dead organic matter.

faculty
(1) A normal power or function, especially of the mind. (2) The teaching staff of an educational institution or organization.
FAF

See final approach fix.

Fahrenheit temperature scale

The scale of temperature in which 212 degrees is the boiling point of water at 760 mm mercury pressure and 32 degrees is the freezing point. Abbreviated °F.

fail

Fault, negligence, or refusal. To fall short; be unsuccessful or deficient. Also, fading health.

fail operational

A design characteristic which allows continued operation of a system or subsystem despite a discrete failure.

fail operational, fail safe

A fail operational design which also remains acceptably safe. See also fail operational and fail safe.

fail passive

A system or component design feature that, under failure conditions, will have no effect on the operation of the overall system.

fail safe

A system or component design feature that, under failure conditions, will permit the failed component or system to revert to a safe mode and not present an unacceptable hazard risk or flow of energy due to the failure condition.

failure

The inability of a component or system to perform its designed function within specified limits.

failure analysis

See failure mode and effect analysis.

failure assessment

The process in which the cause, effect, responsibility, and cost of a failure are determined and reported.

failure condition

As pertains to fault tree analysis (FTA) and/or the Management Oversight and Risk Tree (MORT), the top event, or that primary event subject to a failure analysis through an event tree.

failure management

The planning, decision-making, and policy implementation which attempt to identify and eliminate potential failures or apply corrective policies/procedures after a failure occurrence.

failure mechanism

See fault.

failure mode

The status in which or process during which which a piece of equipment failed.

failure mode and effect analysis (FMEA)

An in-depth analysis of possible failures and their resulting effects related to system function and performance (functional FMEA) or system hardware and components (hardware FMEA).

failure of consideration

As applied to notes, contracts, conveyances, etc., this term does not necessarily mean a want of consideration, but implies that a consideration, originally existing and good, has since become worthless or has ceased to exist or been extinguished, partially or entirely.

failure of proof

Inability or failure to prove the cause of action or defense in its entire scope and meaning.

failure to state cause of action

Failure of the plaintiff to allege sufficient facts in the complaint to maintain action. In other words, even if the plaintiff proved all the facts alleged in the complaint, the facts would not establish a cause of action entitling the plaintiff to recover against the defendant. The motion to dismiss for failure to state a cause of action is sometimes referred to as a) a demurrer or b) a failure to state a claim upon which relief can be granted.

failure to testify

In a criminal trial, defendant is not required to testify and such failure may not be commented on by judge or prosecution because of protection under the Fifth Amendment of the U.S. Constitution.

failure tolerance

The ability of a system to experience one or more failures and still maintain some functional capability.

faint

The temporary loss of consciousness as a result of a reduced supply of blood to the brain. Also referred to as syncope. See also unconsciousness.

fair

(1) Having the qualities of impartiality and honesty; free from prejudice, favoritism, and
self-interest. (2) A gathering of buyers and sellers for the purpose of exhibiting and sale of goods; usually accompanied by amusements, contests, entertainment, and the like.

**fair and impartial jury**
Jury chosen to hear evidence and render verdict without any prior fixed opinion concerning the guilt, innocence, or liability of defendant. Means that every member of the jury must be a fair and impartial juror.

**fair and impartial trial**
A hearing by an impartial and disinterested tribunal; a proceeding which hears before it condemns, which proceeds upon inquiry, and renders judgment only after consideration of evidence and facts as a whole. A basic constitutional guarantee contained implicitly in the Due Process Clause of the Fourteenth Amendment of the U.S. Constitution.

**fair comment**
A form of qualified privilege applied to news media publications relating to discussion of matters which are of legitimate concern to the community as a whole, because they materially affect the interests of all the community.

**fair day's work**
A concept of the amount of daily work output expected by management from qualified employee(s), assuming no processing limitations. Also referred to as expected attainment.

**Fair Labor Standards Act (FLSA)**
A comprehensive federal employment regulation providing employer requirements such as equal pay, overtime, minimum wage, employment of minors, and recordkeeping. Sometimes referred to as Wage and Hour Law.

**fair market value**
*Automotive Industry.* The value of a vehicle as stated by the National Automotive Dealers Association (NADA) or other sale publication. For vehicles under the 3-year replacement cycle, fair market value is the average loan indicated in the appropriate NADA publication.

**fair preponderance of evidence**
Evidence sufficient to create in the minds of the triers of fact the conviction that the party upon whom is the burden of proof has established its case. The greater and weightier the evidence, the more convincing the evidence.

This term is not a technical term, but simply means that the evidence outweighs that which is offered to oppose it, and does not necessarily mean the greater number of witnesses.

**fair representation**
Refers to the duty of a union to represent fairly all its members, both in the conduct of collective bargaining and in the enforcement of the resulting agreement, and to serve the interests of all members without hostility or discrimination toward any and to exercise its discretion with complete good faith and honesty and to avoid arbitrary conduct.

**fairly close**
*Maritime.* As close to the shore, dike, or light as practicable (approximately 150 feet off).

**FAK**
See freight all kinds.

**fall streaks**
Falling ice crystals that evaporate before reaching the ground. They appear as streaks of grayish blue in the sky. See also virga.

**fall time**
The time interval between an initial response in an instrument and a specified percent decrease (e.g., 90%) after a decrease in the inlet concentration.

**fall wind**
A strong, cold wind that blows downslope off snow-covered plateaus.

**fallen skier**
*Coast Guard.* A person who has fallen off their water skies.

**falling river**
The river condition when gauge readings are decreasing day by day.

**Fallot's tetralogy**
A combination of congenital cardiac defects, namely, pulmonary stenosis, ventricular septal defects, dextroposition of the aorta, so that such combination overrides the interventricular septum and receives venous as well as arterial blood, and right ventricular hypertrophy.

**fallout**
Radioactive debris from a nuclear detonation which becomes airborne, or has deposited on the earth. It is the dust and other particulate material which contain radioactive fission products from a nuclear explosion.
false alarm
An indication of a problem when no operational problem exists other than in the sensing mechanism. See also type I error.

false chokes
A choking sensation or cough due to breathing 100% oxygen for an extended period of time, which results in dry lung tissues.

false statement
Statement knowingly false, or made recklessly without honest belief in its truth, and with purpose to mislead or deceive. The federal criminal stature governing false statements applies to three distinct offenses: falsifying, concealing, or covering up a material fact by any trick, scheme, or device; making false, fictitious, or fraudulent false documents or writing.

falsifying a record
It is a crime, under state and federal statutes, for a person, knowing that he/she has no privilege to do so, to falsify or otherwise tamper with public records with the purpose of deceiving or injuring anyone or concealing any wrongdoing.

falx
A sickle-shaped structure.

fan
A mechanical device which physically moves air and creates static pressure.

fan, airfoil
A type of backward inclined blade fan with blades that have an airfoil cross-section.

fan, axial
A fan in which airflow is parallel to the fan shaft and air movement is induced by a screw-like action of the fan blade.

fan, backward inclined blade
A centrifugal fan with blades inclined opposite to fan rotation.

fan, centrifugal
A fan in which the air leaves the fan in a direction perpendicular to the direction of entry.

fan curve
A curve relating the pressure versus volume flow rate of a given fan at a fixed fan speed (rpm).

fan, forward curved blade
A centrifugal fan with blades inclined in the direction of fan rotation.

fan laws
Statements and equations that describe the relationship between fan volume, pressure, brake horsepower, size, and any other changes made in fan operation. For example, volume varies directly as fan speed and horsepower varies as the cube of the fan speed.

fan, paddle wheel
A centrifugal fan with radial blades.

fan, propeller
An axial fan employing a propeller to move air.

fan, radial blade
A centrifugal fan with radial blades extending out radially from the fan wheel shaft.

fan rating table
Tables published by fan manufacturers presenting the range of capacities of a particular fan model along with the static pressure developed and the fan speed within the limits of the fan's construction.

fan, squirrel cage
A centrifugal blower with forward curved blades.

fan static pressure
The static pressure added to that of the ventilation system due to the presence of the fan. It equals the sum of pressure losses in the system minus the velocity pressure in the air at the fan inlet.

fan, tube axial
An axial fan mounted in a duct section.

fan, vane axial
An axial flow fan mounted in a duct section with vanes to straighten the airflow and increase static pressure.

FAP
See final approach point.

FAR
See Federal Aviation Regulation.

far field
In acoustics, the uniform sound field which is free and undisturbed by bounding surfaces and other sources of sound and in which the sound pressure level obeys the inverse-square law.
law relationship and decreases 6 dB for each doubling of distance from the source. Also referred to as a free sound field.

far infrared
That portion of the infrared radiation spectrum with wavelengths ranging from about 5000 nm to 1 mm. Also referred to as long wavelength infrared.

far ultraviolet
That portion of the ultraviolet radiation spectrum consisting of wavelengths from about 100 to 200 nm.

far vision
The ability to see the distant physical environment.

farad (F)
A unit of capacitance; that amount of capacitance between two conductors separated by a dielectric with a potential difference of one volt and charged by one coulomb.

dare
The required payment for a ride on a public transportation vehicle. It may be paid by any acceptable means, for example, cash, token, ticket, transfer, fare card, voucher, or pass or user fee.

fare evasion
The unlawful use of transit facilities by riding without paying the applicable fare.

fare recovery ratio
The ratio of fare revenue to operating expenses.

farm-to-market agricultural transportation
The operation of a motor vehicle controlled and operated by a farmer who: a) is a private motor carrier of property; b) is using the vehicle to transport agricultural products from a farm owned by the farmer, or to transport farm machinery or farm supplies to or from a farm owned by the farmer; and c) is not using the vehicle to transport hazardous materials of a type or quantity that requires the vehicle to be placarded in accordance with 49 CFR 177.823.

farm vehicle driver
A person who drives only a motor vehicle that is a) controlled and operated by a farmer as a private motor carrier of property; b) being used to transport either agricultural products, or farm machinery, farm supplies, or both, to or from a farm; c) not being used in the operation of a for-hire motor carrier; c) not carrying hazardous materials of a type or quantity that requires the vehicle to be placarded in accordance with 49 CFR 177.823, and d) being used within 150 air-miles of the farmer’s farm.

farmer's lung disease
A syndrome that consists initially of chills and fever, followed by impairment of lung function. It is normally caused by chronic exposure to moldy hay or other moldy organic material. It is also known as thresher’s lung.

farmer's skin
See sailor's skin.

farsightedness
See hyperopia.

FAS
See free alongside ship.

fast file
Aviation. A system whereby a pilot files a flight plan via telephone that is tape recorded and then transcribed for transmission to the appropriate air traffic facility. Locations having a fast file capability are contained in the Airport/Facility Directory.

fast meter response
The "fast" response of the sound level meter shall be used. The fast dynamic response shall comply with the meter dynamic characteristics in the American National Standard Institute (ANSI) specification for Sound Level Meters.

fast twitch muscle
See white muscle.

fastenings
With regard to ladders, a device to attach a ladder to a structure, building, or equipment.

fat
(1) The adipose or fatty tissue of the body. (2) An oily substance consisting of glycerin (a form of alcohol called glycerol) and a group of fatty acids, chiefly palmitic, stearic and oleic acids, combined as glycerin esters. Fats consist of carbon, hydrogen, and oxygen in most foods, especially in meats and dairy products. Fats may be solid, such as butter, or liquid such as olive oil.
fat body mass
That portion of the body mass which is due to fat.

fat-free body
A physical/metabolic state in which an individual has only the minimal amount of fat stored in his/her body.

fat-free mass
See lean body mass.

fat-free weight
See lean body weight.

fat patterning
The distribution of subcutaneous fat throughout the body.

fatal accident
(1) General. An accident causing the death of one or more persons in or as a direct result of that accident. (2) National Safety Council. An accident that results in one or more deaths within one year. (3) Transportation. a) A motor vehicle traffic accident resulting in one or more fatal injuries. b) An accident for which at least one fatality was reported. c) Statistics reported to the Federal Highway Administration (FHWA) shall conform to the 30-day rule, i.e., a fatality resulting from a highway vehicular accident is to be counted only if death occurs within 30 days of the accident.

fatal accident rate
Transportation. The fatal accident rate is the number of fatal accidents per 100 million vehicle miles of travel.

fatal alcohol involvement crash
A fatal crash is alcohol related or alcohol involved if either a driver or a non-motorist (usually a pedestrian) had a measurable or estimated blood alcohol concentration (BAC) of 0.01 grams per deciliter (g/dl) or above.

fatal crash
Transport. A police-reported crash involving a motor vehicle in transport on a traffic-way in which at least one person dies within 30 days of the crash.

fatal injury
(1) Law-Insurance. A term embracing injuries resulting in death, which, as used in accident and disability insurance policies is distinguished from "disability," which embraces injuries preventing the insured from performing the work in which he/she is usually employed, but not resulting in death. (2) Any injury which results in death within 7 days of the accident. (3) National Transportation Safety Board. Any injury which results in death within 30 days of the accident.

fatal plus nonfatal injury accidents
The sum of all fatal accidents and nonfatal-injury accidents.

fatality
(1) General. A death due to any cause. (2) American Gas Association. Death resulting from the failure or escape of gas. (3) Highway Transit. Those deaths a) which result from motor vehicle accidents that occurred during the relevant calendar year, and b) those in which the injured person(s) died within 30 days of the accident. Also, a transit-caused death confirmed within 30 days of a transit incident. Also, a death as the result of a crash that involves a motor vehicle in transport on a traffic-way and in which at least one person dies within 30 days of the crash. For purposes of statistical reporting on transportation safety, fatality shall be considered a death due to injuries in a transportation accident or incident that occurs within 30 days of that accident or incident. (4) Rail Operations. The death of a person resulting from an injury incurred during railroad operations or resulting from an occupational illness, if death occurs within 365 days of initial diagnosis. Also, a death confirmed within 30 days after an incident which occurs under the collision, derailment, personal casualty, or fire categories.

fatality/injury
Refers to the average number of fatalities and injuries which occurred per one hundred accidents. Frequently used as an index of accident severity.

fatality rate
Transport. (1) The average number of fatalities which occurred per accident or per one hundred accidents. (2) The fatality rate is the number of fatalities per 100 million vehicle miles of travel.

fatfold
See skinfold.
fatigue
(1) Physiological. The condition of being extremely tired as a result of some physical and/or mental exertion. A state characterized by lack of motivation, interest, and/or an inability to maintain normal, consistent productivity and quality due to recent physical or mental exertion. (2) Structural. The progressive localized permanent structural change that occurs in a material subjected to constant or variable amplitude loads at stresses having a maximum value less than the ultimate strength of the material.

fatigue allowance
That additional time which is added to the normal time to permit a worker to rest.

fatigue-decreased proficiency
A decrease in performance due to prolonged whole-body vibration exposure (an older term).

fatigue-decreased proficiency boundary
Those limits of human whole-body vibration exposure for certain time durations at specified frequencies which are intended to maintain a basic performance level (an older term).

fatigue life
The number of cycles of stress or strain of a specified character that a given material sustains before failure of a specified nature occurs. Also referred to as cycle life.

fauces
The opening between the posterior mouth and the oropharynx.

fault
(1) General. A manifestation of an error. Any condition which may or will cause a system to fail. (2) Seismology. A fracture or zone of fractures along which there has been displacement of the sides relative to one another, parallel to the fracture. (3) Law. Negligence; an error or defect of judgement or of conduct; any deviation from prudence, duty, or rectitude; any shortcoming, or neglect of care or performance resulting from inattention, incapacity, or perversity; a wrong tendency, course, or act; bad faith or mismanagement; neglect of duty.

fault hazard analysis (FHA)
A system safety analysis method, usually an extension of the failure mode and effect analysis, that evaluates the overall effect of functional failures on other subsystems or the overall system itself. Synonymous with functional hazard analysis.

fault of operator
Coast Guard. Speeding; overloading; improper loading, not properly seating occupants of a boat; no longer lookout; carelessness; failure to heed weather warnings; operating in a congested area; not observing the Rules of the Road; unsafe fueling practices; lack of experience; ignorance of aids to navigation; lack of caution in an unfamiliar area of operation; improper installation or maintenance of hull, machinery, or equipment; poor judgment; recklessness; overpowering the boat; panic; proceeding in an unseaworthy craft; operating a motorboat near persons in the water; starting engine with clutch engaged or throttle advanced; irresponsible boat handling such as quick, sharp turns.

fault stand
In seismology, an individual fault of a set of closely spaced parallel or sub-parallel faults of a fault system.

fault tolerance
The built-in ability of a system to provide continued correct operation in the presence of a specified number of faults or failures.

fault tree analysis (FTA)
A system safety analysis technique used as an inductive method (top down, from the known to the unknown) to evaluate fault or failure events in a system or process.

FBI
See Federal Bureau of Investigation.

FBSA

FBT
See full berth terms.

fc
See foot-candle.

FCC
See Federal Communications Commission.

FCDC
Flexible, confined detonating cord.

FCLT
See freeze calculated landing time.
FDA
See Food and Drug Administration.

FDAAL
See Food and Drug Administration Action Level.

feasibility study
(1) OSHA. A study performed by OSHA to determine if a proposed standard is practical for the exposure under consideration as well as from an implementation perspective. (2) EPA. An analysis of the practicability of a proposal; e.g., a description and analysis of the potential cleanup alternatives for a site or alternatives for a site on the National Priorities List. The feasibility study usually recommends selection of a cost-effective alternative. It usually starts in tandem with the Remedial Investigation (RI). Performed together, the process is commonly referred to as the RI/FS. The term can apply to a variety of proposed corrective or regulatory actions.

feasible
A measure that is practical and capable of being accomplished or brought about.

feasor
The doer or maker. Also used in the compound term "tort-feasor," meaning one who commits or is guilty of a tort.

featherbedding
The name given to employee practices which create or spread employment by unnecessarily maintaining or increasing the number of employees used, or the amount of time consumed, to work on a particular job. Most of these practices stem from a desire on the part of employees for job security in the face of technological improvements.

feathered propeller
Aviation. A propeller whose blades have been rotated so that the leading and trailing edges are nearly parallel with the aircraft flight path to stop or minimize drag and engine rotation. Normally used to indicate shutdown of a reciprocating or turboprop engine due to malfunction.

febella
A sesamoid fibrocartilage in the gastrocnemius muscle.

tecal coliform bacteria
Bacteria found in the intestinal tracts of mammals. Their presence in water or sludge is an indicator of pollution and possible contamination by pathogens.

fees
The collective excretions normally passing through the anus, including undigested and unabsorbed food and intestinal secretions.

Fechner's Law
A proposed logarithmic relationship between stimulus intensity and sensory strength, having the form

\[ S = k \log I_s \]

where:
- \( S \) = sensory strength
- \( k \) = constant depending on the units of measurement and modality
- \( I_s \) = stimulus intensity

fecundity
The physiological ability to reproduce.

federal
Belonging to the general government or union of the states. Founded on or organized under the Constitution of the United States. Of or constituting a government in which power is distributed between a central authority (i.e., federal government) and a number of constituent territorial units (i.e., states).

federal agency
Any executive department, military department, government corporation, government-controlled corporation or other establishment in the executive branch of government including the Executive Office of the President or any independent regulatory agency.

federal-aid highways
Those highways eligible for assistance under Title 23 U.S.C. except those functionally classified as local or rural minor collectors.

Federal-Aid Primary Highway System
The Federal-Aid Highway System of rural arterials and their extensions into or through urban areas in existence on June 1, 1991, as described in 23 U.S.C. 103(b) in effect at that time.

Federal Aid Secondary Highway System
This existed prior to the ISTEA [Intermodal Surface Transportation Efficiency Act] of 1991 and included rural collector routes.
Federal Aid Urban Highway System
This existed prior to the ISTEA [Intermodal Surface Transportation Efficiency Act] of 1991 and included urban arterial and collector routes, exclusive of urban extensions of the Federal-Aid Primary system.

Federal Aviation Administration (FAA)
Formerly the Federal Aviation Agency, the Federal Aviation Administration was established by the Federal Aviation Act of 1958 (49 U.S.C. 106) and became a component of the Department of Transportation in 1967 pursuant to the Department of Transportation Act (49 U.S.C. app. 1651 note). The Administration is charged with a) regulating air commerce in ways that best promote its development and safety and fulfill the requirements of national defense; b) controlling the use of navigable airspace of the United States and regulating both civil and military operations in such airspace in the interest of safety and efficiency; c) promoting, encouraging, and developing civil aeronautics; d) consolidating research and development with respect to air navigation facilities; e) installing and operating air navigation facilities; f) developing and operating a common system of air traffic control and navigation for both civil and military aircraft; and g) developing and implementing programs and regulations to control aircraft noise, sonic boom, and other environmental effects of civil aviation.

Federal Aviation Regulations (FAR)
The set of regulatory obligations contained in Title 14 of the Code of Federal Regulations which FAA is charged to enforce in order to promote the safety of civil aviation both domestically and internationally.

Federal Boating Safety Act (FBSA)
Enacted by Congress on 10 August 1971, it gave the Coast Guard the authority to establish comprehensive boating safety programs, authorized the establishment of national construction and performance standards for boats and associated equipment and created a more flexible regulatory authority concerning the use of boats and associated equipment. Amended by the Recreational Boating Safety and Facilities Improvement Act of 1980, also known as The Recreational Boating Fund Act of 1980 (The Biaggi Act) which provided financial assistance, in part through motorboat fuel taxes, for state recreational boating safety programs. Now re-codified as Chapter 43 of Title 46, United States Code.

Federal Bureau of Investigation (FBI)
The FBI (established in 1908) is charged with investigating all violations of federal laws with the exception of those which have been assigned by legislative enactment or otherwise to some other federal agency. The FBI’s jurisdiction includes a wide range of responsibilities in the criminal, civil, and security fields. Among these are espionage, sabotage, and other subversive activities; kidnapping; extortion; bank robbery; interstate transportation of stolen property; civil rights matters; interstate gambling violations; fraud against the Government; and assault or killing the President or a Federal officer. Cooperative services of the FBI for other duly authorized law enforcement agencies include fingerprint identification, laboratory services, police training, and the National Crime Information Center.

Federal Communications Commission (FCC)
The FCC was created by the Communications Act of 1934 to regulate interstate and foreign communications by wire and radio in the public interest. It was assigned additional regulatory jurisdiction under the provisions of the Communications Satellite Act of 1962. The scope of its regulatory powers includes radio and television broadcasting, telephone, telegraph, and cable television operation; two-way radio and radio operators; and satellite communication.

Federal Emergency Management Agency (FEMA)
An independent agency that advises the President on meeting civil emergencies and provides assistance to individuals and public entities that suffered property damage in emergencies and disasters when recommended by the President.
Federal Employees' Compensation Act
Type of workers' compensation plan for federal employees by which payments are made for death or disability sustained in performance of duties of employment.

Federal Employer's Liability Act
Federal workers' compensation law which protects employees of railroads engaged in interstate and foreign commerce. Payments are made for death or disability sustained in performance of duties of employment.

Federal Energy Regulatory Commission (FERC)
The federal agency with jurisdiction over interstate electricity sales, wholesale electric rates, hydroelectric licensing, natural gas pricing, oil pipeline rates, and gas pipeline certification. Federal Energy Regulatory Commission (FERC) is an independent regulatory agency within the Department of Energy and is the successor to the Federal Power Commission.

Federal Facility Compliance Act (FFCA) of 1992
Amendment to the Resource Conservation and Recovery Act (RCRA). Ensures that there is a complete and unambiguous waiver of sovereign immunity with regard to fines and penalties against Federal Facilities. Act allows State environmental agencies and the EPA to impose civil penalties and administrative fines on Federal Facilities under RCRA for violations of federal, state, and local solid and hazardous waste laws.

Federal Highway Administration (FHWA)
Became a component of the Department of Transportation in 1967 pursuant to the Department of Transportation Act (49 U.S.C. app. 1651 note). It administers the highway transportation programs of the Department of Transportation under pertinent legislation and the provisions of law cited in section 6a) of the act (49 U.S.C. 104). The Administration encompasses highway transportation in its broadest scope seeking to coordinate highways with other modes of transportation to achieve the most effective balance of transportation systems and facilities under cohesive federal transportation policies pursuant to the act. The Administration administers the Federal-Aid Highway Program; is responsible for several highway-related safety programs; is authorized to establish and maintain a national network for trucks; administers a coordinated federal lands program; coordinates varied research, development and technology transfer activities; supports and participates in efforts to fund research and technology abroad; plus a few additional programs.

Federal Implementation Plan (FIP)
Implemented by the EPA when a state fails to implement their own plan for the establishment, regulation, and enforcement of air pollution standards.

Federal Maritime Commission
Regulates the waterborne foreign and domestic offshore commerce of the United States, assures that United States international trade is open to all nations on fair and equitable terms, and guards against unauthorized monopoly in the waterborne commerce of the United States. This is accomplished through maintaining surveillance over steamship conferences and common carriers by water; assuring that only the rates on file with the Commission are charged; approving agreements between persons subject to the Shipping Act; guaranteeing equal treatment to shippers and carriers by terminal operators, freight forwards, and other persons subject to the shipping statutes; and ensuring that adequate levels of financial responsibility are maintained for indemnification of passengers or oil spill cleanup.

Federal Mediation and Conciliation Service
The Federal Mediation and Conciliation Service helps prevent disruptions in the flow of interstate commerce caused by disputes between labor and management by providing mediators to assist disputing parties in the resolution of their differences. The Service can intervene on its own motion or by invitation of either side in a dispute. Mediators have no law enforcement authority and rely wholly on persuasive techniques. The Service also helps provide qualified third-party neutrals as fact finders or arbitrators.

Federal Motor Carrier Safety Regulations (FMCSR)
The regulations are contained in the Code of Federal Regulations, Title 49, Chapter III, Subchapter B.
Federal Power Act
Enacted in 1920, amended in 1935, the Act consists of three parts. The first part incorporated the Federal Water Power Act administered by the former Federal Power Commission, whose activities were confined almost entirely to licensing non-Federal hydroelectric projects. Parts II and III were added with the passage of the Public Utility Act. These parts extended the Act's jurisdiction to include regulating the interstate transmission of electrical energy and rates for its sale, at wholesale rates, in interstate commerce. The Federal Energy Regulatory Commission is now charged with the administration of this law.

Federal Rules of Evidence
Rules which govern the admissibility of evidence at trials in the Federal District Courts and before U.S. Magistrates. Many states have adopted Evidence Rules patterned on these federal rules.

Federal Sentencing Guidelines for Organizations (Section 8)
Guidelines that went into effect on November 1, 1991 designed to promote uniformity of sentencing for corporations convicted in federal cases, such as violations of securities or antitrust laws, kickbacks, or bribery. Mitigating factors lessen penalties if an organization has an Effective Compliance Program. Guidelines do not apply to environmental offenses. See also effective compliance program and Environmental Guidelines for Sentencing Organizations.

Federal Standard 595a
A color ordering system developed by the U.S. Government for standardizing colors used by federal agencies according to a 5-digit code and a gloss/luster criterion. See also color ordering system.

Federal Tort Claims Act
The government of the United States may not be sued in tort without its consent. That consent was given in the Federal Tort Claims Act (1946), which largely abrogated the federal government's immunity from tort liability and established the conditions for suits and claims against the federal government. The Act (28 U.S.C.A §§ 1346(b), 2674) preserves governmental immunity with respect to the traditional categories of intentional torts, and with respect to acts or omissions which fall within the "discretionary function or duty" of any federal agency or employee.

Federal Trade Commission
Agency of the federal government created in 1914. The Commission's principal functions are to promote free and fair competition in interstate commerce through the prevention of general trade restraints such as price-fixing agreements, false advertising, boycotts, illegal combinations of competitors and other unfair methods of competition.
Federal Transit Administration (FTA)
Formerly the Urban Mass Transportation Administration, it operates under the authority of the Federal Transit Act, as amended (49 U.S.C. app. 1601 et seq.). The Federal Transit Act was repealed on July 5, 1994, and the Federal transit laws were codified and re-enacted as Chapter 53 of Title 49, United States Code. The Federal Transit Administration was established as a component of the Department of Transportation by section 3 of Reorganization Plan No. 2 of 1968 (5 U.S.C. app.), effective July 1, 1968. The missions of the Administration are a) to assist in the development of improved mass transportation facilities, equipment, techniques, and methods, with the cooperation of mass transportation companies both public and private; b) to encourage the planning and establishment of area-wide urban mass transportation systems needed for economical and desirable urban development, with the cooperation of mass transportation companies both public and private; c) to provide assistance to state and local governments and their instrumentalities in financing such systems, to be operated by public or private mass transportation companies as determined by local needs; and d) to provide financial assistance to state and local governments to help implement national goals relating to mobility for elderly persons, persons with disabilities, and economically disadvantaged persons.

Federal Water Pollution Control Act (FWPCA)
Law passed in 1970 and amended in 1972 giving the Coast Guard a mandate to develop, among other things, marine sanitation device regulations.

fee damages
Damages sustained by and awarded to an abutting owner of real property occasioned by the construction and operation of an elevated railroad in a city street, are so called because compensation is made to the owner for the injury to, or deprivation of, his/her easements of light, air, and access, and these are parts of the fee.

feed
A mechanism which introduces material to a machine for processing.

feedback
The return of meaningful information within a closed-loop system so that system performance can be appropriately modified. Also referred to as knowledge of results.

feedback control system
See closed-loop system.

feedback mechanism
A process whereby an initial change in an atmospheric process will tend to either reinforce the process (positive feedback) or weaken the process (negative feedback).

feeder
All circuit conductors between the service equipment, or the generator switchboard of an isolated plant, and the final mechanical rather than electrical function.

feeder bus
A bus service that picks up and delivers passengers to a rail rapid transit station or express bus stop or terminal.

feeder fix
Aviation. The fix depicted on Instrument Approach Procedure Charts which establishes the starting point of the feeder route.

feeder route
Aviation. A route depicted on instrument approach procedure charts to designate routes for aircraft to proceed from the en route structure to the initial approach fix (IAF).

feeder vessel
A vessel which transfers containers to a "mother ship" for an ocean voyage.

feedlot
A relatively small, confined area for the controlled feeding of animals that tends to concentrate large amounts of animal wastes that cannot be absorbed by the soil and, hence, may be carried to nearby streams or lakes by rainfall runoff.

feedstock energy
Under ISO 14000, the gross combustion heat of raw material inputs, which are not used as energy sources, to a byproduct system.

fellow servant
One who works for and is controlled by the same employer; a co-worker. Employees who derive authority and compensation from the
same employer, and are engaged in the same general business.

fellow servant rule
A common-law doctrine, now generally abrogated by workers' compensation acts and Federal Employers' Liability Act, that in an action for damages brought against an employer by an injured employee the employer may allege that the negligence of another fellow employee was partly or wholly responsible for the accident resulting in the injury, and thus reducing or extinguishing his/her own liability.

felon
A person who commits or has committed a felony.

felony
A crime of a graver or more serious nature than those designated as misdemeanors. For example, an aggravated assault (a felony) is contrasted with simple assault (a misdemeanor). Under many state statutes, any offense punishable by death or imprisonment for a term exceeding one year. The federal and many state criminal codes define felony status crimes, and in turn also have various classes of felonies (e.g., Class A, B, C, etc.) or degrees (e.g., first, second, third) with varying sentences for each class.

Fels index
An estimate for the percentage of body fat and nutritional status of the body.

FERC
See Federal Energy Regulatory Commission.

Feret's diameter
The distance between the extreme boundaries of a particle.

fermentation
The breakdown of organic substance by microorganisms with a resulting release of energy.

ferrel cell
The name given to the middle latitude cell in the 3-cell model for general circulation.

ferruginous bodies
Bodies formed by fibers that have entered the lungs. These bodies can be formed by any kind of durable fiber including asbestos, fiberglass, and vegetable fibers of siliceous origin.

ferry boat
A boat providing fixed-route service across a body of water.

ferry crossing
Route used to transport traffic between two points separated by water.

ferry flight
Aviation. A flight for the purpose of a) returning an aircraft to base, b) delivering an aircraft from one location to another, or c) moving an aircraft to and from a maintenance base. Ferry flights, under certain conditions, may be conducted under terms of a special flight permit.

ferry vessel
A vessel which is limited in its use to the carriage of deck passengers or vehicles or both, operates on a short run on a frequent schedule between two points over the most direct water route, other than in ocean or coastwise service, and is offered as a public service of a type normally attributed to a bridge or tunnel.

ferryboats
Vessels for carrying passengers and/or vehicles over a body of water. The vessels are
generally steam- or diesel-powered conventional ferry vessels. They may also be hovercraft, hydrofoil and other high speed vessels.

**fertility toxin**
A substance which reduces male or female fertility.

**fertilizer**
Materials such as nitrogen and phosphorous that provide nutrients for plants. Commercially sold as fertilizers and may contain other chemicals or may be in the form of processed sewage sludge.

**fetotoxicity**
Harmful effects exhibited by a fetus, due to exposure to a toxic substance, that may result in death, reduced birth weight, or impairment of growth and physiological dysfunction.

**fetotoxin**
A substance which is toxic to the fetus.

**fetus**
Later stage of development in unborn organisms, following the embryonic stage.

**FEV**
Forced expiratory volume.

**FEV-1**
See *forced expiratory volume-one second*.

**fever**
A condition in which the body temperature is above normal.

**FFCA**

**FFDCA**

**FHA**
See *fault hazard analysis*.

**FHWA**
See *Federal Highway Administration*.

**fiber**
(1) *General.* A particle having a length to diameter/width ratio of greater than 3 to 1. (2) *PCM Method.* Particulate at least 5 micrometers in length with an aspect ratio (length to width ratio) of at least 3 to 1. A rod-like structure having a length at least three times its diameter. (3) *EPA-TEM Method.* Structure greater than or equal to 0.5 micrometers in length with an aspect ratio of 5 to 1, or greater, and having substantially parallel sides.

**fiber optics**
A system of flexible quartz or glass fibers with internal reflective surfaces that can transmit light.

*A fiber optic lead*

**fiberglass**
A commercial, nonflammable fiber that is made from spun glass primarily used for insulation. Fibers of this material can penetrate the skin causing dermatitis in some people and, when airborne, can affect the lungs of some people. Fiberglass is resistant to most chemicals and solvents.

**fiberglass (plastic) hull**
Hulls of fiber reinforced plastic. The laminate consists of two basic components, the reinforcing material (glass filaments) and the plastic or resin in which it is embedded.

**fiberscope**
A flexible instrument for direct visual examination of the interior of hollow organs or body cavities, constructed of fibers having special optical properties.
fibrillation
(1) A transitory muscular contraction resulting from spontaneous activation of single muscle cells or fibers. (2) Rapid and uncoordinated contractions of the heart. (3) The quality of being made up of fibers.

fibrinogen
A blood protein which precipitates out to form fibers during the clotting process.

fibroblast
Connective tissue cell.

fibroma
A tumor composed mainly of fibrous or fully developed connective tissue.

fibrosis
The formation and accumulation of fibrous tissue, especially in the lungs. Also the chronic collagenous degeneration of the pulmonary parenchyma.

fibrosis producing dust
A dust which, when inhaled, deposited, and retained in the lungs, can produce fibrotic growth that may result in pulmonary disease.

fibrous
A material which contains fibers.

fibula
The smaller, more lateral bone of the lower leg.

fibular height
The vertical distance from the floor or other reference surface to the superior tip of the fibula. Measured with the individual standing erect and the weight distributed evenly on both feet.

FID
See flame ionization detector.

fidelity
(1) The degree to which a system's input is reflected in its output. (2) The degree of realism in a simulation.

field
(1) That portion of the interlaced display which is represented by every other horizontal scan line. Two fields make a frame on an interlaced video display. (2) A limited area, such as the area of a slide visible through the lens system of a microscope.

field and gathering pipelines
A network of pipelines (mains) transporting natural gas from the individual wells to a compressor station, processing point, or main trunk pipeline.

field area
Energy. A geographic area encompassing two or more pools that have a common gathering and metering system, the reserves of which are reported as a single unit. This concept applies primarily to the Appalachian region. See also pool.

field blank sample
Sampling media, such as a charcoal tube, filter cassette, or other device, which is handled in the field in the same manner as are other sampling media of the same type but through which no air is sampled. These are used in sampling and analysis procedures to determine the contribution to the analytical result from the media plus any contamination which may have occurred during handling in the field, shipping, and storage before analysis. Often referred to as a blank sample.

field-constructed tanks
Vertical cylinders with a capacity of greater than 50,000 gallons.

field duplicate
A sample that is collected concurrently with another sample of the same type, and in the same location for the same duration. It is an extra field sample that helps to ensure quality control.

field of view
The solid angle within the visual field for which the eye or other optical sensor provides useful data.

field sampling plan
Provides guidance for all fieldwork by defining in detail the sampling and data-gathering methods to be used on a project.

field separation facility
A surface installation designed to recover lease condensate from a produced natural gas stream usually originating from more than one lease and managed by the operator of one or more of these leases.

field study
An investigation in which subjects are observed or measured in their natural environments.
FIFRA

Fifteenth Amendment
Amendment to the U.S. Constitution, ratified by the States in 1870, guaranteeing all citizens the right to vote regardless of race, color, or previous condition of servitude. Congress was given the power to enforce such rights by appropriate legislation.

Fifth Amendment
Amendment to the U.S. Constitution providing that no person shall be required to answer for a capital or otherwise infamous offense unless on indictment or presentment of a grand jury in military cases; that no person will suffer double jeopardy; that no person will be compelled to be a witness against himself/herself; that no person shall be deprived of life, liberty, or property without due process of law and that private property will not be taken for public use without just compensation.

fifth wheel
(1) A device mounted on a truck tractor or similar towing vehicle (e.g., converter dolly) which interfaces with and couples to the upper coupler assembly of a semitrailer. (2) Load-supporting plate mounted to frame of vehicle. Pivot mounted, it contains provisions for accepting and holding the kingpin of a semitrailer, providing a flexible connection between the tractor and the trailer.

fighting words doctrine
The First Amendment doctrine that holds that certain utterances are not constitutionally protected as "free speech" if they are inherently likely to provoke a violent response from the audience. Words which by their very utterance inflict injury or tend to incite an immediate breach of the peace, having direct tendency to cause acts of violence by the persons to whom, individually, the remark is addressed. The test is what persons of common intelligence would understand to be words likely to cause an average addressee to fight. Certain racial slurs may fall into this category. The "freedom of speech" protected by the Constitution is not absolute at all times and under all circumstances and there are well-defined and narrowly limited classes of speech, the prevention and punishment of which do not raise any constitutional problems, including the lewd and obscene, the profane, the libelous, and the insulting or "fighting words" which by their very utterance inflict injury or tend to incite an immediate breach of the peace.

figure
Any drawing, graphical display, photograph, or similar entity composed of more than just text in a document.

Filar micrometer
A microscopic attachment used for determining the size of particles.

file
A collection of information or data which is stored as a single unit or within a specified restricted location (can be electronic, paper, or other type of media).

File Transfer Protocol (FTP)
A type of Internet site for file downloads.

filed
Aviation. Normally used in conjunction with flight plans, meaning a flight plan has been submitted to Air Traffic Control.

filed en route delay
Aviation. Any of the following preplanned delays at points/areas along the route of flight which require special flight plan filing and handling techniques: a) Terminal Area Delay. A delay within a terminal area for touch and go, low approach, or other terminal area activity. b) Special Use Airspace Delay. A delay within a Military Operating Area, Restricted Area, Warning Area, or Air Traffic Control (ATC) Assigned Airspace. c) Aerial Refueling Delay. A delay within an Aerial Refueling Track or Anchor.

fill material
Any material used for the primary purpose of replacing an aquatic area with dry land or of changing the bottom elevation of a body of water.

fill up work
See internal work.

filling
Depositing dirt and mud or other materials into aquatic areas to create more dry land, usually for agriculture or commercial devel-
Such activities often damage the ecology of the area.

**film**
(1) A thin layer or coating. (2) A thin sheet of material (e.g., gelatin, cellulose acetate) specially treated for use in photography or radiography; also used to designate the sheet after exposure to the energy to which it is sensitive.

**film analysis**
A systematic frame-by-frame study of an activity from motion picture film.

**film analysis chart**
See film analysis record.

**film analysis record**
A record generated from a film analysis, containing sequential elemental motions or operations, the beginning and ending clock times, and some type of descriptive symbol. Also referred to as film analysis chart.

**film badge**
A pack of photographic film used for approximate measurement of radiation exposure for personnel monitoring purposes. Also called a film dosimeter.

**film dosimeter**
See film badge.

**film loop analysis**
A film analysis with a cut and spliced segment of film to form a contiguous loop for repeated viewing. See also cassette loop analysis.

**film ring**
A film ring badge in the form of a finger ring that is typically worn by personnel whose hands may be exposed to ionizing radiation during use of a radiation source, (e.g., operation of an x-ray diffraction unit).

**filter**
(1) General. Any device which removes undesired materials, noise, signal, or information. (2) Respirator. The media component of a respirator which removes particulate materials, such as dusts, fumes, fibers, and/or mists from inspired air. (3) Sample. Sampling media for collection of airborne particulate contaminants in order to determine the concentration of the material in the air. Filter media may be made of cellulose fibers, glass fibers, mixed cellulose esters (membrane filter), polyvinyl chloride, Teflon, polystyrene, or other material.

**filter efficiency**
The efficiency of a filter media expressed as collection efficiency (percentage of total particles collected), or as penetration (percent of particles that pass through the filter).

**filtration**
(1) Wastewater Treatment. A treatment process, under the control of qualified operators, for removing solid (particulate) matter from water by passing the water through porous media such as sand or manmade filters. The process is often used to remove particles that contain pathogenic organisms. (2) Sampling. The process of collecting a contaminant on an appropriate filter media for determining its composition and concentration in the sampled air, as well as determining if the exposure level is acceptable or whether exposure controls must be developed and implemented. (3) Respiratory Protection. The process of removing a contaminant from air being inhaled.

**final**
Aviation. Commonly used to mean that an aircraft is on the final approach course or is aligned with a landing area.

**final approach**
Aviation. That part of an instrument approach procedure which commences at the specified final approach fix or point, or where such a fix or point is not specified: a) at the end of the last procedure turn, base turn or inbound turn of a racetrack procedure, if specified; or b) at the point of interception of the last track specified in the approach procedure, and ends at a point in the vicinity of an aerodrome from which a landing can be made, or a missed approach procedure is initiated.

**final approach course**
Aviation. A published Microwave Landing System (MLS) course, a straight line extension of a localizer, a final approach radial/bearing, or a runway centerline all without regard to distance.

**final approach fix (FAF)**
Aviation. The fix from which the final approach Instrument Flight Rule (IFR) to an airport is executed and which identifies the beginning of the final approach segment. It is designated on government charts by the Mal-
tese Cross symbol for non-precision approaches and the lightning bolt symbol for precision approaches; or when Air Traffic Control directs a lower-than-published glideslope/path Intercept Altitude, it is the resultant actual point of the glideslope/path intercept.

**final approach point (FAP)**  
*Aviation.* The point, applicable only to a non-precision approach with no depicted final approach fix (FAF) (such as an on-airport VOR), where the aircraft is established inbound on the final approach course from the procedure turn and where the final approach descent may be commenced. The final approach point (FAP) serves as the FAF and identifies the beginning of the final approach segment.

**final approach segment**  
*Aviation.* That segment of an instrument approach procedure in which alignment and descent for landing are accomplished.

**final controller**  
*See air traffic controller.*

**final monitor aid**  
*Aviation.* A high resolution color display that is equipped with the controller alert system hardware/software which is used in the precision runway monitor (PRM) system. The display includes alert algorithms providing the target predictors, a color change alert when a target penetrates or is predicted to penetrate the no transgression zone (NTZ), a color change alert if the aircraft transponder becomes inoperative, synthesized voice alerts, digital mapping, and like features contained in the PRM system.

**final product**  
Under ISO 14000, a product which requires no additional transformation prior to its use.

**finding of no significant impact (FNSI)**  
A document prepared by a federal agency that presents the reasons why a proposed action would not have a significant impact on the environment and thus would not require preparation of an Environmental Impact Statement. An FNSI is based on the results of an environmental assessment. Also referred to as FONSI.

**FINDS**  
*See Facility Index System.*

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**fine**  
A money sanction ordered by a government agency or court, sometimes loosely used to include civil penalties but more properly applied only to criminal fines.

**finger**  
Any of the structures on the hand composed of three phalanges and the surrounding tissues of a digit.

**finger dexterity**  
The ability to make rapid, coordinated finger movements using one or both hands to manipulate small objects.

**finger diameter**  
The maximum medial-lateral cross-sectional diameter of a finger. Measured by a determination of the smallest diameter hole into which the finger can be inserted (specifying the digit involved).

**finger-shaping**  
Providing the alternating troughs and ridges on a handle or gripping structure to accommodate the fingers and the gaps between them.

**fingernail**  
The harder elastic tissue covering the dorsal portion of the terminal phalanges of the hand.

**fingerprint**  
The pattern of unique whorls and ridges on the pad of the distal phalanx of each finger. Also known as *digital dermatoglyph.*

**fingertip height**  
*See dactylium height.*

**finished aviation gasoline**  
All special grades of gasoline for use in aviation reciprocating engines, as given in American Society for Testing and Materials (ASTM) Specification D910 and Military Specification MIL-G-5572. Excludes blending components that will be used for blending or compounding into finished aviation gasoline. *See also gasoline.*

**finished gasohol motor gasoline**  
A blend of finished motor gasoline (leaded or unleaded) and alcohol (generally ethanol, but sometimes methanol) in which 10 percent or more of the product is alcohol. *See also gasohol and gasoline.*

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finished leaded gasoline
Contains more than 0.05 gram of lead per gallon or more than 0.005 gram of phosphorus per gallon. Premium and regular grades are included, depending on the octane rating. Includes leaded gasohol. Blend-stock is excluded until blending has been completed. Alcohol that is to be used in the blending of gasohol is also excluded.

finished leaded premium motor gasoline
Motor gasoline having an antiknock index, calculated as \((R+M)/2\), greater than 90 and containing more than 0.05 gram of lead per gallon or more than 0.005 gram of phosphorus per gallon.

finished leaded regular motor gasoline
Motor gasoline having an antiknock index, calculated as \((R+M)/2\), greater than or equal to 87 and less than or equal to 90 and containing more than 0.05 gram of lead or 0.005 gram of phosphorus per gallon.

finished motor gasoline
(1) A complex mixture of relatively volatile hydrocarbons, with or without small quantities of additives, blended to form a fuel suitable for use in spark-ignition engines. Specification for motor gasoline, as given in American Society for Testing and Materials (ASTM) Specification D439-88 or Federal Specification VV-G-1690B, include a boiling range of 122 degrees to 158 degrees Fahrenheit at the 10 percent point to 365 degrees to 374 degrees Fahrenheit at the 90 percent point and a Reid vapor pressure range from 9 to 15 psi. "Motor gasoline" includes finished leaded gasoline, finished unleaded gasoline, and gasohol. Blendstock is excluded until blending has been completed. Alcohol that is to be used in the blending of gasohol is also excluded. (2) Motor gasoline that is not included in the reformulated or oxygenated categories.

finished unleaded gasoline
Contains not more than 0.05 gram of lead per gallon and not more than 0.005 gram of phosphorus per gallon. Premium and regular grades are included, depending on the octane rating. Includes unleaded gasohol. Blendstock is excluded until blending has been completed. Alcohol that is to be used in the blending of gasohol is also excluded.

finished unleaded midgrade motor gasoline
Motor gasoline having an antiknock index, calculated as \((R+M)/2\), greater than or equal to 88 and less than or equal to 90 and containing not more than 0.05 gram of phosphorus per gallon.

finished unleaded premium motor gasoline
Motor gasoline having an antiknock index, calculated as \((R+M)/2\), greater than 90 and containing not more than 0.05 gram of lead or 0.005 gram of phosphorus per gallon.

finished unleaded regular motor gasoline
Motor gasoline having an antiknock index, calculated as \((R+M)/2\), of 87 containing not more than 0.05 gram of lead per gallon and not more than 0.005 gram of phosphorus per gallon.

finite element
A small segment of a large object obtained by some standard division process.

finite element analysis
The use of finite elements to model force components on a large object or complex structure and draw conclusions about that object or structure as a whole.

FIP
See Federal Implementation Plan.

FIR
See flight information region.

fire
(1) Uncontrolled combustion by flame or smoke resulting in evidence of charring, melting, or other evidence of ignition. (2) The process of rapid oxidation that generally produces both heat and light. May also be referred to generally as combustion.

fire alarm
Any fire protection device or system which indicates the presence of a fire.

fire brigade
An organized group of employees who are knowledgeable, trained, and skilled in at least basic fire fighting operations. May also be referred to as a private fire department or an industrial fire department.

fire classification
A division of fires by the types of materials being burned. Briefly: Class A – Ordinary combustible materials (e.g., wood, paper);
Class B – Flammable liquid or gas (e.g., oil, paint, grease); Class C – Energized electrical circuits (e.g., electrical wiring, equipment); Class D – Combustible metals (e.g., magnesium, sodium, lithium). Portable fire extinguishers are also based on these fire classifications (i.e., they are classed for the type of fire they are capable of extinguishing). See also Class A Fire, Class B Fire, Class C Fire, and Class D Fire.

fire detection

The use of any fire protection device or system intended to determine that a fire is present. Usually sensitive to heat, smoke, or flame.

fire door

Any door which has been designed, tested, and rated for preventing the spread of fire.

fire/explosion, fuel

Accidental combustion of vessel fuel, liquids, including their vapors, or other substances, such as wood or coal.

fire/explosion, other

Accidental burning or explosion of any material on board except vessel fuels or their vapors.

fire insurance

A contract of insurance by which the underwriter, in consideration of the premium, undertakes to indemnify the insured against all losses in his/her houses, buildings, furniture, ships in port, or merchandise by means of accidental fire happening within a prescribed period. See also insurance.

fire or violent rupture

Rail. An accident or incident caused by combustion or violent release of material carried by or transported by rail. Examples of this type include fuel and electrical equipment fires, crankcase explosions, and violent release of liquefied petroleum or anhydrous ammonia.

fire point

The minimum temperature to which a material must be heated to sustain combustion after ignition by an external source.

fire prevention

The study and/or implementation of measures specifically designed to control ignition and fuel sources.

fire protection

The implementation of measures for preventing, detecting, controlling, and extinguishing fire to protect life and property.

fire resistant

(1) Pertaining to a normally non-combustible material which will withstand the effects of a fire. (2) With respect to sheet or structural members, it means the capacity to withstand the heat associated with fire at least as well as aluminum alloy in dimensions appropriate for the purpose for which they are used. (3) With respect to fluid-carrying lines, fluid system parts, wiring, air ducts, fittings, and power-plant controls, it means the capacity to perform the intended functions under the heat and other conditions likely to occur when there is a fire at the place concerned.

fire resistive

The ability of a structure or material to provide a predetermined degree of fire resistance, usually rated in hours.

fire retardant

Any material or substance which slows the progress of a fire through reduced combustibility.

fire triangle

The recognition that three elements must be present in the right proportion for a fire to exist. These are oxygen (or an oxidizing agent), fuel (or a reducing agent), and heat. Keeping the three elements of the fire triangle apart is the key to preventing fires, and removing one or more of these elements is the key to extinguishing fires that do start.

Fire triangle concept

(remove any one leg and a fire cannot start or an existing fire will go out)
fire wall
Any self-supporting vertical structure designed to resist the horizontal spread of a fire from one enclosed region to another.

firefighting vehicle
A vehicle designed exclusively for the purpose of fighting fires.

Fireman's Rule
Doctrine which holds that professionals, whose occupations by nature expose them to particular risks, may not hold another negligent for creating the situation to which they respond in their professional capacity.

fireproof
According to commonly accepted terminology, the word "fireproof" is technically not an accurate term since few materials are actually incapable of "total" resistance to flame or fire. However, as defined in 14 CFR 1, the term "fireproof" means: (1) with respect to materials and parts used to confine fire in a designated fire zone, the capacity to withstand at least as well as steel in dimensions appropriate for the purpose for which they are used, the heat produced when there is a severe fire of extended duration in that zone; and (2) with respect to other materials and parts, the capacity to withstand the heat associated with fire at least as well as steel in dimensions appropriate for the purpose for which they are used.

fireworks
See pyrotechnics.

firing circuit
The current path between the power source and the initiating device.

firmware
Computer programs and data loaded in a class of memory that cannot be dynamically modified by the computer during processing. For System Safety purposes, firmware is to be treated as software.

first aid
(1) Any emergency care provided to an ill or injured person in order to relieve pain, counteract shock, or prevent death or further injury until better medical care becomes available. (2) Under OSHA 29 CFR 1904.12(e), any one-time treatment, and any follow-up visit for the purpose of observation, of minor scratches, cuts, burns, splinters, and so forth, which do not ordinarily require medical care. Such one-time treatment, and follow-up visit for the purpose of observation, are considered first aid even though they may be provided by a physician or registered professional personnel.

first aid injury
Any injury requiring first aid treatment only; considered by OSHA to be non-recordable for recordkeeping purposes. See also first aid.

First Amendment
Amendment to the U.S. Constitution guaranteeing basic freedoms of speech, religion, press, and assembly and the right to petition the government for redress of grievances. The various freedoms and rights protected by the First Amendment have been held applicable to the states through the due process clause of the Fourteenth Amendment. See also fighting words doctrine.

first-class lever
A lever in which the fulcrum is located between the effort and resistance.

first-class passenger revenue
Aviation. Revenues from the air transportation of passengers moving at either standard fares, premium fares, or at reduced fares not predicated upon the use of aircraft space specifically separated from first class, and for whom standard or premium quality services are provided.

first-class service
Aviation. Transport service established for the carriage of passengers moving at either standard fares or premium fares, or at reduced fares not predicated upon the operation of specifically allocated aircraft space, and for whom standard or premium quality services are provided.

first degree murder
A murder committed with deliberately premeditated malice aforethought, or with extreme atrocity or cruelty, or in the commission or attempted commission of a crime punishable with death or imprisonment for life, is murder in the first degree.

first draw
The water that immediately comes out when a tap is first opened. This water is likely to
have the highest level of lead contamination from plumbing materials.

first harmful event

*Highway Transit.* (1) A first harmful event is the first event during a traffic accident that causes an injury (fatal or nonfatal) or property damage. (2) The first event during a crash that caused injury or property damage.

first phalanx length

The linear distance of the most proximal segment of a finger. Measured across the surfaces from the distal tip of the third metacarpal to the proximal tip of the second phalanx while the hand is held in a fist (while specifying the digit involved).

first piece time

The time permitted or required for the production of the first complete item in the starting sequence of several complete items.

first-order content

*See* rate control.

first shift

A day work shift of about 8 hours' duration, approximately between 7 A.M. and 5 P.M. Also called day shift or A-shift.

first tier center

*Aviation.* The air route traffic control center immediately adjacent to the impacted center.

fish

According to the Federal Outer Continental Shelf Lands Act Amendments of 1978: Fin fish, mollusks, crustaceans, and all other forms of marine animal and plant life other than marine mammals, birds, and highly migratory species.

Fishberg concentration test

A laboratory test used to determine the ability of the kidneys to concentrate urine. Samples of urine are collected and tested for specific gravity.

fishy back

*Transportation* (slang). The movement of loaded truck trailers by barge or ferry.

fission

A type of nuclear reaction occurring in very heavy atoms in which the nucleus, following bombardment by neutrons or other atomic particles, splits into two nuclei of nearly comparable mass, accompanied by the release of energy. Also referred to as *atomic fission* and *nuclear fission.*

fission products

The products produced as a result of the splitting (fission) of a substance.

fissionable material

A material that can be split (fission) into other nuclei by any process. *See also fission.*

fissure

A narrow slit or cleft.

fist

A hand posture consisting of a maximal flexion of the hand in which the phalanges of digits II – V (the fingers) are tightly collapsed into the palm with the metacarpals and phalanges of digit I (the thumb) flexed to overlie the fingers.

fist circumference

The surface distance around the fist over the thumb and the knuckles. Measured with the thumb lying across the end of the fist.

The human hand, in fist orientation

fistula

Any abnormal, tubelike passage within body tissue.
fit
(1) The adequacy, suitability, and/or appropriateness of some individual, equipment, object, or structure with consideration of size, shape, conditioning, or other aspects to perform some function or fulfill a need or use. (2) A sudden, brief exhibition of emotion or motor activity.

fit check
See fit test.

fit factor
The value of the ratio of the outside concentration of a substance to the concentration of that substance inside a respirator/face mask during a fit test.

fit test
The testing of a prototype item on either a sample or potentially the population as a whole to verify that a design is acceptable, appropriate, or the best option for the environment. The term usually refers to clothing or personal protective equipment. Also referred to as fit check.

fitting
An accessory such as a lock nut, bushing, or other part of a wiring system that is intended primarily to perform a mechanical rather than an electrical function.

Fitts' Law
A rule for movement time prediction, in which the average movement time in a response is a function of the target separation distance and the width of the target. See also index of difficulty. Expressed as

\[ MT = a + b \log_2 \left( \frac{2A}{W} \right) \]

where:
- \( MT \) = movement time
- \( A \) = distance to target
- \( W \) = width of target

fix
Aviation. A geographical position determined by visual reference to the surface, by reference to one or more radio navigational aids (NAVAIDs), by celestial plotting, or by another navigational device.

fix balancing
Aviation. A process whereby aircraft are evenly distributed over several available arrival fixes reducing delays and controller workload.

fixation
(1) The focusing and convergence of the eyes on some point or object at a distance. (2) Having a particular attachment for one technique for performing some task.

fixation disparity
A condition in which the visual axes intersect at some point other than in the desired fixation plane.

fixation distance
That distance at which the visual axes intersect.

fixation muscle
See fixator.

fixation plane
That fixation surface which is at such a distance from the observer that the arc may be assumed for practical purposes to be planar. See also fixation surface.

fixation point
That location in a normal individual's line of sight at which the eyes' visual axes intersect. Also referred to as point of fixation.

fixation reflex
An ocular reflex mechanism which tends to orient the eyes toward a stationary light or object or to keep the eyes oriented toward a light or object which is in motion relative to the observer.

fixation surface
That curved surface which is perpendicular to the observer's line of sight and which contains the fixation point of the eyes. See also fixation plane.

fixative
A chemical, such as alcohol or formaldehyde, used for the preservation of biological materials.

fixator
A muscle which undergoes an isometric contraction to steady a body part or segment against some other muscle contraction or against an external force. Also referred to as fixation muscle and stabilizer.

fixed collision barrier
A flat, vertical, unyielding surface with the following characteristics: 1) The surface is...
sufficiently large that when struck by a tested vehicle, no portion of the vehicle projects or passes beyond the surface; 2) The approach is a horizontal surface that is large enough for the vehicle to attain a stable attitude during its approach to the barrier, and that does not restrict vehicle motion during impact; 3) When struck by a vehicle, the surface and its supporting structure absorb no significant portion of the vehicle's kinetic energy, so that a performance requirement described in terms of impact with a fixed collision barrier must be met no matter how small an amount of energy is absorbed by the barrier.

fixed crane
A crane whose principal structure is mounted on a permanent or semipermanent foundation.

fixed dam
A dam which does not permit the passage of marine traffic and requires the use of a lock in contrast to movable dams which, during periods of high water, are lowered to allow traffic to pass directly over the dam. Also, any dam that has a fixed height without adjustment such as a concrete spillway throughout the length of the dam exclusive of the lock chamber.

fixed extinguishing system
A permanently installed system that either extinguishes or controls a fire at the location of the system.

fixed function key
A keyboard key which directs a computer to perform some unchangeable, specific function when pressed.

fixed guideway system
A system of vehicles that can operate only on its own guideway constructed for that purpose (e.g., rapid rail, light rail). Federal usage in funding legislation also includes exclusive right-of-way bus operations, trolley coaches and ferryboats as "fixed guideway" transit.

fixed linkage mechanism
See link.

fixed object
Stationary structures or substantial vegetation attached to the terrain.

fixed operating cost
Transit. In reference to passenger car operating cost, refers to those expenditures that are independent of the amount of use of the car, such as insurance costs, fees for license and registration, depreciation and finance charges.

fixed route
Service provided on a repetitive, fixed-schedule basis along a specific route with vehicles stopping to pick up and deliver passengers to specific locations; each fixed-route trip serves the same origins and destinations, unlike demand response and taxicabs.

fixed route system
A system of transporting individuals (other than by aircraft), including the provision of designated public transportation service by public entities and the provision of transportation service by private entities, including, but not limited to, specified public transportation service, on which a vehicle is operated along a prescribed route according to a fixed schedule.

fixed shift
A work shift in which the working hours remain the same over time.

fixture
(1) Any device at a workplace used for positioning or holding materials being assembled, worked on, or used. (2) See lighting fixture.

fixture hand
That hand being used to hold an object while the other hand performs some work on the object.

fl
See footlambert.

flag
Aviation. A warning device incorporated in certain airborne navigation and flight instruments indicating that a) instruments are inoperative or otherwise not operating satisfactorily, or b) signal strength or quality of the received signal falls below acceptable values.

flag drop charge
The charge for an initial distance (usually specified by regulation) for taxi service. It is actually the minimum fare.

flame
The electromagnetic radiation from a fire, typically referring to the visible range.

flame arrester
Device used in gas vent lines, and other similar locations, to arrest or prevent the passage
of flame into an enclosed space, such as a container or flammable liquid storage cabinet.

**flame ionization detector (FID)**
A carbon detector which relies on the detection of ions formed when carbon-containing material, such as a volatile or gaseous hydrocarbon, is burned in a hydrogen-rich flame. This detector is commonly used in a gas chromatograph to detect and quantify organic compounds. It is also employed in some portable instruments.

**flame photometric detector**
A detection system based on the luminescent emissions between 300 and 425 nanometers when sulfur compounds are introduced into a hydrogen-rich flame. An optical filter system is used to differentiate the sulfur compounds present from other materials. This detector finds application in gas chromatography.

**flame propagation**
The spread of a flame throughout an entire volume of a vapor-air mixture from a single source of ignition.

**flame resistant**
(1) Not susceptible to combustion to the point of propagating a flame, beyond safe limits, after the ignition source is removed. (2) The property of materials, or combinations of component materials, to retard ignition and restrict the spread of flame.

**flameout**
Unintended loss of combustion in turbine engines resulting in the loss of engine power.

**flammability range**
The difference between the lower and upper flammable limits, expressed in terms of percentage of a vapor or gas in air or oxygen by volume. See also **flammable range and upper flammability limit (UFL)**.

**flammable**
(1) Any substance that is easily ignited and burns, or has a rapid rate of flame spread. (2) Capable of being ignited and burning. (3) With respect to a fluid or gas, means susceptible to igniting readily or to exploding.

**flammable atmosphere**
A surrounding gaseous environment which contains a mixture of gases or vapors within their flammable range(s).

**flammable limits**
The percent by volume limits (i.e., upper and lower flammable limits) of the concentration of a flammable gas at normal temperature and pressure in air above and below at which flame propagation does not occur on contact with a source of ignition. See also **flammability range, lower flammable limit, and upper flammable limit**.

**flammable liquid**
(1) **Class I flammable liquid**. Any liquid having a flash point below 100°F (37.8°C). (2) **Class II flammable liquids**. Any liquid having a flash point above 100°F (37.8°C) but below 140°F (60°C).

**flammable mixture**
Any combination of flammable vapor or gas and an appropriate oxidizing agent within the flammable range.

**flammable solid**
A solid material that is easily ignited and that burns rapidly.

**flanged hood**
A barrier placed around the periphery of a chemical hood to reduce air turbulence and hood entry pressure loss by keeping the hood from drawing air from behind the hood face.

**flanking buoy**
Buoy tied to the corner of a tow so pilot can tell when tow has been checked.

**flanking maneuver**
Maritime. Maneuvering action of a tow (when down-bound) approaching at an angle (usually 30 to 45 degrees) at bridges or locks or in sharp bends. Only the current is utilized for headway, and the engines and rudders are used to maintain the angle until just before the lead barges reach the bridge span, at which time the engines are backed and the head of the tow is swung gently in line with the opening. Then full power is applied to drive through the opening. This is the safest way that a heavy tow can make tight passages.

**flanking rudder**
Maritime. A rudder installed forward of the screw, used for maneuvering when the propellers are turning a stem regardless of the direction of actual movement of the towboat. Also called **backing rudders**.
flap extended speed
*Aviation.* The highest speed permissible with wing flaps in a prescribed extended position.

flash
(1) A sudden, great increase in brightness for a short period of time. (2) A highlighting technique in which a selected portion of a display momentarily increases in brightness.

flash blindness
A temporary inability to see detail of objects having poor illumination following a brief exposure to very intense light.

flash burn
(1) An inflammation of the lens of the eye due to excessive exposure to ultraviolet radiation, usually from a welding arc. (2) Any injury to tissue from sudden intense heat radiation.

flash rate
The number of times a highlighted portion of a display increases in brightness within a specified temporal interval.

flash resistant
Not susceptible to burning violently when ignited.

flashback arrester
A mechanical device utilized on a vent of a flammable liquid or gas storage container to prevent flashback into the container, when a flammable or explosive mixture ignites outside the container.

flasher
In rail systems, the flashing light at railroad grade crossings that warns motorists, bicyclists, and pedestrians of approaching trains.

flat
(1) *General.* A smooth, level surface. (2) Having little or no gloss. (3) *Maritime-General.* A small barge with flat top used for transporting fuel or other miscellaneous cargo. (4) *Maritime-Navigation.* A place covered with water too shallow for navigation with vessels ordinarily used for commercial purposes. The space between high and low water marks along the edge of an arm of the sea, bay, tidal river, etc.

flat car
A rail car without a roof and walls.

flat face
Cab over engine configuration.

flat pool
The normal stage of water in the area between two dams that is to be maintained by design when little or no water is flowing; hence the pool flattens out.

flat rate manual
A manual published by an equipment manufacturer or an independent publisher that indicates the length of time required for performing specific mechanical tasks such as installing a clutch. Normally, the costs of parts required for a specific job are also listed.

flatbed
A truck or trailer without sides and top.

flatboat
A rectangular, flat-bottomed boat used on the western rivers during the 18th and 19th centuries.
flatulence
Having gas in the gastrointestinal tract.

flatus
Gas or air expelled from the gastrointestinal tract.

flaw
An imperfection or unintentional discontinuity that is detectable by nondestructive examination.

fleet
The vehicles in a transit system. Usually, "fleet" refers to highway vehicles and "rolling stock" to rail vehicles.

fleet management center (FMC)
A formally approved element of the Interagency Fleet Management System (IFMS) responsible for the administrative control of Interagency Fleet Management System (IFMS) vehicles in a specified geographic area as defined in the determination that is approved by the Administrator of General Services.

fleet management subcenter
A formally approved element of the Interagency Fleet Management System (IFMS) the Fleet Management Center is physically detached from the central or main Fleet Management Center.

fleet management system (FMS)
The automated inventory and control system used by the Interagency Fleet Management System (IFMS) to track vehicle assignments, vehicle utilization, and provide direct input to the Finance Division to bill customer agencies for the use of IFMS vehicles.

fleet policy insurance
Type of blanket insurance covering a number of vehicles of the same insured (e.g., covers pool or fleet vehicles owned by a business). See also insurance.

fleet vehicles
(1) Private fleet vehicles: ideally, a vehicle could be classified as a member of a fleet if it is operated in mass by a corporation or institution, operated under unified control, or used for non-personal activities; however, the definition of a fleet is not consistent throughout the fleet industry. Some companies make a distinction between cars that were bought in bulk rather than singularly, or whether they are operated in bulk, as well as the minimum number of vessels that constitute a fleet (i.e., 4 or 10). (2) Government fleet vehicles: includes vehicles owned by all federal (GSA) state, county, city, and metro units of government, including toll road operations.

fleeting
Storing of barges (loaded or unloaded) until they can be moved to the unloading area or until the owner can pick them up.

flex
To move adjacent body segments connected by a common joint so that the angle formed by the joint and the two segments is decreased.

flexibility
(1) The capability for adjusting to varying conditions. (2) A measure of the mobility of a joint or a series of joints. Quantified as the range of motion, reach.

flexibility of closure
The ability to discover a known pattern masked by the background material.

flexible work schedule
See flextime.

flexion
Movement in which the angle between two bones connecting to a common joint is reduced.

flexor
Any muscle which causes joint flexion.

flexor muscles
Muscles which when contracted, decrease the angle between limb segments.

flexor retinaculum
The ligament which forms the carpal tunnel in the wrist through which the finger flexor tendons and the median nerve pass.

flextime
A work schedule in which an employee has the freedom within certain limits to choose his work starting and stopping times, but which usually includes a period of time within a given shift during which the employee must be present. Also referred to as flextime and flexible work schedule.

flicker
A perceptible temporal variation of brightness or movements occurring several times per
second in a display or other source within the visual field.

**flicker-free display**
A visual display unit with a refresh rate greater than 60 Hz.

**flicker fusion**
The perception of a regular, intermittent visual stimulus as continuous or steady by the eye or video sensor. May be referred to more commonly as *fusion*.

**flicker fusion frequency (FFF)**
The frequency at which flicker fusion occurs. Also referred to as *critical flicker frequency*, *critical fusion frequency*, and *critical fusion frequency*.

**flicker photometry**
The use of a single field of view and rapidly alternating light sources of different colors to determine equal-appearing intensity.

**flight advisory service**
A service specifically designed to provide, upon pilot request, timely weather information pertinent to his type of flight, intended route of flight, and altitude. The flight service stations providing this service are listed in the Airport/Facility Directory. See also *flight watch*.

**flight check**
A call-sign prefix used by Federal Aviation Administration (FAA) aircraft engaged in flight inspection/certification of navigational aids and flight procedures. The word "recorded" may be added as a suffix; (e.g., "flight check 320 recorded" to indicate that an automated flight inspection is in progress in terminal areas). See also *flight inspection*.

**flight crew member**
A pilot, flight engineer, or flight navigator assigned to duty in an aircraft during flight time.

**flight deck**
(1) That region of an aircraft or spacecraft in which the flight controls and instrumentation, the pilot, and others involved in operating the vehicle are based. (2) That region of an aircraft-carrying ship on which air-support and/or ground-support operations, including launching and landing, take place.

**flight equipment**
The total cost of property and equipment of all types used in the in-flight operations of aircraft and construction work in progress.

**flight information region (FIR)**
An airspace of defined dimensions within which Flight Information Service and Alerting Service are provided.

**flight information service**
A service provided for the purpose of giving advice and information useful for the safe and efficient conduct of flights.

**flight inspection**
In-flight investigation and evaluation of a navigational aid to determine whether it meets established tolerances. See also *flight check*.

**flight level**
A level of constant atmospheric pressure related to a reference datum of 29.92 inches of mercury. Each is stated in three digits that represent hundreds of feet. For example, flight level 250 represents a barometric altimeter indication of 25,000 feet; flight level 255, an indication of 25,500 feet. See also *cardinal altitude*.

**flight line**
A term used to describe the precise movement of a civil photogrammetric aircraft along a predetermined course(s) at a predetermined altitude during the actual photographic run.

**Flight Management System**
A computer system that uses a large database to allow routes to be preprogrammed and fed into the system by means of a data loader. The system is constantly updated with respect to position accuracy by reference to conventional navigation aids. The sophisticated program and its associated database ensures that the most appropriate aids are automatically selected during the information update cycle.

**Flight Management System Procedure**
An arrival, departure, or approach procedure developed for use by aircraft with a slant (/G) equipment suffix.

**flight path**
A line, course, or track along which an aircraft is flying or intending to be flown. See also *bearing, course*.
flight plan
Specified information, relating to the intended flight of an aircraft, that is filed orally or in writing with air traffic control.

flight plan area
The geographical area assigned by regional air traffic divisions to a flight service station for the purpose of search and rescue for Visual Flight Rule (VFR) aircraft, issuance of NOTAMs, pilot briefing, in-flight services, broadcast, emergency services, flight data processing, international operations, and aviation weather services. Three letter identifiers are assigned to every flight service station and are annotated in AFDs and Order 7350.6 as tie-in-facilities.

flight recorder
A general term applied to any instrument or device that records information about the performance of an aircraft in flight or about conditions encountered in flight. Flight recorders may make records of airspeed, outside air temperature, vertical acceleration, engine RPM, manifold pressure, and other pertinent variables for a given flight.

Flight Service Station (FSS)
Air traffic facilities offering pilot briefings, en route communications, and VFR search and rescue services. Additionally, the FSS assists lost aircraft and aircraft in emergency situations; relay ATC clearances; originate Notices to Airmen; broadcast aviation weather and NAS information; receive and process IFR flight plans; monitor radio Navigation Aids (NAVAIDS). Also, at selected locations, FSSs take weather observations, issue airport advisories, and advise Customs and Immigration of transborder flight.

flight services
The sum of flight plans originated and pilot briefs, multiplied by two, plus the number of aircraft contacted.

flight simulator
A flight trainer with computer-driven functional displays and controls, possibly including motion.

flight stage
The operation of an aircraft from takeoff to landing.

Flight Standards District Office
A Federal Aviation Administration (FAA) field office serving an assigned geographical area and staffed with Flight Standards personnel who serve the aviation industry and the general public on matters relating to the certification and operation of air carrier and general aviation aircraft. Activities include general surveillance of operational safety, certification of airmen and aircraft, accident prevention, investigation, enforcement, etc.

flight test
A flight for the purpose of a) investigating the operation/flight characteristics of an aircraft or aircraft component, and/or b) evaluating an applicant for a pilot certificate or rating.

flight time
The time from the moment the aircraft first moves under its own power for the purpose of flight until the moment it comes to rest at the next point of landing. Also known as block to block time.

flight trainer
A ground-based pilot training device containing a representation of an aircraft cockpit for familiarization and basic training purposes.

flight visibility
The average forward horizontal distance, from the cockpit of an aircraft in flight, at which prominent unlighted objects may be seen and identified by day and prominent lighted objects may be seen and identified by night.

flight watch
A shortened term for use in air-ground contacts to identify the flight service station providing En Route Flight Advisory Service (e.g., "Oakland Flight Watch"). See also flight advisory service.

float

float light
A 10-foot wooden platform mounted on pontoons supporting a battery-operated light. Used exclusively on the Upper Mississippi River in a certain area.
**float scaffold**  
A scaffold hung from overhead supports by means of ropes and consisting of a substantial platform having diagonal bracing underneath, resting upon and securely fastened to two parallel plank bearers at right angles to the span. Also called *ship scaffold*.

**floater**  
*Transit (slang).* A driver without a steady job.

**floater insurance**  
A form of insurance that applies to movable property wherever its location, if within the territorial limits imposed by the contract. See also *insurance*.

**floating crane**  
A crane mounted on a barge or pontoon which can be towed or self-propelled from place to place.

**floating kidney**  
A condition in which the kidney does not remain fixed in its normal position. Nephrophtosis refers to a dropping of the kidney from its normal position. Surgical correction, by nephropexy, is necessary when the condition interferes with normal kidney function.

**floating pin**  
A mooring pin or timber head attached to a floating tank in a lock chamber set in a guided recess in the lock walls, for mooring tows within the lock chamber whereby a short mooring line suffices without an attendant.

**floating the gears**  
*Transportation (slang).* Shifting gears without using the clutch.

**floats**  
Large single tires, instead of dual tires.

**floc**  
A dump of solids formed in sewage by biological or chemical action.

**floculate**  
See *agglomeration*.

**flocculation**  
The process by which clumps of solids in water or sewage are made to increase in size by biological or chemical action so that they can be separated from the water.

**flood**  
(1) *General.* An uncontrolled overrun of a liquid (usually water) into an area where it is not normally expected to be in such great quantities. (2) *Computing.* To send multiple messages to the viewing screen, with clearing or scrolling of the screen before all can be read.

**flood insurance**  
Insurance indemnifying against loss by flood damage. Required by lenders in areas designated as potential flood areas. The insurance is privately issued but federally subsidized. See also *insurance*.

**flood plain**  
An area which is subject to periodic flooding. See also *floodplain*.

**flood stage**  
Condition of the river when it rises above a stage predetermined by the Corps of Engineers to be designated as flood stage. Also, the stage at which some part of the main bank may be overflowed, but not necessarily all of it.

**floodgate**  
Gate placed across/along a channel to control floodwater or a gate across a roadway in levee. See also *gate* and *tidegate*.

**flooding**  
Filling with water, regardless of method of ingress, but retaining sufficient buoyancy to remain on the surface.

**floodplain**  
Land adjacent to rivers which, because of its level topography, floods when a river overflows. See also *flood plain*.

**floodwater**  
Waters which escape from a stream or other body of water and overflow adjacent territory, under conditions which do not usually occur.

**floor hole**  
An opening measuring less than 12 inches but more than 1 inch in its least dimension, in any floor, platform, pavement, or yard, through which materials but not persons may fall; such as a belt hole, pipe opening, or slot opening.
floor opening
An opening measuring 12 inches or more in its least dimension, in any floor, platform, pavement, or yard, through which persons may fall; such as a hatchway, stair or ladder opening, pit, or large manhole. Floor openings occupied by elevators, dumb waiters, conveyors, machinery, or containers are excluded from this definition (OSHA 29 CFR 1910.21(a)(2)).

floor reference plane
(1) That plane through the floor reference point and perpendicular to the local vertical axis. (2) That point on a floor or other base surface which provides an origin for representing all other coordinates within the volume of interest.

floor sweep
A vapor collection system designed to capture vapors which are heavier than air and which collect along the floor.

floppy disk
A flexible plastic disk used as a common form of external storage for information in a microcomputer system.

flow analysis
An examination of the progressive sequence of activities and locations of personnel, equipment, and materials involved in the performance of a particular task or operation.

flow control
Aviation. Measures designed to adjust the flow of traffic into a given airspace, along a given route, or bound for a given aerodrome (airport) so as to ensure the most effective utilization of the airspace.

flow diagram
A scaled graphic/pictorial representation of the layout and locations of activities or operations and the flow paths of materials between activities in a process.

flow path
The route(s) taken by personnel, equipment, and materials involved in production as the manufacturing process continues. Also called flow line or line of flow.

flow process chart
A graphic/symbolic representation using standardized symbols for the manipulations involved for an item through each of the various steps required. See also process chart, process chart symbol, worker-type flow process chart, material-type flow process chart, and equipment-type flow process chart.

flow rate
The volume per time unit (e.g., liters per minute, etc.) given to the flow of air or other fluid by the action of a pump, fan, etc.

flowchart
A diagram consisting of standardized symbols which enclose text and/or other symbols and are governed by specific layout rules for describing the steps involved in a given operation.

FLSA

FLSC
Flexible linear-shaped charge.

flue
A pipe or other channel through which combustion air, smoke, steam, or other material is vented to the atmosphere.

flue gas
The air coming out of a chimney after combustion in the burner it is venting. It can include nitrogen oxides, carbon oxides, water vapor, sulfur oxides, particles, and many chemical pollutants.

flue gas desulfurization
A technology which uses a sorbent, usually lime or limestone, to remove sulfur dioxide from the gases produced by burning fossil fuels. Flue gas desulfurization is currently the state-of-the-art technology in use by major sulfur dioxide emitters, such as power plants.

fluence
The number of particles or photons passing per unit area, usually square centimeter. Also referred to as radiation fluence.
**fluid**
(1) A material that flows readily in the natural state; a liquid or gas. (2) Composed of elements that yield to pressure without disruption of the mass. (3) One of the ultimate states of matter, being composed of molecules that can move about within limits, permitting change in the shape of the mass without disruption of the substance.

**fluid balance**
A physiological state in which water intake equals water loss. Also referred to as water balance.

**flume**
A natural or manmade channel that diverts water.

**fluence**
A hue similar to fluorescent materials.

**fluorescence**
Phenomenon involving the absorption of radiant energy by a substance (usually a crystal) and its re-emission as visible or near-visible light.

**fluorescent lamp**
A light source which operated by passing an electrical current through a closed tube containing mercury vapor and one or more suitable fluorescing powders coating the interior surface of the tube.

**fluorescent screen**
A sheet of material coated with a substance (usually calcium tungstate or zinc sulfide) that will emit light when irradiated with ionizing radiation.

**fluoridation**
The addition of a fluoride, a chemical salt containing fluorine, to drinking water. This has been found to reduce the occurrence of dental caries in children by one-half. Minute traces of fluoride are found in almost all food, but the quantity apparently is too small to meet the requirements of the body in building tooth enamel that resists cavities.

**fluorides**
Gaseous, solid, or dissolved compounds containing fluorine that result from industrial processes. Excessive amounts in food can lead to fluorosis.

**fluorine**
A chemical element, atomic number 9, atomic weight 18.998, symbol F.

**fluorocarbon**
Any of a number of organic compounds analogous to hydrocarbons in which one or more hydrogen atoms are replaced by fluorine.

**fluoroscope**
A screen mounted in front of an x-ray tube used for indirect visualization of internal body organs or internal structures of inanimate objects.

**fluorosis**
An abnormal condition caused by excessive intake of fluorine, characterized chiefly by mottling of the teeth.

**flush**
(1) To open a cold water tap to clear out all the water which may have been sitting for a long time in the pipes. In new homes, to flush a system means to send large volumes of water gushing through the unused pipes to remove loose particles of solder and flux. (2) To force large amounts of water through liquid to clean out piping or tubing, storage or process tanks.

**flush-mounted**
Pertaining to any piece of equipment which is embedded within a structure such that the exposed surface of the equipment is level with the structure surface.

**flutter**
(1) Any deviation in frequency of the reproduced sound from the original sound. (2) Any low-frequency vibration of an object capable of such vibration. (3) A tremulous, generally ineffective movement.

**flux**
(1) Electromagnetic Radiation. The number of visible-light photons, gamma-ray photons, neutrons, particles, or energy crossing a unit surface area per unit time. The units of flux are the number of particles (or energy, etc.) per square centimeter per second. (2) Soldering. A substance used to clean the surface and promote fusion in a soldering procedure.

**fly**
(1) To control an aircraft or spacecraft in flight, generally including takeoff and land-
ing. (2) A two-winged insect that is often the vector of organisms causing disease.

**fly ash**
Noncombustible residual particles from the combustion process, carried by flue gas.

**fly-by-wire**
A technique for controlling aircraft in which a digital signal carried by wire to hydraulic actuators in the wings and tail which move the flight control surfaces.

**fly-fix-fly**
A description of the early approach to system safety, with reference to the aviation industry, that focused upon an after-the-fact method of designing safe systems.

**fly heading (degrees)**
*Aviation.* Informs the pilot of the heading he should fly. The pilot may have to turn to, or continue on, a specific compass direction in order to comply with the instructions. The pilot is expected to turn in the shorter direction to the heading unless otherwise instructed by ATC.

**flyaway value**
*Aviation.* Includes the cost of the airframe, engines, electronics, communications, armament, and other installed equipment.

**flyback method**
See repetitive timing.

**flybar**
A system which provides airspeed, turn, and bank indications via auditory signals, instead of the conventional visual flight instruments.

**flyer**
*Transit (slang).* A run in which the driver takes a trailer to a distant terminal, leaves it there and immediately pulls another trailer back to his home terminal.

**flying operations expenses**
*Aviation.* Expenses incurred directly in the in-flight operation of aircraft and expenses related to the holding of aircraft and aircraft operational personnel in readiness for assignment for an in-flight status.

**flying orders**
*Transit.* Trip instructions issued to a driver by his/her dispatcher.

**FM**
See Factory Mutual Association.

**FMC**
See fleet management center.

**FMCSR**
See Federal Motor Carrier Safety Regulations.

**FMEA**
See failure mode and effect analysis.

**FMS**
See fleet management system.

**FNSI**
See finding of no significant impact. Also referred to as FONSI.

**FO**
See free out.

**foam**
(1) A fluid mixture of bubbles which floats on or flows over a surface. (2) A stable aggregation of small bubbles which flow freely over a burning liquid surface and form a coherent blanket which seals combustible vapors and thereby extinguishes the fire.

**foamed buoy**
A buoy whose interior is filled with styrofoam for the purpose of improving flotation when in a damaged condition.

**FOB**
See free on board.

**focal mechanism**
In seismology, the direction and sense of slip on a fault plane at the point of origin (see hypocenter) of an earthquake, as inferred from the first seismic waves which arrive at various locations. Often, they are drawn on maps with a "baseball-like" symbol. The dark areas denote compression, the white areas denote dilation. The fault plane which moved is parallel to one of the two planes dividing the sphere in half.

**focus**
(1) The point of convergence of light rays or sound waves. (2) See hypocenter.

**focused attention**
See selective attention.

**Foehn**
See Chinook.

**fog**
A term loosely applied to visible aerosols, less than 40 microns in diameter, that are liquid;
formation by condensation is sometimes implied. Basically, fog is a cloud with its base at the earth's surface. It reduces visibility to below 1 kilometer.

**fog lamps**
Car lamps, installed just above the front bumper, designed to give better lighting during foggy weather.

**fogging**
Applying a pesticide by rapidly heating the liquid chemical so that it forms very fine droplets that resemble smoke or fog. It may be used to destroy mosquitoes, black flies, and similar pests.

**FOIA**
See *Freedom of Information Act*.

**folliculitis**
The inflammation of follicles, particularly hair follicles.

**follower**
Any selected object on a display which is moved by manipulation of a control.

**fomites**
Intimate personal articles, such as clothing, a drinking glass, a handkerchief, etc.

**font**
The size and style of written type.

**font change**
A highlighting technique in which a different font, different pitch, point size, or representation of the same font, or some other alteration is used.

**food**
According to the Federal Food, Drug, and Cosmetic Act: (1) articles used for food or drink for man or other animals, (2) chewing gum, and (3) articles used for components of any such article.

**food additive**
According to the Federal Food, Drug, and Cosmetic Act: Any substance the intended use of which results or may reasonably be expected to result, directly or indirectly, in its becoming a component or otherwise affecting the characteristics of any food (including any substance intended for use in producing, manufacturing, packing, processing, preparing, treating, packaging, transporting, or holding food; and including any source of radiation intended for any such use), if such substance is not generally recognized among experts qualified by scientific training and experience to evaluate its safety as having been adequately shown through scientific procedures (or, in the case of a substance used in food prior to January 1, 1958, through either scientific procedures or experience based on common use in food) to be safe under the conditions of its intended use.

**Food and Drug Administration (FDA)**
Agency within the Department of Health and Human Services established to set safety and quality standards for foods, drugs, cosmetics, and other household substances sold as consumer products. Among the basic tasks of the FDA are research, inspection, and licensing of drugs for manufacturing and distribution. This agency is in charge of administering the Food, Drug, and Cosmetic Act.

**Food and Drug Administration Action Level (FDAAL)**
Under the Federal Food, Drug, and Cosmetic Act, as amended, concentration of a poisonous or deleterious substance in human food or animal feed at or above which FDA will take legal action to remove adulterated products from the market. Only FDAALs established for fish and shellfish apply in the Hazard Ranking System.

**food chain**
A sequence of organisms, each of which uses the next, lower member of the sequence as a food source.

**Food, Drug Cosmetic Act**
Federal Act of 1938 prohibiting the transportation in interstate commerce of adulterated or misbranded food, drugs, and cosmetics. The Act is administered by the Food and Drug Administration.

**food engineering**
The implementation of food science and technology in the manufacturing, processing, and packaging of food items.

**food poisoning**
A broad term including foodborne illnesses caused by the ingestion of foods containing microbial toxins or chemical poisons. See *also foodborne disease*. 
food waste
The organic residues generated by the handling, storage, sale, preparation, cooking, and serving of foods. Commonly called garbage.

foodborne disease
Any disease that is transmitted through food contaminated with bacteria, viruses, fungi, parasites, or even some toxic chemicals.

foot
(1) Anatomy. That bodily structure composed of the phalanges, metatarsal, cuneiform, navicular, cuboid, talus, and calcaneus bones with their associated, surrounding tissues. (2) Measurement. A unit of length in the English system; equal to 12 inches.

foot acre
One acre of coal one foot thick.

foot breadth
The maximum width of the foot measured perpendicular to its longitudinal axis. Measured with the individual standing and his/her weight distributed evenly on both feet.

foot-candle (fc)
The illumination resulting from the uniform distribution of a flux of one lumen (lm) on a surface area of one square foot. Hence, one foot candle equals one lumen per square foot.

foot control
Any control device intended for normal operation using a foot.

foot lambert
The unit of photometric brightness equal to the uniform brightness of a perfectly diffusing surface emitting or reflecting one lumen per square foot.

foot-leg
Involving both the foot and the leg, generally pertaining to sensory or other external influences on both the foot and the leg.

foot length
The maximum length of the foot measured parallel to its long axis, from the back of the heel to pternion. Measured without tissue compression, with the individual standing erect and his/her weight evenly distributed on both feet.

foot-pound
An English system measure of torque; equal to one pound of force acting at a distance of one foot from the fulcrum.

foot restraint
A platform structure which serves to immobilize one or both feet to hold an individual in position for performing a task.

footbar
A rod or molded tube which serves as a footrest for a chair when the seat pan of the chair is too high for the feet to reach the floor or another surface.

footfall
The striking of the bottom of the foot or footwear on a surface in human gait.

footlambert (fl)
a unit of luminous intensity; the luminance of a surface which receives 1.0 lumen per square foot (an outdated measure).

footprints
In the law of evidence, impressions made upon the earth, snow, or other surface by the feet of persons, or by their shoes, boots, or other foot coverings.

footrest
Any structure on which the foot may rest, usually when seated.

footrest angle
The angle between a footrest having a flat surface and the lower leg link.

footring
A tube or rod attached in a circular pattern about the legs of a stool or chair as a footrest when the seat pan is too high for the feet to reach the floor or other base surface.

footstool
A short structure which is easily portable and may be stood upon to improve one's vertical reach.

footswitch
Any type of switch which closes when the foot or some portion of the foot makes contact with the floor or ground.

footwall
Seismology. Of the two sides of a non-vertical fault, the side below the fault plane. It is called the footwall because where faults have been "filled in" with mineral deposits and then mined, this is the side on which miners walk. See also hanging wall.

footwear
Any type of material or covering worn over the foot.
for hire
Refers to a vehicle operated on behalf of or by a company that provides transport services to its customers.

for-hire carriage
Transportation of property by motor vehicle except when a) the property is transported by a person engaged in a business other than transportation; and b) the transportation is within the scope of, and furthers a primary business (other than transportation) of, the person.

for-hire motor carrier
A person engaged in the transportation of goods or passengers for compensation.

foramen
A natural opening or passage; used as a general term in anatomic nomenclature to designate such a passage, especially on or into a bone.

forbidden or not acceptable explosives
Any explosives which are forbidden or not acceptable for transportation by common carriers by rail freight, rail express, highway, or water in accordance with the regulations of the U.S. Department of Transportation.

force
(1) The push or pull that tends to impart motion to a body at rest, or to increase or diminish speed, or to change the direction of a body already in motion. (2) A physical influence exerted on an object which tends to cause a change in velocity.

force arm
See effort arm.

force feedback
Any means of providing information to an operator about the forces involved on a remote or teleoperated end effector.

force joystick
See isometric joystick.

force majeure
The title of a standard clause found in marine contracts exempting the parties for non-fulfillment of their obligations by reasons of occurrences beyond their control, such as earthquakes, floods, or war.

force plate
A system consisting of a cover plate and one or more transducers for measuring the forces or accelerations of an object either positioned on the cover or as the object strikes the cover plate. Also referred to as force platform and reactance platform.

force reflection
Providing an operator or system with tactile information about the forces/torques experienced by a remote device.

force-velocity curve
A graphical plot showing a characteristic of concentric muscular contractions in which the velocity of a muscular contraction is inversely related to the force of the contraction. May also be referred to as force-velocity relationship.

forced choice
An experimental methodology in which a subject must make a selection from one of the available choices.

forced convection
On a small scale, a form of mechanical stirring taking place when twisting eddies of air are able to mix hot surface air with the cooler air above. On a larger scale, it can be induced by the lifting of warm air along a front (frontal uplift) or along a topographic barrier (orographic uplift). See also convection.

forced draft
The positive pressure created by air being blown into a furnace or other combustion equipment by a fan or blower.

forced expiratory volume-one second (FEV-1)
The maximum volume of air that can be forced from an individual's fully inflated lungs in one second.

forced grasping
A movement disorder in the adult in which the victim grasps any object which touches his/her hand, frequently with great strength. (Note: Different from the normal grasp reflex.)

forced vital capacity (FVC)
The volume of air that can be forcibly expelled from the lungs after a full inspiration of air.
ford
The shallow part of a river which can be easily crossed.

Fordyce's disease
A congenital condition characterized by minute yellowish white papules on the oral mucosa.

fore and aft
The direction on a vessel parallel to the centerline.

fore and aft line
A line used to secure two barges end to end.

fore bay
An enclosure of the river, usually above a dam.

forearm
The radius, ulna, and all other organized tissues comprising that part of the arm from the elbow to the wrist.

forearm circumference
The surface distance around the forearm at the level at which the maximum value is obtained. Measured with the individual standing erect, the shoulder slightly abducted, and the hand relaxed with the fingers extended. May be referred to as arm circumference.

forearm circumference, elbow flexed
The maximum surface distance around the forearm with the elbow flexed 90 degrees. Measured with the shoulder flexed 90 degrees laterally (so that the upper arm is horizontal), and the fist clenched.

forearm circumference, relaxed
The maximum surface distance around the forearm. Measured with the elbow flexed 90 degrees and the hand relaxed.

forearm – forearm breadth, sitting
The horizontal linear distance from the most lateral point on the right forearm, across the body to the most lateral point on the left forearm. Measured without tissue compression, with the individual seated erect, the upper arms hanging naturally at the sides, and the elbows flexed 90 degrees while resting lightly against the torso.

forearm – hand length
The distance from the posterior elbow to the tip of the longest finger. Also referred to as elbow – fingertip length. Measured with the individual seated erect, the upper arm vertical at the side, the forearm and hand horizontal, and the fingers maximally extended.

forearm length
See radiale – stylium length.

forearm skinfold
The thickness of a vertical skinfold on the posterior midline of the forearm at the level of the forearm circumference. Measured with the individual standing erect and the arms relaxed naturally at the sides.

forefinger
See index finger.

forefinger length
See index finger length.

forefoot
The anterior portion of the foot, including the phalanges, metatarsals, cuneiform, and cuboidal bones and the soft tissues surrounding them.

forehead
That superior portion of the face from the supraorbital ridges upward and between the maximum lateral bulges of the brow ridges near the ends of the eyebrow. May be referred to as brow or frons. See also eyebrow.

forehead breadth
See frontal breadth (maximum), and frontal breadth (minimum).

foreign
With regard to commerce, refers to outside the fifty United States and the District of Columbia.

foreign air carrier
Any person other than a citizen of the United States, who undertakes directly, by lease or other arrangement, to engage in air transportation. See also foreign flag air carrier.

foreign air commerce
The carriage by aircraft of persons or property for compensation or hire, or the carriage of mail by aircraft, or the operation or navigation of aircraft in the conduct or furtherance of a business or vocation, in commerce between a place in the United States and any place outside thereof; whether such commerce moves wholly by aircraft or partially by aircraft and partially by other forms of transportation.
foreign air transportation
The carriage by aircraft of persons or property as a common carrier for compensation or hire, or the carriage of mail by aircraft, in commerce between a place in the United States and any place outside of the United States, whether that commerce moves wholly by aircraft or partially by aircraft and partially by other forms of transportation.

foreign body
Usually refers to any material that has entered and/or become imbedded in a body part (such as the eye). Examples of foreign bodies can include splinters, slivers, dirt, etc.

foreign current
A term applied to stray electric currents which may affect a signaling system, but which are not a part of the system.

foreign element
A work element which is not normally part of the work cycle and provides an interruption to it, usually with a random/unpredictable frequency of occurrence.

foreign exchange gains and losses
Gains or losses resulting from nonroutine abnormal changes in the rates of foreign exchange.

foreign flag air carrier
(1) An air carrier other than a United States flag air carrier in international air transportation. "Foreign air carrier" is a more inclusive term than "foreign flag air carrier," including those non-U.S. air carriers operating solely within their own domestic boundaries. In practice, the two terms are used interchangeably. (2) An air carrier other than a United States flag air carrier providing international air transportation. Certified in accordance with Federal Aviation Regulations Part 129. See also foreign air carrier.

foreign fleet
All reportable agency-owned motor vehicles, operated outside any State, Commonwealth, Territory or possession of the United States.

foreign freight
Movements between the United States and foreign countries and between Puerto Rico, the Virgin Islands, and foreign countries. Trade between U.S. territories and possessions (e.g., Guam, Wake, American Samoa) and foreign countries is excluded. Traffic to or from the Panama Canal Zone is included.

foreign freight forwarder
An independent business which makes shipments for exporters for a fee.

foreign mail
Mail transported outside the United States by U.S. flag carriers on behalf of any foreign government.

foreign trade
The exchange of waterborne commodity movements (imports and exports) between the United States and its territories, and foreign countries.

foreign trade zone
An isolated area, attached to a port, where facilities for docking and unloading are provided, and where foreign merchandise may be stored or manipulated pending sale or reshipment without limitation as to time and without compliance with the customs laws and regulations relating to the entry of merchandise. Most such privileges are equally available at other regular ports of entry by arrangement with U.S. Customs Bureau.

forensic
Belonging to the courts of justice.

forensic engineering
The application of the principles and practices of engineering to the elucidation of questions before courts of law. Practiced by legally qualified professional engineers who are experts in their field, by both education and experience, and who have experience in the courts and an understanding of jurisprudence. A forensic engineering engagement may require investigation, studies, evaluations, advice to counsels, reports, advisory opinions, depositions and/or testimony to assist in the resolution of disputes relating to life or property in cases before courts, or other lawful tribunals.

forensic medicine
That science which teaches the application of every branch of medical knowledge to the purposes of the law. Hence its limits are, on the one hand, the requirements of the law, and, on the other hand, the whole range of medicine. Anatomy, physiology, medicine, surgery, chemistry, physics, and botany lend
their aid as necessity arises; and in some cases all these branches of science are required to enable a court of law to arrive at a proper conclusion on a contested question affecting life or property.

**forensic pathology**
That branch of medicine dealing with diseases and disorders of the body in relation to legal principles and cases.

**forensic psychiatry**
That branch of medicine dealing with disorders of the mind in relation to legal principles and cases.

**foreseeability**
A concept in which an individual may be held liable for actions resulting in injury or damage only if he/she could be reasonably expected to foresee the risk or danger.

**foreseeable damages**
Loss that the party in breach had reason to know of when the contract was made.

**foreshock**
Any earthquake which is followed, within a short time span, by a larger earthquake in the exact same location can be labeled a "foreshock." (In the case of an earthquake swarm, this terminology is not generally applied.)

**foreshore**
The part of a seashore between high-water and low-water marks.

**forestall**
As applied to an automatic train stop or train control device, to prevent an automatic brake application by operation of an acknowledging device or by manual control of the speed of the train.

**forklift truck**
A high-powered vehicle equipped with hydraulic-driven protruding metal blades, that is used to raise and lower unitized freight and/or handle other material(s).

**form**
A display or hardcopy with organized categories for the user or operator to fill in.

**form analysis chart**
See form process chart.

**form process chart**
A flow process chart for one or more paperwork forms. Also referred to as information process analysis, functional form analysis, form analysis chart, paperwork flow chart, and procedure flow chart.

**formal rulemaking**
The process of promulgating rules based upon the formal procedures established in the Administrative Procedures Act (APA) of 1946 requiring (most notably) hearings, substantiation of evidence, and the cross-examination of witnesses.

**formaldehyde**
A colorless, pungent, irritating gas (CH$_2$O) used chiefly as a disinfectant and preservative and in synthesizing other compounds and resins.

**formant**
A resonance which is associated with vocal tract reflections in the production of sound.

**formation flight**
More than one aircraft which, by prior arrangement between the pilots, operate as a single aircraft with regard to navigation and position reporting. Separation between aircraft within the formation is the responsibility of the flight leader and the pilots of the other aircraft in the flight. This includes transition periods when aircraft within the formation are maneuvering to attain separation from each other to effect individual control and during join-up and breakaway. A **standard formation** is one in which a proximity of no more than 1 mile laterally or longitudinally and within 100 feet vertically from the flight leader is maintained by each wingman. **Nonstandard formations** are those operating under any of the following conditions: a) when the flight leader has requested and Air Traffic Control (ATC) has approved other than standard formation dimensions; b) when operating within an authorized altitude reservation (ALTRV) or under the provisions of a letter of agreement; c) when the operations are conducted in airspace specifically designed for a special activity. See also altitude reservation.
formed elements
The enclosed structures within the blood, consisting of erythrocytes, leukocytes, and platelets.

formite
Any substance that may harbor or transmit pathogenic organisms.

formulation
The substance or mixture of substances which is comprised of all active and inert ingredients in a pesticide.

formulation time
The temporal period required for the end-user and manufacturer to determine what characteristics a desired system should have.

Fortran
A high-level computer language designed for scientific and mathematical use with the name of Formula Translator and the acronym, Fortran.

forward chaining
A reasoning or control strategy in which the starting point is selected and all possible resulting states are derived from that point.

forward control
Transportation. (1) A configuration in which more than half of the engine length is rearward of the foremost point of the windshield base and the steering wheel hub is in the forward quarter of the vehicle length. (2) Vehicle with driver controls (pedals, steering wheel, instruments) located as far forward as possible. Supplied with or without body, the controls are stationary mounted as opposed to the special mountings of tilt cabs.

forward masking
A form of temporal masking in which the masking stimulus just precedes the test stimulus.

forward wing
Aviation. A forward-lifting surface of a canard configuration or tandem-wing configuration airplane. The surface may be a fixed, movable, or variable geometric surface, with or without control surfaces.

fossa
A depression in the surface of a bone.

fossil fuel
(1) Fuel, such as natural gas, petroleum, coal, etc., that originated from the remains of plant, animal, and sea life of previous geological eras. (2) Any naturally occurring organic fuel, such as petroleum, coal, and natural gas.

fossil water
See connate water.

foul bill of lading
A receipt for goods issued by a carrier with an indication that the goods were damaged when received.

foul ground
An area identified as a danger to maritime navigation where the holding qualities for an anchor are poor, or where danger exists of striking or fouling the ground or other obstructions.

fouling section
Rail Operations. The section of track between the switch points and the clearance point in a turnout.

foundation
A structural, knowledge, or economic base which enables further growth or development.

foundation garment
Underwear (an older term).

four banger
Transit (slang). Term used to describe a four-cylinder engine.

four by four
Four-speed transmission and 4-speed auxiliary transmission.

four ps
In evidence collection following an accident, the phrase given to the four common categories of people, parts, papers, and positions.

Fourier analysis
The mathematical decomposition of a complex periodic waveform into its sinusoidal
components. Often used with non-periodic waveforms to get frequency components.

**Fourteenth Amendment**

Amendment to the U.S. Constitution, ratified in 1868, creates or at least recognizes for the first time a citizenship of the United States, as distinct from that of the states; forbids the making or enforcement by any state of any laws abridging the privileges and immunities of citizens of the United States; and secures all "persons" against any state action which results in either deprivation of life, liberty, or property without due process of law, or, in denial of equal protection of the laws. This Amendment also contains provisions concerning the apportionment of representatives in Congress.

**Fourth Amendment**

Amendment of the U.S. Constitution guaranteeing people the right to be secure in their homes and protect their property against unreasonable searches and seizures and providing that no warrants shall issue except upon probable cause and then only as to specific places to be searched and persons and things to be seized.

**fovea**

A depressed region within the macula lutea of the posterior retina at which cone density is highest and the greatest visual acuity occurs. Also referred to as *fovea centralis*.

**foveal blindness**

The lack of visual capability in the center of the visual field, due to damage or other problem with the fovea or macula lutea. Also referred to as *central visual field blindness*.

**foveal vision**

That photopic sensory stimulation mediated by the fovea.

**FR**

See *Federal Register*.

**FRA**

See *Federal Railroad Administration*.

**fractionation**

Any of several processes, apart from radioactive decay, that result in change in the composition of radioactive debris.

**fracture**

A sudden break or crack in a bone or other solid material. It may be caused by trauma, by twisting due to muscle spasm or indirect loss of leverage, or by disease that results in decalcification of the bone.

**fracture control**

The application of design philosophy, analysis method, manufacturing technology, quality assurance, and operating procedures to prevent premature structural failure due to the propagation of cracks or crack-like flaws during fabrication, testing, transportation and handling, and service.

**fracture mechanics**

An engineering concept used to predict flaw growth of materials and structures containing cracks or crack-like flaws; an essential part of a fracture control plan to prevent structure failure due to flaw propagation.

**fracture toughness**

A generic term for measures of resistance to extension of a crack.

**frame**

One complete scan or image on a CRT, videotape, motion picture film, or other type of display.

**frame counter**

Any electrical, mechanical, or electromechanical device which is used to determine and/or display a count of the number of frames displayed on a film or video medium.

**frame rate**

The number of frames recorded or displayed per unit time.

**frangible navigational aid**

*Aviation.* A navigational aid whose properties allow it to fail at a specified impact load.

**Frankfort plane**

An imaginary plane through the head, used for head orientation purposes, established by the lateral extensions of a line between tragion and the lowest point of the orbit. Also referred to as *Frankfort horizontal plane*.

**fraud**

(1) An intentional perversion of truth for the purpose of inducing another in reliance upon it to part with some valuable thing belonging to him/her or to surrender a legal right. (2) A false representation of a matter of fact, whether by words or by conduct, by false or misleading allegations, or by concealment of
that which should have been disclosed, which deceives and is intended to deceive another so that he/she shall act upon it to his/her legal injury. (3) Anything calculated to deceive, whether by a single act or a combination, or by suppression of the truth, or suggestion of what is false, whether it be by direct falsehood or innuendo, by speech or silence, word of mouth, or look or gesture.

free alongside ship (FAS)
Maritime. A price quotation under which the exporter quotes a price that includes delivery of the goods to the vessel's side and within reach of its loading tackle. Subsequent risks and expenses are for the account of the buyer.

free alongside ship (FAS) value
Maritime. The value of a commodity at the port of exportation, generally including the purchase price plus all charges incurred in placing the commodity alongside the carrier at the port of exportation in the country of exportation.

free chlorine residual
Portion of the total residual chlorine remaining at the end of a specific contact time which will react as hypochlorous acid or hypochlorite ion.

free convection
See convection.

free field
See free sound field.

free-field room
An enclosed volume which provides essentially a free sound field. See also anechoic room.

free float
That calculated additional time available for an activity from the earliest possible completion time of that activity and the earliest possible beginning of the next activity linked to it in a network.

free in
Maritime. A pricing term indicating that the party who charters a vessel is responsible for the cost of loading goods onto the vessel.

free in and out
Maritime. Terms under which cost of loading and discharging cargo is borne by parties other than the vessel owner or operator.

free of particular average
A marine insurance term meaning that insurer will not allow payment for partial loss or damage to a foreign shipment.

free on board (FOB)
(1) A price quotation under which the exporter quotes a price that includes delivery of the goods on board the vessel. Subsequent risks and expenses are for the account of the buyer. (2) A transaction whereby the seller makes the product available within an agreed-upon period at a given port at a given price. It is the responsibility of the buyer to arrange for the transportation and insurance.

free on board (FOB) airport
FOB airport is based on the same principle as the ordinary FOB term. The seller's obligation includes delivering the goods to the air carrier at the airport of departure. The risk of loss or damage to the goods is transferred from the seller to the buyer when the goods have been so delivered. See also free on board.

free out (FO)
Terms under which the owner of goods is responsible for discharging costs.

free port
A restricted area at a seaport for the handling of duty-exempted import goods.

free radical
An atom or a chemically combined group of atoms which have a free electron and are very chemically reactive.

free-running rhythm
A biological rhythm without the use of entrainment cues, often resulting in a slight change of period.

free silica
Silica in the form of cristobalite, tridymite, or alpha quartz.

free sound field
A sound field in which the boundary effects are negligible over the frequencies of interest. See also far field.

free time
The amount of time that a carrier's equipment may be used without incurring additional charges.
**Free trade zone**

A port designated by the government of a country for duty-free entry of any non-prohibited goods. Merchandise may be stored, displayed, used for manufacturing, etc. within the zone and re-exported without duties.

**Freedom of Information Act (FOIA)**

Allows all U.S. citizens and residents to request any records in possession of the executive branch of the federal government. The term "records" includes documents, papers, reports, letters, films, photographs, sound recordings, computer tapes and disks. An object that cannot be reproduced is not considered a record in this case. The federal Freedom of Information Act (FOIA) covers the President's cabinet agencies, independent agencies, regulatory commissions, and government-owned corporations. Congress is exempt, as are federal courts and state and local governments. Some states and municipalities have laws modeled after the federal FOIA. The federal act includes nine exemptions that agencies may claim as a basis for withholding information. An administrative appeal can be filed that argues for disclosure based on benefits to the public vs. privacy. If a good argument is made, appellate reviewers may waive an exception.

**Freeway**

An expressway with full control of access.

**Freeze**

A condition occurring over a widespread area when the surface air temperature remains below freezing for a sufficient time to damage certain agricultural and ornamental crops. A freeze most often occurs as cold air is advected into a region, causing freezing conditions to exist in a deep layer of surface air. Also called *advection frost*.

**Freeze calculated landing time (FCLT)**

*Aviation.* A dynamic parameter number of minutes prior to the meter fix calculated time of arrival for each aircraft when the tentative calculated landing time (TCLT) is frozen and becomes an actual calculated landing time (ACLT) i.e., the vertex time of arrival (VTA) is updated and consequently the TCLT is modified as appropriate until freeze calculated landing time (FCLT) minutes prior to meter fix calculated time of arrival, at which time updating is suspended and an ACLT and a frozen meter fix crossing time (MFT) is assigned.

**Freeze protected deluge shower**

A deluge shower that is designed to operate at temperatures which would normally freeze water in the system.

**Freeze trap**

A method to collect gases/vapors by cooling the sampled air to a temperature at which the substance(s) of interest condense, and thus collect.

**Freezing drizzle**

See *freezing rain*.

**Freezing nuclei**

Any particle that has a shape similar to that of an ice crystal and allows rapid freezing of supercooled water. Such particles include certain clay minerals, meteoric dust, and ice crystals themselves.

**Freezing rain**

Rain or drizzle that falls in liquid form and then freezes upon striking a cold object or the ground. Both can produce a coating of ice on objects, which is called *glaze*.

**Freight**

(1) Property (other than express and passenger baggage) transported by air, rail, truck, seafaring vessel, or other commercial transport means. (2) Any commodity being transported.

**Freight agent**

An establishment that arranges the transportation of freight and cargo for a fee. Revenue for freight agents (also known as shipping agents or brokers) represents commissions of fees and not the gross charges for transporting goods.

**Freight all kinds (FAK)**

Goods classified FAK are usually charged higher rates than those marked with a specific classification and are frequently in a container which includes various classes of cargo.

**Freight and other transportation services**

Forwarding: Includes establishments that provide forwarding, packing, and other services incidental to transportation. Also included are horse-drawn cabs and carriages for hire.
freight container
A reusable container having a volume of 64 cubic feet or more, designed and constructed to permit being lifted with its contents intact and intended primarily for containment of packages (in unit form) during transportation.

freight forwarder
(1) An individual or company that accepts less-than-truckload (TLT) or less-than-carload (LCL) shipments from shippers and combines them into carload or truckload lots. Designated as a common carrier under the Interstate Commerce Act. (2) A broker that functions as an intermediary between shippers (consignors/consignees) and carriers. Functions performed by a freight forwarder may include receiving small shipments (e.g., less than container load) from consignors, consolidating them into larger lots, contracting with carriers for transport between ports of embarkation and debarkation, conducting documentation transactions, and arranging delivery of shipments to the consignees.

freight forwarding
Establishments primarily engaged in undertaking the transportation of goods from shippers to receivers for a charge covering the entire transportation, and in turn making use of the services of various freight carriers in effecting delivery. Establishment pays transportation charges as part of its costs of doing business and assumes responsibility for delivery of the goods. There are no direct relations between shippers and the various freight carriers performing the movement.

freight revenue
Revenues from the transportation by air of property other than passenger baggage.

freight service operating expenses
The sum of operating expenses directly assignable to freight service and an apportionment of expenses common to both freight and passenger service.

freight service revenue
Revenue from the transportation of freight, switching of freight train cars, water transfers of freight, vehicles and livestock, movement of freight trains at a rate per train mile or for a lump sum, storage of freight, demurrage, grain elevators, stockyards, and miscellaneous services and facilities in connection with the transportation of freight.

frequency
The number of cycles, revolutions, or vibrations completed per unit of time. In sound, for example, the frequency describes the rate at which complete cycles of high- and low-pressure peaks are produced. The unit of measurement is cycles per second or hertz (Hz). The normal human ear has a frequency range of 20 to 20,000 Hz at moderate sound pressure levels.

frequency distribution
The tabulation of data from the lowest to the highest, or highest to the lowest, along with the number of times each of the values was observed or occurred in the distribution.

frequency domain
The expression of a function in terms of frequency.

frequency function
See frequency distribution.

frequency masking
See simultaneous masking.

frequency of exposure
The number of times per shift, day, year, etc. that an individual is exposed to a harmful substance or physical agent.

frequency of lift
The number of times a specified mass is raised and/or lowered within a unit time. (Note: The most common time interval is one minute.)

frequency of use principle
A rule that states the most frequently used controls and displays should be placed in optimal locations.

frequency polygon
A graphical representation in which the ordinate values corresponding to abscissa values are plotted in a coordinate system and connected by straight lines.

frequency rate
Relates the injuries that occur to the hours worked during the period and expresses them in terms of a million man-hour unit.
frequency response
That range of frequencies which a system is capable of producing or a sensor is capable of detecting.

frequency response curve
A graph of the input frequency spectrum vs. output frequency spectrum for a system.

frequency spectrum
A description of the frequency components and associated amplitudes of a time series waveform.

frequency-time spectrum
See compressed spectral array.

frequent
In terms of probability of hazard or mishap occurrence, a hazard or event likely to occur numerous times during the life of an item.

fresh water
Water that generally contains less than 1,000 milligrams per liter of dissolved solids.

friable
Refers to materials that have a tendency to crumble easily. Most often used to describe the condition that exists when asbestos fibers can potentially be released and become airborne presenting a respiratory hazard.

friable asbestos-containing material
Any asbestos-containing material applied on ceilings, walls, structural members, piping, duct work, or any other part of a building which when dry may be crumbled, pulverized, or reduced to powder by hand pressure. The term includes non-friable asbestos-containing material after such previously non-friable material becomes damaged to the extent that when dry it may be crumbled, pulverized, or reduced by hand pressure.

fricative
A consonant produced by the steady frictional or turbulent passage of air through a narrowing of a segment within the vocal tract. Also called spirant.

friction
A force which opposes the motion of a body or tends to hold a stationary body in place. See also static friction and kinetic friction.

friction layer
The atmospheric layer near the surface usually extending up to about 1 km (3300 feet) where the wind is influenced by friction of the earth's surface and objects on it.

friction loss
The pressure loss in a ventilation system due to friction of the moving air on the ductwork.

Friedman two-way analysis of variance
A non-parametric statistical test using matched sample rank data to test the null hypothesis.

fringe benefit
That compensation to an employee which is not in the form of wages, salary, or bonuses.

fringe parking
An area for parking usually located outside the Central Business District (CBD) and most often used by suburban residents who work or shop downtown.

frit
The porous section at the end of a glass tube which is employed in a glass flask to breakup an air stream into small bubbles, thereby improving the absorption of air contaminants by the sorbent as air is sampled through it. Often referred to as a glass frit.

fritted bubbler
A glass frit. See frit.

frivolous
Pertaining to a lawsuit with no basis in fact, and which is based on nonsensical legal theory or intended to harass the defendant or grandstand in court.

frog
Rail Operations. A track component used at the intersection of two running rails to provide support and guidance for the wheels. It allows wheels on each rail to cross the other rail.

from
A shipping term under which price quoted applies only at the point of origin, such as ex-mill, ex-rail car, ex-barge, and the seller agrees to place the goods at the disposal of the buyer at the agreed place within a fixed period of time.

from a little open
Transit (slang). An expression meaning to depart on a new course from a point 50 yards or less from a defined object.
from foot of dike
From the end of the dike where it is attached to the shore.

from (lower) end of dike
From the outward or channel end of a dike.

frons
See forehead.

front
The transition zone between two distinct air masses.

front-end analysis
The process of determining whether or not a problem exists. Also referred to as needs assessment and discrepancy analysis.

frontal
Pertaining to the anterior portion of the body or of a body part, or the frontal plane.

frontal arc, minimum
The minimum surface distance across the forehead to the temporal crests at their points of maximum indentation. Measured with the individual sitting or standing erect and the facial muscles relaxed.

frontal bone
The flat bone making up the forehead and superior frontal portion of the skull.

frontal breadth, maximum
The horizontal linear distance between the maximum lateral bugles of the brow ridges near the ends of the eyebrow. Also referred to as forehead breadth.

frontal breadth, minimum
The horizontal linear distance across the forehead from the points of greatest indentation of the temporal crests.

frontal fog
See evaporation fog.

frontal lobe
The most anterior portion of the cerebral hemisphere, extending from the frontal pole to the central sulcus.

frontal plane
Any vertical plane at right angle to the midsagittal and horizontal planes which divides the body into anterior and posterior portions. Often referred to as coronal plane.

frontal thunderstorms
Thunderstorms that form in response to forced convection (forced lifting) along a front. Most go through a cycle similar to those of air mass thunderstorms.

frontal wave
A wavelike deformation along a front in the lower levels of the atmosphere. Those that develop into storms are termed unstable waves, while those that do not are called stable waves.

frontogenesis
A meteorological term for the formation, strengthening, or regeneration of a front.

frontolysis
A meteorological term for the weakening or dissipation of a front.

frost
A covering of ice produced by deposition (sublimation) on exposed surfaces when the air temperature falls below the frost point (the dew point is below freezing). Also called hoarfrost.

frost point
See dew point.

frostbite
The destruction of tissue resulting from exposure to extreme cold or contact with extremely cold objects.

frozen dew
The transformation of liquid dew into tiny beads of ice when the air temperature drops below freezing.

frozen section
A specimen of tissue that has been quick-frozen, cut by microtome, and stained immediately for rapid diagnosis of possible malignant lesions. A specimen processed in this manner is not satisfactory for detailed study of the cells, but it is valuable because it is quick and gives the surgeon immediate information regarding the malignancy of a piece of tissue.

fructose
A colorless or white crystalline sugar; also called levulose and fruit sugar. It is used in solution as a fluid and nutrient replenisher.

FSG
FSS
See Flight Service Station.

FTA
See fault tree analysis. See also Federal Transit Administration.

FTP
See File Transfer Protocol.

fuel
The primary fuel or energy source delivered to a residential site. It may be converted to some other form of energy at the site. Electricity is included as a fuel. Other primary fuels are coal, fuel oil, kerosene, liquefied petroleum gas (LPG), natural gas, wood, and solar.

fuel cell
(1) A device for converting chemical energy into electrical energy. (2) A device that produces electrical energy directly from the controlled electrochemical oxidation of the fuel. It does not contain an intermediate heat cycle, as do most other electrical generation techniques.

fuel code
A 2-digit numeric code that identifies the type of fuel used. The code identifies regular (gasoline and diesel) fuels, alternative fuels such as natural gas and methanol, and vehicles able to operate on a combination of these fuels (regular and alternative).

fuel oil
A liquid petroleum product less volatile than gasoline, used as an energy source. Fuel oil includes distillate fuel oil (No. 1, No. 2, and No. 4), residual fuel oil (No. 5 and No. 6), and kerosene.

fuel oil, No. 1
A light distillate fuel oil intended for use in vaporizing pot-type burners. ASTM Specification D 396 specifies for this grade maximum distillation temperature of 400 degrees Fahrenheit at the 10 percent point and 550 degrees Fahrenheit at the 90 percent point, and kinematic viscosity between 1.4 and 2.2 centistoke at 100 degrees Fahrenheit.

fuel oil, No. 2
A distillate fuel oil for use in atomizing type burners for domestic heating or for moderate capacity commercial/industrial burner units. ASTM Specification D 396 specifies for this grade distillation temperature at the 90 percent point between 540 and 640 degrees Fahrenheit, and kinematic viscosity between 2.0 and 3.6 centistoke at 100 degrees Fahrenheit.

fuel oil, No. 4
A fuel oil for commercial burner installations not equipped for preheating facilities. It is a blend of distillate fuel oil and residual fuel oil stocks that conform to ASTM Specification D 396 or Federal Specification VV-F-815C; its kinematic viscosity is between 5.8 and 26.4 centistoke at 100 degrees Fahrenheit. Also included is No. 4-D, a fuel oil for lower and medium speed diesel engines that conforms to ASTM Specification D 975.
fuel remaining
_Aviation_. A phrase used by either pilots or controllers when relating to the fuel remaining on board until actual fuel exhaustion. When transmitting such information in response to either a controller question or pilot-initiated cautionary advisory to air traffic control, pilots will state the appropriate number of minutes the flight can continue with the fuel remaining. All reserve fuel should be included in the time stated, as should an allowance for established fuel gauge system error. _See also minimum fuel._

fuel siphoning
The unintentional release of fuel caused by overflow, puncture, loose cap, etc.

fuel tank
A tank other than a cargo tank, used to transport flammable or combustible liquid, or compressed gas for the purpose of supplying fuel for propulsion of the transport vehicle to which it is attached, or for the operation of other equipment on the transport vehicle.

fuel tank fitting
Any removable device affixed to an opening in the fuel tank with the exception of the filler cap.

fueling
Any stage of the fueling operation; primarily concerned with introduction of explosive or combustible vapors or liquids on board.

fugitive emissions
Emissions that are not caught by a capture system. The release of airborne contaminants into the surrounding air other than through a stack, such as the sealing mechanisms of sources including pumps, compressors, flanges, valves, and other type seals. Thus, fugitive emissions result from an equipment leak and are characterized by a diffuse release of materials such as VOCs, hydrocarbons, etc. into the atmosphere. The EPA defines fugitive emissions as those emissions that do not occur as part of the normal operation of the plant.

fugitive releases
Under ISO 14000 criteria, emissions to air, water, or land that are not controlled.

fulcrum
A fixed point representing the axis about which a lever may operate.

full berth terms (FBT)
_Maritime_. Terms under which cost of loading and discharge is included in the steamship rate quoted. Ship owner pays loading and discharge costs.

full double
_Maritime_. The maximum tow that can be locked.

full facepiece respirator
A respirator which covers the wearer's entire face from the hairline to the chin.

full hearing
Embraces not only the right to present evidence, but also a reasonable opportunity to know the claims of the opposing party, and to meet them.

full radiator
_See blackbody_.

full scale
The maximum measurement value or maximum limit for a given range on an instrument.

full shift
The regularly scheduled work period, typically of 8 hours duration.

full-time employment
Having a job consisting of about 35 or more hours per week on a regular basis.

full trailer
(1) Any motor vehicle other than a pole trailer which is designed to be drawn by another motor vehicle and so constructed that no part of its weight, except for the towing device, rests upon the self-propelled towing unit. A semitrailer equipped with an auxiliary front axle (converter dolly) shall be considered a full trailer. (2) A truck-trailer with front and rear axles. The load weight is distributed over both the front axle(s) and rear axle(s).

fullmount
A smaller vehicle mounted completely on the frame of either the first or last vehicle in a saddlemount combination.

fumble
An unintentional sensory-motor error.
fume  
Small solid particles generated following the volatilization of a metal or plastic when their gaseous state condenses quickly upon contact with cooler air. Welding, for example, causes the volatilization of metals into a gas followed by condensation upon contact with cooler air. This creates welding fumes typically on the order of 0.1-1 micrometer in diameter. In popular usage, the word *fume* is often incorrectly used to describe virtually any type of air contaminant.

**fume cupboard**  
British term for laboratory fume hood.

**fume fever**  
See *metal fume fever*.

**fumigant**  
A pesticide that is vaporized to kill pests. Used in buildings and greenhouses.

**function**  
(1) *General*. That activity which a product or system is to carry out. (2) *Computing*. A software-supported capability to aid the user in performing a task or operation.

**function area**  
*Computing*. A portion of a screen display reserved by a given application for a specific purpose.

**function key**  
A key which directs the computer to perform some specific function when pressed. See also *fixed function key*.

**Functional Analysis System Technique (FAST)**  
A diagramming process which permits a hierarchy of two-word function definitions derived from a product's consequences and cause.

**functional anatomy**  
The study of the body and its component parts, relating them to biomechanical and/or physiological function.

**functional anthropometry**  
See *dynamic anthropometry*.

**functional capacity level rating scale**  
A seven-point classification for grouping individuals, especially the elderly, according to their ability to perform the activities of daily living.

**functional deafness**  
See *psychogenic deafness*.

**functional electrical stimulation**  
See *electrical stimulation*.

**functional equivalent**  
Term used to describe EPA's decision-making process and its relationship to the environmental review conducted under the National Environmental Policy Act (NEPA). A review is considered functionally equivalent when it addresses the substantive components of a NEPA review.

**functional flow logic diagram**  
A technique for determining what operations or processes are necessary to achieve certain objectives from a system.

**functional form analysis**  
See *form process chart*.

**functional hazard analysis**  
See *fault hazard analysis*.

**functional impact**  
A purposeful impact in fulfilling a useful task. See also *beneficial impact*.

**functional impairment**  
A reduced ability to perform certain functions. May also be called *functional limitation*.

**functional injury**  
A form of trauma not readily detectable by visual examination, but which is indicated by one or more variables measuring a functional limitation.

**functional leg length**  
The linear distance from the back at waist level to the heel, measured along the longitudinal axis of the leg. Measured with the individual sitting erect on the edge of a chair and the knee fully extended.

**functional limitation**  
See *functional impairment*.

**functional principle**  
See *functionality principle*.

**functional reach**  
See *thumb-tip reach*.

**functional residual capacity (FRC)**  
That volume of air which remains in the lungs after a normal exhalation.
**functional vibration**
An intentional vibration generated to accomplish some end.

**functionality principle**
A rule stating that displays and controls which have related functions should be grouped together.

**fundamental frequency**
In the study of acoustics, the lowest periodic frequency component present in a complex spectrum.

**fundamental motion**
See *therblig*.

**fundus**
The bottom or base of anything; used in anatomic nomenclature as a general term to designate the bottom or base of an organ, or the part of a hollow organ farthest from its mouth.

**fungi**
See *fungus*.

**fungicide**
Pesticides which are used to control, prevent, or destroy fungi.

**fungus**
A general term used to describe the diverse morphological forms of yeast, rust, mildew, and mold. Any non-chlorophyll-bearing thallophyte (that is, any non-chlorophyll-bearing plant of a lower order than mosses and liverworts). *Fungi* (plural) are *heterotrophs* and obtain nourishment by absorption usually from dead or decaying organic matter. Some fungi are beneficial in foods and pharmaceutical development while other can cause pulmonary diseases. Fungi are found in soil, water, and air. Also referred to as *mold*.

**funnel chest**
A deformity of the front of the chest wall, characterized by a funnel-shaped depression with its apex over the lower end of the sternum. Also called *pectus excavatum*.

**funnel cloud**
A rotating cone-like cloud that extends downward from the base of a thunderstorm. When it reaches the surface it is called a *tornado*. If it touches a body of water (lake, pond, ocean, etc.) it is referred to as a *water-spout*.

**furniture van body**
Truck body designed for the transportation of household goods; usually a van of drop-frame construction.

**further clearance time**
*Aviation*. The time a pilot can expect to receive clearance beyond a clearance limit.

**furuncle**
A focal, suppurative inflammation of the skin and subcutaneous tissue, enclosing a central slough or "core." See also *boil*.

**fuscin**
A brown pigment of the retinal epithelium.

**fuse**
(1) *Electrical*. Pertaining to systems over 600 volts (nominal), an overcurrent protective device with a circuit-opening fusible part that is heated and severed by the passage of overcurrent through it. A fuse comprises all the parts that form a unit capable of performing the prescribed functions. It may or may not be the complete device necessary to connect it into an electrical circuit. (2) *Explosives*. A system used to initiate an explosive train.

**fusiform neuron**
See *gamma motor neuron*.

**fusion**
(1) *Nuclear Energy*. A nuclear reaction characterized by the joining together of light nuclei to form heavier nuclei. See also *nuclear fusion, binocular fusion, and flicker fusion*. (2) *Anatomy*. The combining or blending of distinct bodies into one, such as the fusion into a single image of the separate impressions received by the two eyes, or the surgical process of making a formerly movable structure (joint) immovable.

**fusus**
(1) A spindle-shaped structure. (2) A minute air vesicle in a hair shaft.

**future damages**
Those sums awarded to an injured party for, among other things, residuals or future effects of an injury which have reduced the capability of an individual to function as a whole person, future pain and suffering, loss or impairment of earning capacity, and future medical expenses.
fuzzy logic
The use of approximations in reasoning rather than exact, discrete points or information.

FVC
See forced vital capacity.

FWPCA
See Federal Water Pollution Control Act.
g
Abbreviation for gram(s).

g force
That force experienced on the body due to acceleration(s) from vehicular or other motion. Usually expressed as some multiple or fraction of g.

g force syndrome
See acceleration syndrome (an older term).

g-induced loss of consciousness
See gravity-induced loss of consciousness.

g-load
That loading imposed on the body due to gravity of other accelerations.

g-tolerance
A measure of the ability to withstand positive acceleration(s) without a system failure or blackout.

GAC

GADO
See General Aviation District Office.

gadolinium
A chemical element, atomic number 64, atomic weight 157.25, symbol Gd.


gag
(1) A surgical device for holding the mouth open. (2) To retch, or strive to vomit. (3) Something placed in or around the mouth with the specific intent of preventing speech (usually placed against a person's will).

gag order
An unruly defendant at trial may be constitutionally bound and gagged to prevent further interruptions in the trial. The term may also refer to an order by the court, in a trial with a great deal of notoriety, directed to attorneys and witnesses, to not discuss the case with reporters (such an order being felt necessary to assure the defendant of a fair trial). Term also refers to order of the court directed to reporters to not report court proceedings, or certain aspects thereof.

gain
(1) In instrumentation, the ratio of the signal output to input. Gain is frequently referred to as span. (2) The constant multiplier in the numerator of a transfer function.

gain sharing
Any means through which an employee receives benefit in wages from his greater than standard production rates.

gainful employment
In general, any calling, occupation, profession or work which one may or is able to profitably pursue. Within a disability clause of an insurance policy, the term means ordinary employment of the particular insured, or such other employment, if any, as the insured may fairly be expected to follow.


gait
The mobility style using an individual's or robotic legs. Many clinical types of gaits have been identified. See also walk, run, jog, and limp.

gait analysis
The study of gait. Usually with the intent to determine mechanisms or quantify disorders.

gal
Common abbreviation for gallon(s).

galactic cosmic radiation
That cosmic background radiation, consisting of extremely high energy particles, which comes from outside the solar system.

galactose
A monosaccharide derived from lactose.

gallbladder
A small sac-like organ located below the liver. It serves as a storage place for bile. The gallbladder may be subject to such disorders as inflammation and the formation of gallstones. Acute inflammation of the gallbladder causes severe pain and tenderness in the right upper abdomen, accompanied by fever, nausea, prostration, and sometimes jaundice. If the inflammation does not subside quickly, the gallbladder must be removed before it becomes gangrenous and ruptures. Chronic inflammation of the gallbladder may cause habitual indigestion, accompanied by flatulence, and nausea. The indigestion is most evident after heavy meals or meals of fatty foods. There may also be repeated at-
tacks of pain in the right upper abdomen. These may be very brief or may last as long as several hours. Gallstones are often present. The condition may respond to conservative treatment with diet and medications or it may require surgical removal of the gallbladder, especially if there are gallstones.

galley
That location on certain ships in which food is prepared for consumption. See also kitchen.

gallon
A volumetric measure equal to 4 quarts (231 cubic inches) used to measure fuel oil. One barrel equals 42 gallons. See also barrel.

gallstone
A stone-like mass, called a calculus, that forms in the gallbladder. The presence of gallstones is known medically as cholecystitis. Their cause is unknown, although there is evidence of a connection between gallstones and obesity. They are most common in women after pregnancy and in men and women after the age of 35. Gallstones may be present for years without causing trouble. The usual symptoms, however, are vague discomfort and pain in the upper abdomen. There may be indigestion and nausea, especially after eating fatty foods. Either directly or by use of a dye introduced into the gallbladder, x-rays will generally reveal the presence of gallstones. The most common complication of gallstones occurs when one of the stones escapes from the gallbladder and travels along the common bile duct, where it may lodge, blocking the flow of bile to the intestine and causing obstructive jaundice. This condition must be corrected by surgery before liver damage occurs. When a gallstone travels through or obstructs a bile duct it can cause severe biliary colic, probably the most severe pain that can be experienced. The pain is located in the upper right quadrant of the abdomen and radiates through to the scapula.

galoshes
A type of waterproof footwear worn external to the shoes.

galvanic current
Direct current from an electricity source, usually a battery (an outdated term).

galvanic skin reflex
See skin resistance response.

galvanic skin response
See skin resistance response.

galvanometer
An electrical instrument for measuring small electric currents.

galvo
See metal fume fever.

game fish
Species like trout, salmon, or bass, caught for sport. Many of them show more sensitivity to environmental change than "rough" fish.

gamma
A unit of magnetic field strength.

gamma angle
The angle formed by the intersection of the optical axis and the visual axis (line of sight), usually about 4º.

gamma efferent
See gamma motor neuron.

gamma globulin
A plasma protein developed in the lymphoid tissues and reticuloendothelial system in response to invasion by harmful agents such as bacteria, viruses, and toxins.

gamma motor neuron
An A-class motor neuron in the Erlanger-Gasse classification system having a medium conduction velocity which innervates muscle spindle intrafusal fibers and is involved in regulating muscle activity. Also referred to as gamma efferent and fusiform neuron.

gamma ray
Electromagnetic radiation of high energy originating in atomic nuclei and accompanying many nuclear reactions (fission, radioactivity, and neutron capture). Physically, gamma rays are identical to x-rays of high energy; however, x-rays do not originate from atomic nuclei. Gamma rays are true rays of energy in contrast to alpha and beta radiation. The properties are similar to x-rays and other electromagnetic waves. They are the most penetrating waves of radiant nuclear energy.
but can be blocked by dense materials such as lead. See also x-ray.

gamma ray irradiation
A process to reduce pathogens in solid waste by irradiating sludge with gamma rays from certain isotopes.

gang chart
A multiple activity process chart used for coordinating work crews.

ganged controls
A set of controls which are grouped or stacked on a single axis, usually having a different outside diameter.

ganglion
(1) A mass of human or animal tissue-containing nerve cells (neurons). (2) A knot or knot-like mass; used in anatomic nomenclature as a general term to designate a group of nerve cell bodies located outside the central nervous system. (3) A form of cystic tumor occurring on an aponeurosis or tendon, as in the wrist.

gangrene
(1) An infection caused by an anaerobic bacteria resulting in the destruction of body tissue. (2) The death and putrefaction of body tissue, caused by the stoppage of circulation to an area, often caused by infection or injury. There are three types of gangrene: moist, dry, and gas gangrene. Moist and dry gangrene result from loss of blood circulation due to various causes; gas gangrene occurs in wounds infected by species of Clostridium that break down tissue by gas production and by toxins.

gangway
Any ramp-like or stair-like means of access provided to enable personnel to board or leave a vessel, including accommodation ladders, gangplanks, and brows.

gantry
A frame structure raised on side supports so as to span over or around something.

gantry crane
A crane-hoisting machine mounted on a frame or structure spanning an intervening space. Used primarily in modern container-handling ports.

Gantt chart
A two-dimensional graphical representation of the planned activities and the dates/times at which each of those activities should be completed over the duration of a project or other activity.

Gantt task and bonus plan
A wage incentive plan in which employees are rewarded with a percentage bonus for higher than normal performance.

ganzfeld
A homogeneous, uniformly illuminated, formless visual field.

GAO
See General Accounting Office.

gap
Low point or opening between hills or mountains or in a ridge or mountain range.

gaps analysis
An assessment of an organization’s current management methods, techniques, and systems to determine its conformance to standards and other requirements, such as ISO 14000.

garage
A space large enough to accommodate a car, with a door opening at least six feet wide and seven feet high. "Attached" means it is under part or all of the house or it shares part of a wall in common with the house. Not included are carports, barns, or buildings (not connected to the house) or storage space for golf carts or motorcycles.

garbage
See food waste.

garbage and trash collection
Establishments that are primarily engaged in collecting and transporting garbage, trash, and refuse, within a city, town, or other local area, including adjoining towns and suburban areas.

garbage in/garbage out (GIGO)
Computing. A phrase indicating that if errors are made in computer input, errors will be present in the output, even if the programming and logic are correct.

garment
Any piece of clothing intended for wear over one or more body parts.
garment design

The development of a garment, ideally with consideration given to size, style, color, patterns, fabric types, layering, and insulation value.

gas

(1) A thin fluid, like air, capable of indefinite expansion but convertible by compression and cooling into a liquid and eventually a solid. Gases may be either elements (such as argon) or compounds (such as carbon dioxide). (2) A state of matter in which the material has very low density and viscosity, and can expand and contract greatly in response to changes in temperature and pressure. A gas easily diffuses into other gases, readily and uniformly distributing itself throughout any container. (3) Except when designated as inert, natural gas, other flammable gas, or gas which is toxic or corrosive. (4) A non-solid, non-liquid combustible energy source that includes natural gas, coke-oven gas, blast-furnace gas, and refinery gas.

gas amplification

As applied to gas-ionization radiation-detection instruments, the ratio of the charge collected to the charge produced by the initial ionizing event.

gas chromatograph-mass spectrometer

Refers to both an analytical method, as well as the apparatus used in the analysis. The gas chromatograph serves to separate the components of the sample and the mass spectrometer serves to identify then by exposing the eluted components to a beam of electrons which causes ionization to occur. The ions produced are accelerated by an electric impulse, passed through a magnetic field, separated, and identified on their mass. Often referred to simply as GC-MS or GC-Mass Spec.

gas chromatography (GC)

An analytical chemical procedure involving passing a sample through a column of specific make-up to separate the components of the sample, enabling them to elute, or pass out of the column separately and be detected and quantified by one or more detectors such as a flame ionization detector, thermal conductivity detector, electron capture detector, etc.

gas discharge lamp

A lamp which produces light at specific wavelengths of the spectrum by electrical excitation of the gas within the lamp. Also called gaseous discharge lamp.

gas distribution company

Company which obtains the major portion of its gas operating revenues from the operation of a retail gas distribution system, and which operates no transmission system other than incidental connections within its own system or to the system of another company.

gas exchange

The diffusion of gases through a membrane or other porous material.

gas-forming bacteria

Organisms that ferment lactose in foods or other carbohydrates producing both acid and gas, which may render a food product unacceptable.

gas free

A tank, compartment, or other type containment or area is considered to be gas free when it has been tested, using appropriate instruments, and found to be sufficiently free, at the time of the test, of toxic or explosive gases or vapors for a specified purpose.

gas frit

A sintered or fritted glass surface which is designed to break up an air stream into small bubbles in order to increase the contact of the air with a liquid sorbent, thereby improving the absorption of specific gaseous contaminants present in the air. See also frit.

gas guzzler tax

Originates from the 1978 Energy Tax Act (Public Law 95418). A new car purchaser is required to pay the tax if the car purchased has a combined city/highway fuel economy rating that is below the standard for that year. For model years 1986 and later, the standard is 22.5 mpg.

gas laser

A type of laser in which the laser action takes place in a gas medium, such as carbon dioxide.
gas law
The thermodynamic law applied to a perfect gas that relates the pressure of the gas to its density and absolute temperature.

gas mask
A full-face respirator equipped with an air-purifying cartridge or canister that removes contaminants and renders air breathable to the user. (Not for use in oxygen deficient atmospheres.)

gas pressure
The force, generally designated in pounds per square inch (psi), that is exerted by a gas on its surroundings.

gas sorption
Devices used to reduce levels of airborne gaseous compounds by passing air through materials that extract gases. The performance of a solid sorbent is dependent on the airflow rate, concentration of the pollutants, presence of other gases or vapors, and other factors.

gas tension
The partial pressure of a gas.

gas test
An analysis of the air to detect unsafe concentrations of toxic or explosive gases and/or vapors.

gas/vapor detection instrument
An assembly of electrical, mechanical, and often chemical components that senses and responds to the presence of a gas/vapor in air mixtures.

gaseous agent
A fire extinguishing agent which is in the gaseous state at normal room temperature and pressure. It has low viscosity, can expand or contract with changes in pressure and temperature, and has the ability to diffuse readily and to distribute itself uniformly throughout an enclosure.

gasification
Conversion of solid material such as coal into a gas for use as a fuel.

gasohol
A blend of finished motor gasoline (leaded or unleaded) and alcohol (generally ethanol but sometimes methanol) limited to 10 percent by volume of alcohol. Gasohol is included in finished leaded and unleaded motor gasoline. See also fuel and gasoline.

gasoline
(1) A blend of light hydrocarbon fractions of relatively high antiknock value, with proper volatility, clean burning characteristics, additives to prevent rust and oxidation, and sufficiently high octane rating to prevent knocking. Gasoline typically contains some benzene. (2) A complex mixture of relatively volatile hydrocarbons, with or without small quantities of additives, obtained by blending appropriate refinery streams to form a fuel suitable for use in spark ignition engines. Motor gasoline includes both leaded or unleaded grades of finished motor gasoline, blending components, and gasohol. See also fuel, gasohol, and kerosene.

gasoline aviation/gasoline blending components
Naphthas that will be used for blending or compounding into finished aviation gasoline (e.g., straight-run gasoline, alkylate, reformate, benzene, toluene, and xylene). Excludes oxygenates (alcohols, ethers), butane, and pentanes plus. Oxygenates are reported as other hydrocarbons, hydrogen, and oxygenates.

gastric
Pertaining to the stomach.

gastritis
Chronic or acute inflammation of the stomach.

gastrocolitis
Inflammation of the stomach and colon.

gastrocnemius muscle
The large voluntary skeletal muscle in the posterior lower leg which forms a majority of the calf.

gastroenteritis
Inflammation of the mucous membrane of the stomach and intestines that may be caused by various bacteria or viruses. Symptoms may include diarrhea, abdominal cramps, nausea, vomiting, fever, malaise, muscle ache, and fatigue.

gastrointestinal tract
The system consisting of the stomach, intestines, and related organs. Commonly referred to as the GI tract.
gastroscopy
An endoscope especially designed for passage into the stomach to permit examination of its interior.

GATB
See general aptitude test battery.

gate
A structure that may be swung, drawn, or lowered to block an entrance or passageway.

gate dam
A type of opening in a dam whereby the water passes over the top.

gate hold procedure
Procedures at selected airports to hold aircraft at the gate or other ground location whenever departure delays exceed or are anticipated to exceed 16 minutes. The sequence for departure will be maintained in accordance with initial call-up unless modified by flow control restrictions. Pilots should monitor the ground control and clearance delivery frequency for engine start/taxi advisories or new proposed start/taxi time if the delay changes.

gateway
In the context of travel activities, gateway refers to a major airport or seaport. Internationally, gateway can also mean the port where customs clearance takes place.

gathering line
A pipeline 219.1 mm (8 5/8 inches) or less nominal diameter that transports petroleum from a production facility.

gauge
Marine Navigation. A scale graduated in tenths of a foot which indicates the water level or river stage.

gauge pressure
(1) The pressure with respect to atmospheric pressure, or above atmospheric pressure as indicated on the appropriate pressure gauge. (2) The difference between two absolute pressures, one of which is usually atmospheric pressure

gauging station
A structure used to measure the characteristics of a hydrographic feature.

gauss
The centimeter-gram-second electromagnetic unit of magnetic flux density, equal to one Maxwell per square centimeter (an older term). Also referred to as abtesla. See also Maxwell.

Gaussian distribution
Pertaining to or having the appearance of a normal distribution. See normal distribution.

Gaussian noise
See white noise.

gavage
Dosing an animal by introducing a test material through a tube into the stomach.

GAWR
See gross axle weight rating.

gaze
To look in one direction for an extended period of time.

GB
Gigabyte – approximately one billion bytes.

GC
See gas chromatography. Also abbreviation for gas chromatograph.

GCA
See ground controlled approach.

GC-ECD
Gas chromatography-electron capture detector.

GC-FID
Gas chromatography-flame ionization detector.

GC-FPD
Gas chromatography-flame photometric detector.

GC-MS
See gas chromatograph-mass spectrometer.

GC-PID
Gas chromatography-photoionization detector.

GC-TCD
Gas chromatography-thermal conductivity detector.

GCW
See gross combination weight.

GCWR
See gross combination weight rating.

GDP
See gross domestic product.
**gear banger**
Transit (slang). Driver who grinds gears when shifting.

**gear jammer**
Transit (slang). One who constantly clashes the gears.

**gear ratio**
The number of revolutions a driving gear requires to turn a driven gear one revolution. For a pair of gears, the ratio is found by dividing the number of teeth on the driven gear by the number of teeth on the driving gear.

**Geiger counter**
An electrical device that detects the presence of certain types of radioactivity. It consists of a needle-like electrode inside a hollow metallic cylinder filled with gas which, when ionized, sets up a current in an electrical field.

**Geiger-Mueller counter**
A refined version of the Geiger counter that has an amplifying system and is used for detecting and measuring radioactivity.

**GEMI**
See **Global Environmental Management Institute**.

**gender**
(1) Referring to feminine, masculine, or neuter terms in a language. (2) A classification for the male or female of the species. Preferred by some to the term **sex** when referring to the male and female. See also **sex**.

**gene**
(1) A functional unit of heredity that occupies a specific location on a chromosome that is capable of producing itself exactly at each cell division, and can direct the formation of an enzyme or other protein. (2) A length of DNA that directs the synthesis of a protein.

**gene library**
A collection of DNA fragments from cells or organisms. So far, no simple way of sorting the contents of gene libraries has been devised. However, DNA pieces can be moved into bacterial cells where sorting according to gene function becomes feasible.

**General Accounting Office (GAO)**
The GAO of the federal government has the following basic purposes: Assist the Congress, its committees, and its members to carry out their legislative and oversight responsibilities, consistent with its role as an independent nonpolitical agency in the legislative branch; carry out legal, accounting, auditing, and claims settlement functions with respect to federal government programs and operations as assigned by the Congress; and make recommendations designed to make government operations more efficient and effective. The GAO is under the control and direction of the Comptroller General of the United States and the Deputy Comptroller General of the United States, appointed by the President with the advice and consent of the Senate for a term of 15 years.

**general administration**
Transit. All activities associated with the general administration of the transit system, including transit system development, injuries and damages, safety, personnel administration, legal services, insurance, data processing, finance and accounting, purchasing and stores, engineering, real estate management, office management and services, customer services, promotion, market research, and planning.

**General and Administrative (G&A) expenses**
Those expenses of a general corporate nature and expenses incurred in performing activities which contribute to more than a single operating function such as general financial accounting activities, purchasing activities, representation at law, and other general operational administration not directly applicable to a particular function. In the Transportation Industry, for example, passenger service, aircraft and traffic servicing, and promotion and sales expenses are included for certain small air carriers.

**general aptitude test battery (GATB)**
A commonly used test for determining general intelligence, numerical, verbal, and spatial skills, motor coordination, finger and manual dexterity, and clerical perception.

**general average**
A general loss voluntarily incurred to save all interest involved in a common maritime adventure from an impending peril including hull, cargo, and freight at risk.
general aviation
(1) Movements of aircraft and helicopters belonging to companies with an air taxi or air work license; an individual, a flying club or a company whose main objective is not to provide revenue passenger transport. (2) All civil flying except that of air carriers. (3) That portion of civil aviation which encompasses all facets of aviation except air carriers. (4) All civil aviation activity except that of air carriers certificated in accordance with Federal Aviation Regulations (FAR) Parts 121, 123, 127, and 135. The types of aircraft used in general aviation activities cover a wide spectrum from corporate multi-engine jet aircraft piloted by professional crews to amateur-built single engine piston acrobatic planes, balloons, and dirigibles.

general aviation airport
Any airport which is used or to be used for public purposes, under the control of a public agency, the landing area of which is publicly owned.

General Aviation Crashworthiness Project
An effort sponsored by the National Transportation Safety Board which was intended to improve the crashworthiness of small airplanes.

General Aviation District Office (GADO)
A Federal Aviation Administration (FAA) field office serving a designated geographical area and staffed with Flight Standards personnel who have the responsibility for serving the aviation industry and the general public on all matters relating to the certification and operation of general aviation aircraft.

general aviation operations
Takeoffs and landings of all civil aircraft, except those classified as air carriers or air taxis. See also general aviation.

general cargo
(1) General cargo consists of those products or commodities such as timber, structural steel, rolled newsprint, concrete forms, agricultural equipment that are not conducive to packaging or unitization. Break-bulk cargo (e.g., packaged products such as lubricants and cereal) are often regarded as a subdivision of general cargo. (2) The tonnes of cargo assessed at the general rate of tolls as defined in the St. Lawrence Seaway Tariff of Tolls.

general cargo ship
A ship configured to accommodate general, break-bulk, and containerized cargoes. Cargo handling operations are labor intensive and conducted with either ship's cranes or jib cranes onshore. These ships traditionally have numerous holds located on several decks, have smaller hatches than bulk carriers or containerships, and are usually equipped with a boom or crane positioned at each hatch cover.

general circulation of the atmosphere
Large-scale atmospheric motions over the entire earth.

general contractor
One who contracts for the construction of an entire building or project, rather than for a portion of the work. The general contractor hires subcontractors (e.g., plumbing, electrical, carpentry, etc.), coordinates all the work, and is responsible for ensuring payment to the subcontractors. Also called prime contractor. See also contractor.

general damages
Damages that are the immediate, direct, and proximate result of the wrongful act that is subject to a complaint.

General Duty Clause
Refers to Section 5(a)(1) of the Occupational Safety and Health Act of 1970, which states: "Each employer shall furnish to each of his employees employment and a place of employment which are free from recognized hazards that are causing or are likely to cause death or serious physical harm to his employees, and shall comply with the occupational safety and health standards promulgated under this Act." It is often cited by OSHA to cover hazards for which a specific Standard or Regulation does not yet exist.

general duty clause violation
Under the Occupational Safety and Health Act, a violation of the general duty clause exists when OSHA can show that the hazard is a recognized hazard, the employer failed to render its workplace free from the recognized hazard, the occurrence of an accident or adverse health effect was reasonably foreseeable, the likely consequence of the incident (accident or adverse effect) was death or a
form of serious physical harm, and there exists feasible means to correct the hazard.

general environment
With regard to ionizing radiation, the total terrestrial, atmospheric, and aquatic environment outside sites within which any activity, operation, or process authorized by a general or special license is performed.

general exhaust ventilation
A mechanical system for exhausting air from a work area thereby reducing the contaminant concentration by dilution. See also dilution ventilation system.

general export license
Authorization to export without specific documentary approval.

general freight carrier
(1) A carrier which handles a wide variety of commodities. (2) Trucking company engaged in shipping packaged, boxed, and palletized goods that can be transported in standard, enclosed tractor-trailers, generally 40 to 48 feet in length.

general hearing
The ability to detect sound and/or discriminate between sounds over a wide range of pitch and loudness (an older term).

General Industry Standard (GIS)
See OSHA General Industry Standard.

general law
A law that affects the community at large. A general law, as distinguished from one that is special or local, is a law that embraces a class of subjects or places, and does not omit any subject or place naturally belonging to such class.

general license
As pertains to ionizing radiation, a license issued by the Nuclear Regulatory Commission (NRC), or an Agreement State, for the possession and use of certain radioactive materials, often for small quantities, for which a specific license is not required. Individuals are automatically licensed when they buy or obtain a radioactive material from a vendor who has a license from the NRC to sell products containing small amounts of some radioactive materials.

general lighting
The approximately uniform background illumination within a specific area or volume.

general permit
A permit applicable to a class or category of dischargers.

general-use snap switch
See switch (2).

general-use switch
See switch (1).

general utility, stage I airport
This type of airport serves all small airplanes. Precision approach operations are not usually anticipated. This airport is designed for airplanes in Airport Reference Code B-II.

general utility, stage II airport
This type of airport serves large airplanes in Aircraft Approach Categories A and B and usually has the capability for precision approach operations. This airport is normally designed for Airport Reference Code B-III.

general ventilation
This term is used synonymously with dilution ventilation. General ventilation is used typically for the control of temperature, humidity, or odors.

general warehousing and storage
Those establishments primarily engaged in the warehousing and storage of a general line of goods.

generality
See coefficient of determination.

generation
(1) The process of begetting offspring. (2) A successive step or degree in natural descent, or, the average period between any two such successive steps (about thirty years for human beings). (3) Any group of individuals born at or about the same time. (4) The act or process of producing solid waste.

generator
A individual, facility, or mobile source that emits or causes or contributes to the emission of pollutants into the air or releases hazardous wastes into the water or soil.

generic name
A nonproprietary name, such as the chemical identity of a material or product rather than identification by a registered trade name.
genetic
See gene.

genetic defect
A defect in a living organism as a result of a deficiency in the genes of the original reproductive cells from which the organism was conceived.

genetic effects
Inheritable changes, chiefly mutations, produced by the absorption of ionizing radiation, exposure to certain chemicals, ingestion of some medications, and from other causes.

genetic engineering
A process of inserting new genetic information into existing cells to modify any organism for the purpose of changing one of its characteristics.

genetic mutation
A change in a gene which is reflected in body structure and/or function.

genetics
Inheritable changes, chiefly mutations, produced by the absorption of ionizing radiation, exposure to certain chemicals, ingestion of some medications, and from other causes.

genome
A total set of chromosomes derived from one parent.

genotoxic
(1) Refers to the ability of a chemical to adversely affect the genome of living cells, such that upon duplication, a mutagenic or carcinogenic event is expressed due to the alteration of the genome molecular structure.
(2) Chemical or radioactive substance known to cause or suspected of causing damage to the DNA in individual cells, thus causing mutations or cancer.

genotoxic teratogen
A substance which includes malformations in a developing embryo via genetic damage (i.e., mutations).

genotoxicin
A substance that is toxic to genetic material.

geo map
Aviation. The digitized map markings associated with the Airport Surveillance Radar (ASR-9) System.

geodesic line
The shortest line which connects two points on a curved surface.

Geographical Information System (GIS)
A system of hardware, software, and data for collecting, storing, analyzing, and disseminating information about areas of the Earth. For Highway Performance Monitoring System (HPMS) purposes, Geographical Information System (GIS) is defined as a highway network (spatial data which graphically represent the geometry of the highways, an electronic map) and its geographically referenced component attributes (HPMS section data, bridge data, and other data including socioeconomic data) that are integrated through GIS technology to perform analyses. From this, GIS can display attributes and analyze results electronically in map form.

gemedicine
The branch of medicine dealing with the influence of climatic and environmental conditions on health.

generic mean
The median in a lognormal distribution. Expressed as the nth root of a product of n numbers:

\[
GM = \sqrt[n]{x_1 \cdot x_2 \cdot \ldots \cdot x_n}
\]

geometric progression
A sequence of values corresponding to the form, \(a, ar^1, ar^2, ar^3, \ldots\)

geometric series
An infinite series having the form \(a + ar^1 + ar^2 + ar^3 + \ldots\)

geometrical access
See optical axis.

gometry
The study of size and shape.

gerophysical techniques tests
Used to locate buried metallic objects, such as Underground Storage Tanks (USTs), and to map groundwater pathways. Testing methodologies include magnetometer, surveys, ground penetrating radar, electrical resistance, and seismic refraction.
geostationary satellite
A satellite that orbits the earth at the same rate that the earth rotates and thus remains over a fixed place above the equator.

geostrophic wind
The horizontal wind blowing in a straight path, parallel to the isobars or contours, at a constant speed. The geostrophic wind results when the Coriolis force exactly balances the horizontal pressure gradient force.

geothermal resources
Under the Federal Geothermal Energy Research, Development, and Demonstration Act of 1974: (1) all products of geothermal processes, embracing indigenous steam, hot water, and brines; (2) steam and other gases, hot water and hot brines, resulting from water, gas, or other fluids artificially introduced into geothermal formations; and (3) any byproduct derived from them.

GERDDEA

geriatrics
The study of aging and any diseases associated with aging.

germ
A general term for a microorganism.

germ cell
The cells of an organism whose function it is to reproduce the kind (i.e., an ovum or spermatozoon). The cells of an organism whose function is reproduction.

German measles
A contagious virus disease, most common in children between the ages of 3 and 12 years. Also called rubella, or 3-day measles.

germanium
A chemical element, atomic number 32, atomic weight 72.59, symbol Ge.

germicidal effectiveness
See bactericidal effectiveness.

germicidal lamp
See bactericidal lamp.

germicide
(1) Any compound that kills disease-causing microorganisms. (2) Any substance that kills microbes, or an agent that destroys pathogenic microorganisms.

gerontology
The study of aging processes and their associated problems.

get
To pick up and acquire control of an object (may include several therbligs).

GFCI
See ground-fault circuit-interrupter.

GFF
Glass fiber filter.

GFI
Ground fault interrupter. See ground-fault circuit interrupter.

GHG
Greenhouse gas.

GHz
Gigahertz, 1 E+9 Hz.

GI tract
See gastrointestinal tract.

giant nuclei
See condensation nuclei.

giga–
(prefix) 10⁹ or 1 billion times the base unit.

gigabyte (GB)
Approximately one billion bytes.

gigawatt (GW)
One billion watts or one thousand megawatts. See also electricity, kilowatt, and megawatt.

gigawatt electric (GWE)
One billion watts of electric capacity.

gigawatt hour (GWH)
One billion watt-hours.

GIGO
See garbage in/garbage out.

Gilbreth basic element
See therblig.

gimbal
A device with two mutually perpendicular and intersecting axes of rotation which permits orientation or motion in two directions.

gingiva
The mucous membrane and other fibrous tissue covering the upper and lower jaws and bases of the teeth within the mouth.
gingival septum
That portion of the gingiva which lies between two teeth.

gingival sulcus
The groove between the gingiva and the tooth surface. Also called gingival crevice.

gingivitis
Inflammation of the gums of the mouth. Bleeding is the primary symptom. Other symptoms include swelling, redness, pain, and difficulty in chewing.
girth
The distance around an approximately circular object or cross-section of a structure.

GIS
See Geographical Information System. See also OSHA General Industry Standard.
glabella
The most anterior point of the forehead between the brow ridges in the midsagittal plane.
glabella – inion length
The horizontal linear distance from glabella to inion in the midsagittal plane. Measured with the individual standing erect and looking straight ahead.
glabella to back of head
See glabella – inion length.
glabella to top of head
The vertical distance from the most anterior point of the forehead between the brow ridges to the level of the top of the head. Measured with the individual standing erect.
glabella to wall
The horizontal linear distance from a wall to the most anterior point of the forehead between the brow ridges. Measured with the individual standing erect with his/her back and head against the wall and looking straight ahead.
glaciated cloud
A cloud or portion of a cloud where only ice crystals exist.
glad hands
Transit (slang). Air hose brake system connections between tractor and trailer.
gland
A structure, ranging from a cell to an organ in size, which manufactures, stores, and/or secretes one or more substances for bodily use.
glare
The sensation produced by luminance within the visual field that are sufficiently greater than the luminance to which the eyes are adapted. This causes annoyance, discomfort, or loss of visual performance and acuity, a concern especially for individuals using video display terminals for extended periods.
glare sensitivity
The ability to see objects despite the presence of glare or strong ambient lighting.
glare shield
Any transparent structure which can be used to reduce glare.
glass blower's cataract
An opacity of the rear surface of the lens in the eye caused by excessive exposure of the eyes to luminous radiation, primarily visible and infrared. Found in those occupationally exposed to furnaces or other hot devices for extended periods of time.
glass cockpit
Aviation (slang). An aircraft cockpit in which the use of multifunctional and computerized displays replaces many of the dedicated gages and instruments.
glass frit
See frit.
glaucoma
An abnormally high pressure in the eyeball. It is caused by an increase in fluid pressure inside the eye, somewhat like an overfilled water balloon. Most cases result from the inability of the eye fluid to drain.
glaze
The coating of ice that forms on cold objects that have been exposed to rain or drizzle. See also freezing rain.
GLC
Ground level concentration.
glenoid cavity
The depression in the scapula inferior to acromion which articulates with the head of the humerus to comprise the shoulder joint.
glide
A speech sound generally considered as being between a vowel and a consonant, and which is produced by movement or gliding from an articulatory position to an adjacent sound.

glidepath
A descent profile determined for vertical guidance during a final approach.

glider
A heavier-than-air aircraft, that is supported in flight by the dynamic reaction of the air against its lifting surfaces and whose free flight does not depend principally on an engine.

glideslope
Provides vertical guidance for aircraft during approach and landing. The glideslope or "glidepath" is based on the following: a) electronic components emitting signals which provide vertical guidance by reference to airborne instruments during instrument approaches such as Instrument Landing System (ILS)/Microwave Landing System (MLS); or b) visual ground aids, such as Visual Approach Slope Indicator (VASI), which provide vertical guidance for a Visual Flight Rules (VFR) approach or for the visual portion of an instrument approach and landing; or c) used by Air Traffic Control (ATC) to inform an aircraft making a Precision Approach Radar (PAR) approach of its vertical position (elevation) relative to the descent profile. See also instrument landing system, intercept glideslope altitude, localizer, middle marker, and outer marker.

Global Environmental Management Institute (GEMI)
Established by some major U.S. companies to provide leadership to other companies in developing tools and strategies to help business achieve environmental, health, and safety excellence and economic success.

Global Positioning System (GPS)
A space-based radio positioning, navigation, and time transfer system being developed by the Department of Defense. The first satellite in the system was launched from Cape Canaveral Air Station (CCAS) in Florida on February 14, 1989 aboard a Delta-II expendable launch vehicle (ELV). When fully deployed, the system is intended to provide highly accurate position and velocity information, and precise time, on a continuous global basis, to an unlimited number of properly equipped users. The system will be unaffected by weather, and will provide a worldwide common grid reference system. The Global Positioning System (GPS) concept is predicated upon accurate and continuous knowledge of the spatial position of each satellite in the system with respect to time and distance from a transmitting satellite to the user. The GPS receiver automatically selects appropriate signals from the satellites in view and translates these into a three-dimensional position, velocity, and time. Predictable system accuracy for civil users is projected to be 100 meters horizontally. Performance standards and certification criteria have not yet been established.

global scale
See planetary scale.

global warming
See greenhouse effect.

globe temperature
A thermal value representing the composite of the dry-bulb temperature, radiation heating, and convection/wind effects. Measured with the thermometer in the center of a 6" sphere which is assumed to be a blackbody radiator or represents the material being tested. See globe thermometer.

globe thermometer
A dry-bulb thermometer suspended in the center of a sphere that has been painted flat black and is used to measure radiant heat.

globulin
Any of a group of proteins found in animal and vegetable tissues that can be precipitated from serum or plasma.

gloss
An attribute of a surface which results in a shiny appearance.

gloss trap
A cavity or other structure designed to absorb specular reflections from incident light.

glossal
Pertaining to the tongue.

glossitis
Inflammation of the tongue.
glossometer
A photometer for measuring the gloss of a material in the general direction of specular reflection.

glossopharyngeal nerve
A nerve having both motor and sensory components, and generally involved in salivation, muscular control of the pharynx, and taste. May also be called the ninth cranial nerve.

glossy
Word (adjective) used to describe a polished surface with a mirror-like finish.

glottis
The opening between the vocal cords.

glove
An article of clothing which has separate appendages for covering the digits and the remainder of the hand, as well as possibly covering the wrist and some portion of the distal forearm. Although there are some social uses that are nothing more than cosmetic, the general intent is to protect tissue from some undesirable or hazardous environment.

Gloves, as hand protection, are available in a variety of materials to ensure protection against skin exposure to virtually any type of chemical or physical substance

glove box laboratory hood
An enclosed, six-sided hood with arm-length gloves provided at the front or side of the hood for access. An air-lock pass-through port is often provided to insert and remove materials from the hood.

glove controller
A lightweight glove-like device which is equipped with transducers and can transmit information about arm, hand, and finger position to a computer for controlling another device.

glovebag
A plastic bag which is placed around a pipe or other structure from which the removal of a material, such as asbestos, is to be carried out without its release to the atmosphere.

GLP
Good laboratory practice.

glucose
A 6-carbon monosaccharide (blood sugar). The most common type of sugar and the primary metabolic energy sources. It forms the basis for the glycemic index. All carbohydrates are eventually converted to glucose by the body.

glutamine
A nitrogen compound occurring in body tissues and having a part in the production of ammonia by the kidney.

glutaraldehyde
A compound used as a disinfectant and as a tissue fixative for light and electron microscopy because of its preservation of fine structural detail and localization of enzyme activity.

gluteal arc
That portion of the posterior body surface represented primarily by the curvature of the buttock.

gluteal arc length
The surface distance over the buttock from the gluteal furrow to the posterior waist level. Measured with the individual standing erect and the back/hip/leg muscles relaxed except as necessary to maintain posture.

gluteal furrow
The crease at the inferior junction of the buttock and superior portion of the posterior thigh.

gluteal furrow height
The vertical distance from the floor or other reference surface to the gluteal furrow. Measured with the individual standing erect and the back/hip/leg muscles relaxed except as necessary to maintain posture.

glycemic index
A measure of the speed at which a carbohydrate is assimilated. The rapidness of assimilation is determined by the structure of the carbohydrate as well as its fiber content.
glycerin
A clear, colorless, syrupy liquid, used as an emollient and as a solvent for drugs; a product, along with fatty acids, of the hydrolysis of ingested fats.

glycogen
A polysaccharide (i.e., carbohydrate) molecule, containing glucose and water, which is stored in various body tissues as a quick reserve source of sugar/energy. It is converted to glucose when additional energy is required. Glycogen is the primary way that carbohydrates are stored in skeletal muscle and the liver. Also referred to as animal starch.

glycolysis
The breakdown of carbohydrates in bodily metabolism.

GMT
See Greenwich Mean Time.

GNP
See Gross National Product.

go ahead
Aviation. Aircraft-to-tower communication protocol meaning proceed with your message. The term cannot be used for any other purpose.

go around
Aviation. Instructions for a pilot to abandon his approach to landing. Additional instructions may follow. Unless otherwise advised by Air Traffic Control (ATC), a Visual Flight Rules (VFR) aircraft or an aircraft conducting visual approach should overfly the runway while climbing to traffic pattern altitude and enter the traffic pattern via the crosswind leg. A pilot on an Instrument Flight Rules (IFR) flight plan making an instrument approach should execute the published missed approach procedure or proceed as instructed by ATC. See also missed approach.

go/no-go display
(slang). A display which provides information from which the user can make only one of two opposing responses.

go/no-go reaction
(slang). One of a set of responses open to an individual in which he/she either responds (go) or withholds (no-go) depending on a stimulus, display, or other input.

go well over
Maritime Navigation. A term applied in making a crossing meaning to go well over near the shore on the opposite side before turning out to either shape the shore or pass an easy distance off before coming up on the next set of marks.

goal
An objective for which some activity is initiated and sustained.

goal gradient
The influence of the nearness to reaching a goal on the energy expended toward achieving that goal.

goal-oriented problem solving
See backward chaining.

goals, operators, methods, and selection rules (GOMS)
A method for analyzing and/or modeling the knowledge required for interface use.

goat 'n' shoat man
Transit (slang). Driver of a livestock carrier.

google
A tight-fitting device worn over the eyes to provide splash and/or impact protection.

going rate curve
A relationship between the evaluation of jobs and their rates of pay in the labor market.

goiter
Enlargement of the thyroid gland, causing a swelling in the front part of the neck.

gold
A chemical element, atomic number 79, atomic weight 196.967. symbol Au.

Gold Book
Common name for an EPA publication known as the Quality Criteria for Water which was developed as a means of ensuring some level of minimum consistency between the states. The EPA has established minimum criteria for 137 specific pollutants based upon identifiable effects of each pollutant on the public health and welfare, aquatic life, and recreation.

Golgi tendon organ
A stretch receptor located primarily near the tendon-muscle junction which measures muscle tension and provides feedback to the nerv-
ous system. Also called *neurotendinous spindle*.

**GOMS**

*See goals, operators, methods, and selection rules.*

**gonad**

A primary sex gland, consisting of an ovary in the female or testis in the male.

**gonial angle**

The point on the lower jaw at which the posterior lower portion of the ramus and lower body of the mandible meet.

**goniometer**

An apparatus for measuring the limits of flexion (bending) and extension of the joints of the fingers. The goniometer arms are normally aligned with the bones of adjacent body segments, and the angle read from the pivot point.

**goniophotometer**

An instrument for measuring the quantity of light emitted/reflected in various directions to determine the spatial distribution of light.

**goniophotometric curve**

A graph or function showing the light emitted/reflected from an object at varying angles of view with a fixed angle of incidence.

**good condition classification**

No corrective maintenance is needed at time of an inspection. The facility is serving the purpose for which it was constructed.

**good faith**

An intangible and abstract quality with no technical meaning or statutory definition, and it encompasses, among other things, an honest belief, the absence of malice, and the absence of design to defraud or to seek an unconscionable advantage, and an individual's personal good faith is a concept of his/her own mind and inner spirit and, therefore, may not conclusively be determined by his/her protestations alone.

**Good Samaritan doctrine**

One who sees a person in imminent and serious peril through negligence of another cannot be charged with contributory negligence, as a matter of law, in risking his/her own life or serious injury in attempting to effect a rescue, provided the attempt is not recklessly or rashly made. Under this doctrine, negligence of a volunteer rescuer must worsen the position of the person in distress before liability will be imposed. The protection from liability is provided by statute in most states.

**goodness of fit**

A measure of how well a sample or model approximates a prescribed curve.

**goose pimples**

Also known as "goose flesh," a skin conditions marked by numerous small elevations around the hair follicles caused by the action of the *arrectores pilorium* ("raisers of hair") muscles.

**gout**

A disease in which uric acid appears in excessive quantities in the blood and may be deposited in the joints and other tissues. During an acute gout attack, there is swelling, inflammation and extreme pain in a joint, frequently the big toe. After several years of attacks, the chronic form of the disease may set in, permanently damaging and deforming joints and destroying cells of the kidney. About 95% of all cases occur in men and the first attack rarely occurs before the age of 30. The causes of gout are not fully understood. It is a disorder of the metabolism of purines. These nitrogenous substances are found in high-protein foods and the net product of their metabolism is uric acid. For unknown reasons, the uric acid, normally expelled in the urine, is retained in the blood in excess amounts. Uric acid crystals are deposited in the joints and in cartilage, where they form lumps called tophi. The uric acid crystals also predispose to the formation of calculi in the kidney (kidney stones) and lead to permanent damage of the kidney cells.

**governing element**

A work element which requires a longer time than any other element being performed concurrently in a work cycle.

**government aid cargo**

The tonnes of cargo assessed at the government aid rate of tolls as defined in the St. Lawrence Seaway Tariff of Tolls.

**government fleet vehicle**

Includes vehicles owned by all federal General Services Administration (GSA), state,
county, city, and metro units of government, including toll road operations.

**government leased vehicle**
A vehicle obtained by an executive agency by contract or other source for a period of 60 continuous days or more.

**government light**
A colloquial term applied to an aid to navigation maintained by the Coast Guard.

**government-owned contractor-operated vehicle**
A vehicle that is owned or leased by the federal government but used by a contractor under a cost reimbursement contract with a federal agency.

**government owned vehicle**
A vehicle that is owned by the federal government.

**government tort**
A wrong perpetrated by the government through an employee or agent or instrumentality under its control which may or may not be actionable depending upon whether there is governmental tort immunity. Tort actions against the federal government are governed by the Federal Tort Claims Act.

**government transportation expenditures**
Those expenditures that are the final actual costs for capital goods and operating services covered by the government transportation program.

**government transportation revenue**
The transportation revenue estimates contained in this report consist of those funds identified as government transportation-related user charges, taxes, or fees in the various data sources. Therefore, general revenue is not included.

**governor**
(1) **General.** One who governs. The elected chief executive of any State in the United States. An official appointed to administer a province, territory, etc. (2) **Automotive Mechanics.** A device which limits the speed of an engine. A governor is also a part on an automatic transmission which signals internal transmission components to shift to a higher gear.

**gpm**
Gallons per minute.

**GPS**
*See Global Positioning System.*

**grab bar**
With regard to ladders, individual handholds placed adjacent to or as an extension above ladders for the purpose of providing access beyond the limits of the ladder.

**grab one**
*Transit (slang).* To shift into a lower gear as a means of gaining power when driving uphill.

**grab sample**
(1) To collect an air sample for a short period of time to test for the presence of contaminants in a work or other environment. (2) In industrial hygiene application, a type of air sample in which the air is admitted into a bag, vessel, or instrument instantaneously for subsequent analysis.

**graben**
An elongated part of the Earth's crust bounded by faults on its long sides and relatively down-dropped compared to or relative to its surroundings.

**gradability**
The ability of a vehicle to negotiate a given grade at a specified Gross Combination Weight Rating (GCWR) or Gross Vehicle Weight Rating (GVWR). It is the measure of the starting and grade climbing ability of a vehicle, and is expressed in percent grade (1 percent is a rise of 1 foot in a horizontal distance of 100 feet).

**grade**
(1) One level in a series of defined sequential levels according to a set of criteria. (2) The angle of an incline, either up or down from horizontal. (3) To segregate a quantity of some product by quality.

**grade crossings**
An intersection of highway roads, railroad tracks, or dedicated transit rail tracks that run either parallel or across mixed traffic situations with motor vehicles, light rail, commuter rail, heavy rail, trolley bus, or pedestrian traffic. Collisions at grade crossings involving transit vehicles apply only to light rail, commuter rail, heavy rail, or trolley bus. *See also*
at grade, highway-rail crossing, and rail-highway grade crossing.

Grade D breathing air
Breathing air which meets the specifications of the Compressed Gas Association (CGA) Commodity Specification for Grade D air. It must have between 19.5 and 23% oxygen content and must contain maximums of 5 mg/m³ condensed hydrocarbons, 20 ppm carbon monoxide, and 1000 ppm carbon dioxide; and it must have no pronounced odor.

gradient
The rate of increase or decrease in magnitude of a variable or response.

gradient wind
A wind that blows parallel to curved isobars or contours.

gradually pull down
*Marine Navigation.* To swing slowly to a new course on a mark further downstream.

gradually pull down shape of bend
*Marine Navigation.* Term used in crossings meaning to keep well out until tow is well down, then alter course to follow the shore shape of the bend.

gradually pull down shore
*Marine Navigation.* Term used in crossings meaning, when well over, to gradually swing the vessel's head downstream along the shore.

Graham's law
The rate of diffusion of a gas through porous membranes varies inversely with the square root of its density.

grain
(1) A unit of weight equal to 64.8 milligrams.
(2) The seed of cereal plants.

grain body
Low side, open top truck body designed to transport dry fluid commodities.

grain cargo
The tonnes of cargo assessed at the Food or Feed Grains rate of tolls as defined in the St. Lawrence Seaway Tariff of Tolls.

grain loading
The rate at which particles are emitted from a pollution source. Measurement is made by the number of grains per cubic foot of gas emitted.

gram
The basic unit of mass in the metric system. One gram is equal to 15.432 grains.

gram-atomic weight
A mass in grams numerically equal to the atomic weight of the element.

gram mole
See gram molecular weight.

gram-molecular weight
Mass in grams numerically equal to the molecular weight of a substance.

Gram's stain
A stain for bacteria, used as one means of identifying unknown bacterial organisms.

Grand Jury
A tribunal which is part of a criminal procedure to which the prosecutor submits evidence from investigations and which determines whether or not there is probable cause to believe a crime was committed and by whom. If so, next follows an indictment.

grand mal
A major epileptic seizure attended by the loss of consciousness and convulsive movements, as distinguished from petit mal, a minor seizure.

grandfather clause
Provision in a new law or regulation exempting those already in or a part of the existing system which is being regulated.

Grandfathering Provision
Under the Clean Water Act, any new source which has been constructed to meet current BADT standards will not be subjected to any additional more stringent standards of performance for as much as 10 years into the future.

grants
A federal financial assistance award making payment in cash or in kind for a specified purpose. The federal government is not expected to have substantial involvement with the state or local government or other recipient while the contemplated activity is being performed. The term "grants-in-aid" is commonly restricted to grants to states and local governments.

granular activated carbon treatment (GAC)
A filtering system often used in small water systems and individual homes to remove or-
ganics. GAC can be highly effective in removing elevated levels of radon from water.

granulocytes
Any cell containing granules, especially a leukocyte containing neutrophil, basophil, or eosinophil granules in its cytoplasm.

granulocytosis
An abnormally large number of granulocytes in the blood.

granuloma
A tumorlike mass or nodule of vascular tissue due to a chronic inflammation process associated with an infectious disease.

Granz rays
X-rays produced at voltages of 5 to 20 kilovoltage peak (KVP).

graph
A plot of some function or distribution using a coordinate system.

graphic
A pictorial hardcopy or display representing an object or a dataset which involves more than simple straight or curved lines.

graphic display
A graphic presented on a CRT, flat panel, or other graphics-capable monitor.

Graphical User Interface (GUI)
The use of direct manipulation and icons or other graphical symbols on a display to interact with a computer.

grapple
To close a device on the end effector of a robotic or teleoperated arm to gain control of an object.

grasp
(1) To position the required number of digits and/or the palm to enable an individual to move, pick up, or hold an object. (2) A therblig: to flex the hand and fingers around an object to gain control of that object.

grasp reflex
A grasping motion which occurs on stimulation of the palm or sole of the foot.

graticule
See reticle.

graupeI
See snow pellets.

graveyard
See burial ground.

graveyard shift
See third shift.

gravimetric method
An analytical method for determining the concentration of a substance based on determination of the weight of the material collected on a filter, absorbed in a sorbent, or formed in a subsequent analytical procedure.

gravitational field
That vector field due to gravity extending through space which would cause the source and any object entering that field to be mutually attracted to each other. One of the basic fields in nature.

gravitational force
See gravity.

gravitational physiology
The study of the effects of different gravity levels on the body's structure and function.

gravity
A force which causes objects to attract each other as a function of their masses and the distance between them.

gravity feed
The process of using gravitational force to pass materials from one location to another, lower location.

gravity-induced loss of consciousness (g-LOC)
That loss of consciousness due to high positive g-force maneuvers with the resulting reduction in cranial blood supply in high performance aircraft. See also grayout and blackout.

gray
(1) General. An achromatic color between total white and total black. (2) The unit of absorbed radiation dose. One gray is equal to one joule per kilogram.

gray scale
A series of achromatic shades with varying proportions of white and black, to give the full range between total whiteness and total blackness.

gray water
The term given to domestic wastewater composed of washwater from sinks, kitchen sinks, bathroom sinks and tubs, and laundry tubs.
graying of vision
See grayout.

grayout
A condition in which the visual field begins to narrow and decrease in brightness. Also referred to as graying of vision. See also gravity-induced loss of consciousness and blackout.

grazing permit and lease

great bodily injury
Bodily injury which involves a substantial risk of death, serious permanent disfigurement, or protracted loss or impairment of function of any part of an organ of the body.

great care
Law. Great care is such as persons of ordinary prudence usually exercise about affairs of their own which are of great importance; or it is that degree of care usually bestowed upon the matter in hand by the most competent, prudent, and careful persons having to do with the particular subject. Highest degree of care and utmost care have substantially the same meaning. "Highest degree of care" only requires the care and skill exacted of persons engaged in the same or similar business. It means the highest degree required by law where human safety is at stake, and the highest degree known to the usage and practice of very careful, skillful, and diligent persons engaged in the same business by similar means or agencies.

Great Lakes-St. Lawrence Seaway Freight Transportation
Establishments primarily engaged in the transportation of freight on the Great Lakes and St. Lawrence Seaway, either between U.S. ports or between U.S. and Canadian ports.

Great River Environmental Action Team
A multi-agency planning group organized to develop a resource management plan for the Upper Mississippi River. Operates under the auspices of the Upper Mississippi River Basin Commission.

greater hazard defense
A well-established Occupational Safety and Health Review Commission (OSHRC) doctrine that, on some occasions, allows employers to escape sanctions for violations of otherwise applicable safety regulations because the act of abating the violation would itself pose an even greater threat to the safety and health of their employees.

greater multiangular bone
See trapezium.

greater trochanter
A large lateral projection of the proximal femur.

green
A primary color, corresponding to that hue apparent to the normal eye when stimulated only with electromagnetic radiation approximately between 495 to 575 nm wavelength.

green blindness
See deuteranopia.

green development
An emerging practice in real estate development which emphasizes research and incorporation of environmentally and economically sound measures into real estate projects.

green flash
A small, green color that occasionally appears on the upper part of the sun as it rises or sets.

Greenburg-Smith Impinger
A relatively large impinger that has been employed for the collection of airborne dust samples. Requires a sample rate of 1 cubic foot per minute.

greenhouse effect
The warming of the earth's atmosphere caused by a build-up of carbon dioxide or other trace gases; it is believed by many scientists that this build-up allows light from the sun's rays to heat the earth but prevents a counterbalancing loss of heat. Also known as global warming or, simply atmospheric effect.

greening
Incorporating environmental performance and sustainability into overall corporate strategies and environments.

Greenwich Mean Time (GMT)
A world time standard; the mean solar time at the Greenwich (England) Meridian.
grid
A flat section of a region which is subdivided into smaller, usually square, sections.

grievance
Any dissatisfaction with working conditions or pay which is expressed by one or more employees to management. Such employees are typically, but not necessarily, represented by a collective bargaining agreement.

grievance committee
A group of workers, usually in a union shop, who have been chosen by their fellow workers (of the same union) to represent employees to management during grievance proceedings.

grievance procedures
Any sequence of steps which should be followed in pursuing an employee's grievance through an organization in an attempt to obtain resolution.

grille
Component of a ventilation system through which air is returned to the system from the space to which it was supplied.

grind
A process using an abrasive disk rotating at high speed.

grinder pump
A mechanical device which shreds solids and raises the fluid to a higher elevation through pressure sewers.

grinder's asthma
Asthmatic symptoms related to the inhalation of fine particles generated in the grinding of metals. Also called grinder's rot.

grit
Coarse nuisance dust particles that are larger than 75 microns in diameter.

groin
That region between the thighs at the apex of the pubic crotch.

grooving
The practice of designing a tool with grooves to accommodate the user's fingers.

gross adjustment
See primary positioning movement.

gross alpha particle activity
The total activity, commonly measured in picocuries, due to emission of alpha particles. Generally used as a screening measurement for naturally occurring radionuclides.

gross anatomy
That portion of anatomy which involves the bodily features apparent to the naked eye.

gross axle weight rating (GAWR)
Value specified by the vehicle manufacturer as the load carrying capacity of a single axle system, as measured at the tire-to-ground interfaces.

gross beta particle activity
The total activity, commonly measured in picocuries, due to emission of beta particles. Used as a screening measurement for human-made radionuclides.

gross body coordination
The ability to integrate motion of the body segments while the entire body is in motion.
gross body equilibrium
A measure of the ability to retain or acquire one's balance, regardless of bodily position or motion.

gross combination weight (GCW)
The maximum allowable fully laden weight of a tractor and its trailer(s).

gross combination weight rating (GCWR)
The value specified by the manufacturer as the loaded weight of a combination (articulated) vehicle. In the absence of a value specified by the manufacturer, GCWR will be determined by adding the Gross Vehicle Weight Rating (GVWR) of the power unit and the total weight of the towed unit and any load thereon.

Gross Domestic Product (GDP)
The total value of goods and services produced by labor and property located in the United States. As long as the labor and property are located in the United States, the supplier (that is, the workers and, for property, the owners) may be either U.S. residents or residents of foreign countries.

gross head
A dam's maximum allowed vertical distance between the upstream's surface water (headwater) forebay elevation and the downstream's surface water (tailwater) elevation at the tail-race for reaction wheel dams or the elevation of the jet at impulse wheel dams during specified operation and water conditions.

gross horsepower
The power of a basis engine at a specified revolution per mile without alternator, water pumps, fan, etc. Gross horsepower is the figure commonly given as the horsepower rating of an engine.

gross metabolic cost
The total amount of energy expended to perform some specific activity. See also net metabolic cost.

Gross National Product (GNP)
A measure of monetary value of the goods and services becoming available to the nation from economic activity. Total value at market prices of all goods and services produced by the nation's economy. Calculated quarterly by the Department of Commerce, the Gross National Product is the broadest available measure of the level of economic activity.

gross registered tonnage (GRT)
(1) The capacity of a vessel in cubic feet of the spaces within the hull and of the enclosed spaces above the main deck available for cargo, stores, and crew, divided by 100. (2) The gross registered tonnage of a vessel according to the country of registry.

gross ton mile
The number of tons behind the locomotive (cars and contents, company service equipment, and cabooses) times the distance moved in road freight trains.

gross tonnage
The gross tonnage of a vessel is the internal cubic capacity of all spaces in and on the vessel which is permanently enclosed, with the exception of certain permissible exemptions. It is expressed in tons of 100 cubic feet.

gross vehicle weight (GVW)
(1) The maximum allowable weight in pounds or tons that a truck is designed to carry. (2) The weight of the empty vehicle plus the maximum anticipated load weight.

gross vehicle weight rating (GVWR)
(1) The maximum loaded weight in pounds of a single vehicle. Vehicle manufacturers specify the maximum gross vehicle weight rating (GVWR) on the vehicle certification label. (2) The maximum rated capacity of a vehicle, including the weight of the base vehicle, all added equipment, driver and passengers, and all cargo loaded into or on the vehicle. Actual weight may be less than or greater than GVWR.

gross weight
(1) Entire weight of goods, packing, and container ready for shipment. (2) The weight of a packaging plus the weight of its contents. See also net weight.

ground
(1) General. The surroundings of a figure or object which are perceived as behind or not belonging directly to the figure or object of interest. Also, the surface of the earth. (2) Electricity. A conducting connection, whether intentional or accidental, between an electrical circuit or equipment and the earth, or to some conducting body that serves in place of the
See also electrical ground. (3) To restrict from certain activities, especially flying.

**ground blizzard**
See blizzard.

**ground controlled approach (GCA)**
*Aviation.* A radar approach system operated from the ground by air traffic control personnel transmitting instructions to the pilot by radio. The approach may be conducted with airport surveillance radar (ASR) only or with both surveillance and precision approach radar (PAR). Usage of the term "GCA" by pilots is discouraged except when referring to a Ground Controlled Approach (GCA) facility. Pilots should specifically request a "PAR" approach when a precision radar approach is desired or request an "ASR" or "surveillance" approach when a non-precision radar approach is desired. See also airport surveillance radar and precision approach radar.

**ground cover**
Plants grown to keep soil from eroding.

**ground current**
Any current passing to or through the earth from electrical equipment.

**ground delay**
The amount of delay attributed to Air Traffic Control (ATC), encountered prior to departure, usually associated with a Controlled Departure Time (CDT) program.

**ground-fault circuit-interrupter (GFCI)**
A device whose function is to interrupt the electric circuit to the load when a fault current to ground exceeds some predetermined value that is less than that required to operate the overcurrent protective device of the supply circuit.

**ground-fault interrupter (GFI)**
See ground-fault circuit interrupter.

**ground fog**
See radiation fog.

**ground potential**
See electrical ground.

**ground property, equipment and other**
The total cost of ground property and equipment and land.

**ground speed**
The speed of an aircraft relative to the surface of the earth.

**ground stop**
*Aviation.* Normally, the last initiative to be utilized; this method mandates that the terminal facility will not allow any departures to enter the Air Route Traffic Control Center (ARTCC) airspace until further notified.

**ground state**
The lowest energy level of an atom.

**ground surface**
The land surface of the earth, both exposed and underwater.

**ground visibility**
Prevailing horizontal visibility near the earth's surface as reported by the United States National Weather Service or an accredited observer.

**grounded conductor**
A system or circuit conductor that is intentionally grounded.

**grounded, effectively**
See effectively grounded.

**grounding**
(1) *Electronics.* The practice of eliminating the difference in voltage potential between an object and ground. Procedure involves connecting the object to an effective ground (metal to metal) by an appropriate wire. (2) *Maritime Navigation.* Running aground of a vessel, striking or pounding on rocks, reefs, or shoals; stranding.

**grounding conductor**
A conductor used to connect equipment or the grounded circuit of a wiring system to a grounding electrode or electrodes.

**grounding conductor, equipment**
The conductor used to connect the non-current-carrying parts of equipment, raceways, and other enclosures to the system grounded conductor and/or the grounding electrode conductor at the service equipment or at the source of a separately derived system. See also grounding electrode conductor.

**grounding electrode conductor**
The conductor used to connect the grounding electrode to the equipment grounding conductor and/or to the grounded conductor of the circuit at the service equipment or at the source of a separately derived system.
groundwater
The supply of fresh water found beneath the Earth's surface, usually in aquifers, which is often used for supplying wells and springs. Because groundwater is a major source of drinking water, there is a growing concern over areas where leaching agricultural or industrial pollutants or substances from leaking underground storage tanks are contaminating groundwater.

group
Two or more persons having some common relationship or interest.

group II railroad
Railroads, excluding Class I, with an annual accumulation of over 400,000 employee hours worked.

group dynamics
The interactions between the members of a group or their functioning as a unit.

group incentive plan
An incentive plan under which a number of workers are collectively rewarded based on the results of the entire group's behavior.

group technology
A concept which holds that the similarities of part geometric shapes or processes can be grouped to reduce manufacturing costs.

growing degree-day
A form of the degree-day used as a guide for crop planting and for estimating crop maturity dates.

growth
(1) An increase in the number of cells and/or cell size. (2) An expansion in consciousness or value.

growth curve
A graphic representation of the pattern of increase in some measure.

growth rate
A measure of the rapidity in some aspect of individual or entity growth.

GRT
See gross registered tonnage.

guard
(1) A person whose primary function is to restrict entry to a certain facility and observe that facility for hazards or violations. (2) A physical device to prevent undesired contact with a source of energy between people, equipment, materials, and the environment. (3) Any structure designed to restrict or limit entry into some hazardous region of a piece of equipment for preventing injuries.

guard rail
Transit. A strong fence or barrier to prevent vehicles from leaving the roadway, or for people's safety. See also guardrail.

guard wall
The river wall of a lock which prevents boats from being drawn into the dam.

guarded
Covered, shielded, fenced, enclosed, or otherwise protected by means of suitable covers, casings, barriers, rails, screens, mats, or platforms to remove the likelihood of approach to a point of danger or contact by persons or objects.

guardrail
A rail secured to uprights and erected along the exposed sides and ends of platforms to protect persons from otherwise exposed openings through which they may fall.

GUI
See Graphical User Interface.

guide wall
The extension of the inner lock wall on the upper and lower side of the lock chamber to assist navigators in guiding vessels or tows into the lock chamber. It is usually 600 feet in length, although some are now 1,200 feet long.

guideline
A recommended practice or other non-binding suggestion issued by an agency, without the force of law. Contrasted to a regulation.

guideway
In transit systems, a track or other riding surface (including supporting structure) that supports and physically guides transit vehicles specifically designed to travel exclusively on it.

Gulf Intracoastal Waterway
The system of that name extending from St. Marks, Florida to Brownsville and Harlingen, Texas and including the Pearl River, Tombigbee River, Apalachicola River, Flint River,
and such other navigable tributaries to which barge operations extend.

**Gulf of Mexico and its inlets**
The waters from the mean high water mark of the coast of the Gulf of Mexico and its inlets open to the sea (excluding rivers, tidal marshes, lakes, and canals) seaward to include the territorial sea and Outer Continental Shelf (OCS) to a depth of 15 feet, as measured from the mean low water.

**Gulf Stream**
A warm, swift, narrow ocean current flowing along the east coast of the United States.

**gum**
See *gingiva*.

**gum ball machine**
*Transit (slang)*. The rotating warning light on top of an emergency vehicle.

**gust front**
A boundary that separates a cold downdraft of a thunderstorm from warm, humid surface air. On the surface its passage resembles that of a cold front.

**gustation**
The sense of taste.

**gut**
The intestines.

**GVW**
See *gross vehicle weight*.

**GVWR**
See *gross vehicle weight rating*.

**GW**
See *gigawatt*.

**GWE**
See *gigawatt electric*.

**GWH**
See *gigawatt hour*.

**gypsy**
*Transit (slang)*. (1) An independent truck operator who drives his own truck and secures freight wherever he can. (2) One who trip-leases to authorized carriers.

**gyre**
A large, circular, surface ocean current pattern.

**gyrodyne**
A rotorcraft whose rotors are normally engine driven for takeoff, hovering, and landing, and for forward flight through part of its speed range, and whose means of propulsion, consisting usually of conventional propellers, is independent of the rotor system.

**gyroplane**
A rotorcraft whose rotors are not engine driven, except for initial starting, but are made to rotate by action of the air when the rotorcraft is moving; and whose means of propulsion, consisting usually of conventional propellers, is independent of the rotor system. See also *helicopter*. 
H

H point
The mechanically hinged hip point of a manikin which simulates the actual pivot center of the human torso and thigh, described in Society of Automotive Engineers (SAE) Recommended Practice J826, "Manikins for Use in Defining Vehicle Seating Accommodations," November 1962.

habeas corpus
(Latin). Meaning "you have the body."

Haber's Rule
States that a toxic effect is dependent upon the product of exposure time and the contaminant concentration. Thus, exposure at a higher concentration for a short period would be equivalent to exposure at a lower concentration for a longer period in direct proportion to the product of exposure concentration and time. This reportedly, however, holds only for short exposure periods. Also referred to as Haber's Law.

habilitate
Bring to an initial state of fitness or capability, as in overcoming a congenital handicap. See also rehabilitate.

habit
An acquired, well-practiced behavior pattern which is carried out with minimal or no conscious direction.

habitability
A measure of the interaction quality of an individual or group with their physical, social, and psychological environment to produce certain working and living conditions.

habitable volume
That volume which is suitable for living, containing breathable air and necessary or reasonable accommodations.

habitat
The place where population (e.g., human, animal, plant, microorganism) lives and its surroundings, both living and non-living.

habitual criminal
A legal category created by statute in many states by which more severe penalties can be imposed on offenders who have multiple felony convictions. The criminal history of a defendant is an important factor in imposing sentence under federal sentencing guidelines.

habituation
A decline in response or conscious sensitivity to repeated or maintained exposure to one or more environmental stimuli.

habituation error
The tendency to keep making the same response, even if the stimulus or conditions change.

habooch
A dust or sandstorm that forms as cold downdrafts from a thunderstorm turbulently lift dust and sand into the air.

habutai
A soft, lightweight, plain weave silk.

hacking
A massaging technique in which the medial edge of the open hand is brought repeatedly against the body surface.

Hadley cell
A thermal circulation pattern first proposed by George Hadley to explain the movement of the trade winds. It consists of rising air near the equator and sinking air near 30° latitude.

hafnium
A chemical element, atomic number 72, atomic weight 178.49, symbol Hf.

hahnium
A chemical element, atomic number 105, atomic weight 260, symbol Ha.

hailstones
Transparent or partially opaque particles of ice that range in size from that of a pea to that of golf balls. Some may even reach larger proportions, such as that of a softball, but such development is very uncommon.

hair
(1) The collective hair shafts growing in various portions of the body, such as the scalp, face, or pubic region. (2) A single keratinized shaft growing from a hair root within the skin. (3) A threadlike structure, especially the specialized epidermal structure developing from a papilla sunk in the corium, produced only by mammals and characteristic of that group of animals.
hair esthesiometer
A device developed by von Frey to determine skin touch sensitivity, consisting of a filament attached to some type of holder. See also von Frey filament.

hair follicle
That structure surrounding the root of a hair in the skin.

hair hygrometer
See hygrometer.

hairball
A concentration of hair sometimes found in the stomach or intestines of man or other animals.

HAL
See height above landing.

half-life
(1) Biological. The time required for the body to eliminate, by natural biological means, half of the material taken into it. (2) Effective. The time in which the quantity of a radioactive isotope in the body will decrease to half as a result of both radioactive decay and biological elimination. (3) Radioactive. The time for the activity of a given radioactive isotope to decrease to half of its initial value, due to radioactive decay. The half-life is a characteristic property of each radioactive isotope and is independent of its amount or condition.

half-mask respirator
Respirator which covers half the face, from the bridge of the nose to below the chin.

half-thickness
See half-value layer.

half-value layer (HVL)
The thickness of a specified material which, when introduced into the path of a given beam of ionizing radiation, reduces the exposure rate by one-half. Also referred to as the half-thickness.

halfway-to-hip circumference
The surface distance around the torso at a level midway between the waist height and the trochanteric height levels. Measured with minimal tissue compression.

halide
A compound of a halogen with an element or radical.

halide meter
An instrument used for the direct measurement of halogenated hydrocarbons.

halitosis
A condition in which one's breath is offensive to others.

hallucination
An apparently real sensory perception (auditory or visual) without any real external stimuli to cause it; commonly experienced by psychotics.

hallucinogen
A psychedelic agent; a compound that produces changes in perception, thought, or mood without causing major disturbances in the nervous system (autonomic). An example is LSD.

halo
A ring or arc that appears to encircle the sun or moon when seen through an ice crystal cloud or a sky filled with falling ice crystals. Halos are produced by refraction of light.

halo effect
A tendency for an evaluator to be overly influenced by an individual's ratings on one trait or due to some past outstanding achievement.

halogen
Any of a group of five chemically related nonmetallic elements that includes bromine, fluorine, chlorine, iodine, and astatine.

halogenation
The process whereby halogens are used for disinfecting purposes.

Halon 1211
A colorless, faintly sweet smelling, electrically nonconductive liquefied gas, chemical formula CBrClF(2), which is a medium for extinguishing fires by inhibiting the chemical chain reaction of fuel and oxygen. It is also known as bromochlorodifluoromethane.

Halon 1301
A colorless, odorless, electrically nonconductive gas, chemical formula CBrF(3), which is a medium for extinguishing fires by inhibiting the chemical chain reaction of fuel and oxygen. It is also known as bromotrifluoromethane.
halons
Bromine-containing compounds, normally used in firefighting methodologies, with long atmospheric lifetimes whose breakdown in the stratosphere is thought to cause ozone depletion.

halothane
A colorless, mobile, non-flammable, heavy liquid used by inhalation to produce anesthesia.

hamartitis
Arthritis of all the joints.

hamate bone
One of the distal group of bones on the wrist.

Hamman's disease
Spontaneous interstitial emphysema of the lungs.

Hamman-Rich syndrome
Diffuse interstitial pulmonary fibrosis.

hammer provision
Common term for the automatic promulgation of required standards by Congress, usually invoked when a regulatory agency such as the EPA fails to promulgate the required standard by an established deadline.

hammermill
A high-speed machine that hammers and cutters use to crush, grind, chip, or shred solid wastes.

hamstring
The tendon for the hamstring muscles.

hamstring muscles
A group of muscles in the posterior thigh, consisting of the biceps femoris, semitendinosus, and semimembranosus muscles. Sometimes simply referred to as hamstrings.

hand
(1) Measurement. A measure of length equal to four inches, usually used in measuring the height of horses. (2) Anatomy. The metacarpal and phalangeal bones and other associated tissues normally existing distal to the wrist. See also metacarpal bone.

hand-arm
Involving both the hand and the arm, generally pertaining to sensory or other external influences on both the hand and the arm. See also arm-hand.

hand breadth, metacarpal
The maximum linear width of the hand across the distal ends of the metacarpal bones. Measured with the fingers extended and adducted.

hand breadth, thumb
The maximum width of the hand at the level of the distal end of the first metacarpale of the thumb. Measured with the fingers extended and adducted, and the thumb adducted to the side of the plan.

hand circumference
The surface distance around digits II – V at the metacarpal-phalangeal level. Measured with the hand flat and the fingers extended.

hand circumference, overthumb
The surface distance around the hand, in a plane at right angles to the long axis of the hand, passing over the metacarpals and the metacarpal-phalangeal joint of the thumb; also hand circumference including thumb. Measured with the hand flat, the fingers extended, and the thumb aligned with the index finger.

hand control
Any control on a panel or other structure which is used for controlling some process and is normally designed for positioning by the hand.
hand feed
That portion of a machine at which the materials or operating portion are fed for processing at a pace determined by the worker.

hand-held drench shower
A flexible hose connected to a water supply and used to irrigate and flush eyes, face, and body areas in the event of contact with a hazardous material that is corrosive, irritating, absorbed through the skin, etc.

hand hole
A slot in the side or end of a container used for carrying items.

hand length
The linear distance from the plane where the base of the hand/thumb joins the wrist in the fleshy tip of the middle finger (digit III) parallel to the longitudinal axis of the hand. Measured with the fingers extended and adducted, the wrist rotated/supinated into the anatomical position.

hand-operated switch
A non-interlocked switch which can only be operated manually.

hand protection
Gloves, or other type hand protection which will prevent the harmful exposure of the wearer to hazardous materials.

hand rail
A single bar or pipe supported on brackets from a wall or partition, as on a stairway or ramp, to furnish persons with a handhold in case of tripping.

hand steadiness
A measure of the ability to sustain a fixed position of the hand and/or finger with minimal tremor. Also referred to as manual steadiness. See also arm-hand steadiness.

hand thickness, metacarpale III
The thickness of the metacarpo-phalangeal joint of the middle finger (digit III). Measured with the hand flat, fingers extended and adducted.

hand tool
Any small tool capable of being held and used easily by one or both hands for manufacturing, servicing, or other activities.

handcontroller
A small device, usually grasped by or fitting the hand, which responds to axial and/or rotational movements for allowing an operator to control a larger/stronger/remote system.

handedness
A preference for using one arm-hand or the other, or a combination of the two.

handhold
A structure consisting of a segment which normally is an elliptical- or rod-shaped cross-section and of suitable outside perimeter and length to permit a hand to grasp it for carrying, for assistance in remaining in a desired position, or for mobility.

handicap
(1) A compensating factor which attempts to equalize performance levels on one or more aspects in some activity. (2) A physical or mental condition which prevents an individual from functioning at a normal performance level, especially referring to those functions such as activities of daily living.

handle
(1) A structure designed for gripping an object. (2) To move an object or material from one location to another, via a suitable combination of motions.

handling
Physically moving cargo between point-of-rest and any place on the terminal facility, other than the end of ship's tackle.

handling aid
See job aid.

handling structures
Structures such as beams, plates, channels, angles, and rods assembled with bolts, pins, and/or welds. Includes lifting, supporting, and manipulating equipment such as lifting beams, support stands, spin tables, rotating devices, and fixed and portable launch support frames.

handling time
The period of time required to move parts or materials to or from a work area or operation.

handoff
Aviation. A Controller action taken to transfer the radar identification of an aircraft from one Controller to another if the aircraft will
enter the receiving Controller's airspace and radio communications with the aircraft will be transferred.

**handwear**  
Any form of clothing worn over the hand.

**handwheel**  
A large control device intended for rotation when a mechanism requires a greater amount of torque than can be applied by a knob.

**handy line**  
A small line used to throw between separated barges or boat and shore, (i.e., heaving line).

**hanging wall**  
Of the two sides of a fault, the side above the fault plane. It is called the hanging wall because where faults have been "filled in" with mineral deposits and then mined, this is the side on which miners can hang their lanterns. See also **footwall**.

**hangnail**  
A shred of epidermis at one side of a nail. Hangnail is prevented by gently pushing the cuticle instead of cutting it, and it is treated by clipping off the shred of skin and applying antiseptic to the area to prevent infection.

**HANS™**  
See **Head And Neck Support**.

**happiness sheet**  
*slang* A written survey obtained from students at the end of a course or training session to provide feedback to the instructor regarding various aspects of the training.

**HAPS**  
Hazardous air pollutants.

**haptic**  
Pertaining to the sensation of pressure.

**haptophore**  
*Anatomy.* The specific group of atoms in a toxin molecule by which it attaches itself to another molecule. It is capable of neutralizing antitoxin and of acting as an antigen to stimulate specific antitoxin production by body cells.

**harassment of wildlife**  
Any act of pursuit, torment, or annoyance which has the potential to injure wildlife or has the potential to disturb wildlife by causing disruption of behavioral patterns, including, but not limited to, migration, breathing, nursing, breeding, feeding, or sheltering.

**harbor**  
An area of water where ships, planes, or other watercraft can anchor or dock. See also **port**.

**harbor line**  
See **permit line**.

**harbor master**  
*Maritime Safety.* An officer who attends to the berthing, etc. of ships in a harbor.

**hard hat**  
A safety helmet maintained in position on the head by straps, for protecting the wearer from being injured by falling objects.

**hard light**  
A light source which causes objects to cast well-defined shadows.

**hard palate**  
The anterior portion of the roof of the mouth, backed by the maxilla and palatine bones and covered by mucous membranes. See also **soft palate**.

**hard soap**  
Any soap made with sodium hydroxide and packaged in bar form.

**hard water**  
Alkaline water containing dissolved salts that interfere with some industrial processes and prevent soap from lathering.

**hardcopy**  
A paper or other sheeted material display.

**hardware**  
*Computers.* The physical equipment used in processing. The equipment or components made of physical materials, often referring to...
electronics and structural portion of a computer.

**hardwired**
A system in which there is a direct connection of components by electrical wires or cables.

**harelip**
Congenitally cleft lip.

**harmful**
Term indicating the potential for an agent or condition to produce injury or an adverse health effect.

**harmful quantities of oil discharge**
Any discharge that violates a water quality standard or causes a film or sheen upon the surface of the water.

**harmful quantity**
With regard to oil and hazardous substances, those which may be harmful to the public health or welfare and includes harm to fish, shellfish, wildlife, and public and private property, shorelines, and beaches. EPA further defines a hazardous quantity of oil as an amount which either violates applicable water quality standards, or causes a surface film or sheen, or a discoloration of the water or adjoining shoreline.

**harmless error doctrine**
The doctrine that minor or harmless errors during a trial do not require reversal of the judgement by an appellate court. An error which is trivial or formal or merely academic and was not prejudicial to the substantial rights of the party assigning it, and in no way affected the final outcome of the case.

**harmonic**
In acoustics, a tone in the harmonic series of overtones that are produced by the fundamental tone. A frequency component at a frequency that is an integer multiple of the fundamental frequency. *See also harmonic series.*

**harmonic motion**
*See simple harmonic motion.*

**harmonic series**
A set of overtones whose frequencies are separated by integral multiples of the fundamental frequency.

**harmonic vibration**
*See simple harmonic motion.*

**Harmonized System of Codes**
An international goods classification system for describing cargo in international trade under a single commodity coding scheme. This code is a hierarchically structured product nomenclature containing approximately 5,000 headings and subheadings.

**harness**
Any combination of straps intended to hold an occupant of a vehicle in his/her seat, especially those straps holding the torso against the seatback.

**Harrison Antinarcotic Act**
A federal law, enacted March 1, 1915, that regulates the possession, sale, purchase, and prescription of opium and cocoa and all their preparations, natural and synthetic derivatives, and salts. These include the drugs cocaine, morphine, codeine, and papaverine. Laws patterned after the Harrison Antinarcotic Act in some states prohibit the possession or sale of derivatives of barbituric acid except under proper licenses, so that they may not be dispensed without a prescription.

**Hashimoto's disease**
A progressive disease of the thyroid gland with degeneration of its epithelial elements and replacement by lymphoid and fibrous tissue. Also called *struma lymphomatosis.*

**hashish**
The stalks and leaves of the hemp plant, cannabis, with narcotic properties similar to those of marijuana.

**hat**
Any head covering made largely of soft materials, but having a rigid shape.

**HAT**
*See height above touchdown.*

**hatch**
A full-body or materials passageway through some solid structure which may be sealed to separate different fluids or pressures.

**haulage cost**
Cost of loading ore at a mine site and transporting it to a processing plant.

**hauling post holes**
*Transit (slang).* Driving an empty truck or trailer.
have numbers
Aviation. Communication protocol. Term used by pilots to inform Air Traffic Control (ATC) that they have received runway, wind, and altimeter information only.

HAVS
Hand arm vibration syndrome.

hawser
A tow line.

Hawthorne effect
A phenomenon in which employee-perceived interest by the employer proved to be a factor in productivity and employee moral. Specifically, intentional variations in physical work environment variables (such as lighting, ventilation, noise, etc.) were examined in an experiment and resulted in conclusions that were opposite to those expected (i.e., employees worked harder when environmental conditions were made worse) thereby confounding the experiment. Apparently, it did not matter what the employer did to affect the environmental conditions. The employees viewed these variations in environmental conditions as interest by the employer in their work. They therefore worked harder to impress their employers. This phenomenon is based on a study conducted at the Western Electric Company Hawthorne Works plant in Chicago, Illinois. It is often generalized to apply to confounded results from unconsidered variables in experiments.

hay fever
An allergy characterized by sneezing, itchy and watery eyes, running nose, and burning palate and throat. Like all allergies, hay fever is caused by sensitivity to certain substances—most commonly pollens and the spores of molds. Pollen is the fertilizing element of flowering plants. It is a fine dust, easily airborne, that enters the body by inhalation. Hay fever deserves to be recognized as more than a mere nuisance. By causing lack of sleep and loss of appetite, it can lower the body's resistance to disease. It can cause inflammation of the ears, sinuses, throat, and bronchi. A number of hay fever sufferers develop asthma.

hazard
(1) General. A risky, perilous, or dangerous condition or situation that could result in the exposure of individuals to unnecessary physical or health risks. Hazards can be biological, chemical, physical, mechanical, human-made, or naturally occurring. (2) Safety. A dangerous condition, potential or inherent, that can interrupt or interfere with the expected orderly progress of an activity. It is any real or potential condition which either has previously caused or could reasonably be expected to cause personal injury or property damage. (3) System Safety. A condition or situation that exists within the working environment capable of causing an unwanted release of energy resulting in physical harm, property damage, or both. (4) Toxicology. Potential for harm to humans or what they value. For toxic substances, hazard refers to the probability that injury will occur under stated sets of exposure conditions. (5) Industrial Hygiene. A material poses a hazard if it is likely that an individual will encounter a harmful exposure to it. Hazard is the estimated potential of a chemical, physical agent, ergonomic stress, or biologic organism to cause harm based on the likelihood of exposure, the magnitude of exposure, and the toxicity or effect. (6) Law. A risk or peril, assumed or involved, whether in connection with contract relation, employment, personal relation, sport, or gambling. A danger or risk lurking in a situation which by change or fortuity develops into an active agency of harm. Exposure to the chance of loss or injury. (7) Insurance. The risk, danger, or probability that the event insured against may happen, varying with the circumstances of the particular case.

hazard analysis
The analysis of systems, processes, and/or procedures to determine potential hazards and recommended actions to eliminate or control those hazards.

hazard and operability study (HAZOP)
A formal, structured investigative system for examining potential deviations of operations from design conditions that could create process-operating problems and hazards.

hazard classification
Designation of relative accident potential based on the likelihood that an accident will occur.
Hazard Communication Standard
An regulatory requirement, as promulgated by OSHA (29 CFR 1910.1200) that establishes requirements for the evaluation of the hazards of chemicals used in industry, labeling of chemical containers, preparation of material safety data sheets (MSDS), training of employees and the provisions of employee access to information about the potential hazards of chemicals they handle. Also known as "Right to Know" or "Worker Right to Know."

hazard correction
The elimination or control of a workplace hazard in accord with the requirements of applicable federal or state statutes, regulations, or standards.

hazard elimination
The removal of a known, already existing hazard.

hazard identification
See hazardous identification.

hazard pay
See hazardous duty pay.

hazard probability
A measure of the likelihood that a condition or set of conditions will exist or occur in a given situation or operating environment.

hazard proof
A method of making electrical equipment safe for use in hazardous locations; these methods include explosion proofing, intrinsically safe, purged, pressurized, and nonincendary, and must be rated for the degree of hazard present.

hazard quotient
The ratio of a single substance exposure level over a specified period of time (e.g., chronic) to a reference dose for that substance derived from a similar exposure period.

hazard ranking system
See hazardous ranking system.

hazard recognition
In terms of OSHA compliance, a concept based upon the premise that hazardous conditions cannot be eliminated or controlled until they are first recognized as such by the employer. An important concept since employers cannot be held in violation of a requirement if they did not recognize that the hazardous condition existed.

hazard risk index
See risk assessment code.

hazard severity
A categorical description of hazard level or degree, based upon real or perceived potential for resulting in harm, injury, and/or damage caused by a given hazard condition.

hazard to navigation
Marine Safety. For the purpose of 49 CFR 195, a pipeline where the top of the pipe is less than 12 inches below the seabed in water less than 15 feet deep, as measured from the mean low water.

hazard warning signal
Transit. Lamps that flash simultaneously to the front and rear, on both the right and left sides of a commercial motor vehicle, to indicate to an approaching driver the presence of a vehicular hazard.

hazard zone
(1) DOT. One of four levels of hazard (Hazard Zones A through D) assigned to gases, as specified in 49 CFR 173.116(a), and one of two levels of hazards (Hazard Zones A and B) assigned to liquids that are poisonous by inhalation, as specified in 49 CFR 173.133(a). A hazard zone is based on the LC50 value for acute inhalation toxicity of gases and vapors, as specified in 49 CFR 173.133(a). (2) Maritime Navigation. An area identified as a danger to maritime navigation.

hazardous
Exposed to or involving danger; perilous; risky; involving risk of loss.

hazardous air pollutants
Air pollutants which are not covered by ambient air quality standards but which, as defined in the Clean Air Act, may reasonably be expected to cause or contribute to irreversible illness or death. Such pollutants include asbestos, beryllium, mercury, benzene, coke oven emissions, radionuclides, and vinyl chloride.

Hazardous and Solid Waste Amendments of 1984 (HSWA)
A set of statutory amendments that expanded and strengthened the Resource Conservation and Recovery Act (RCRA) of 1976.

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hazardous area reporting service
Flight monitoring for Visual Flight Rules (VFR) aircraft crossing large bodies of water, swamps, and mountains. This service is provided for the purpose of expeditiously alerting Search and Rescue (SAR) facilities when required. Radio contacts are desired at least every 10 minutes. If contact is lost for more than 15 minutes, SAR will be alerted.

hazardous assessment
Help to define the potential adverse health or environmental effects associated with chemicals on site, the potential magnitude to exposure, and the frequency of exposure.

hazardous atmosphere
(1) General. Any atmosphere which is oxygen deficient or contains toxic or other types of health hazards at concentrations exceeding established exposure limits. It is also considered to be an atmosphere that may expose personnel to the risk of death, incapacitation, or impairment of one's ability for self-rescue, injury, or illness. (2) As pertains to confined spaces, an atmosphere that may expose employees to the risk of death, incapacitation, impairment of ability to self-rescue (that is, escape unaided from a permit space), injury, or acute illness from one or more of the following causes:

(1) Flammable gas, vapor, or mist in excess of 10 percent of its lower flammable limit (LFL).

(2) Airborne combustible dust at a concentration that meets or exceeds it LFL. This concentration may be approximated as a condition in which the dust obscures vision at a distance of 5 feet (1.52 m) or less.

(3) Atmospheric oxygen concentration below 19.5% or above 23.5%.

(4) Atmospheric concentration of any substance for which a dose or a permissible exposure limit is published in Subpart G, Occupational Health and Environmental Control, or in Subpart Z, Toxic and Hazardous Substances, of OSHA 29 CFR 1910 and which could result in employee exposure in excess of its dose or permissible exposure limit. An atmospheric concentration of any substance that is not capable of causing death, incapacitation, impairment of ability to self-rescue, injury, or acute illness due to its health effects is not covered by this provision.

(5) Any other atmospheric condition that is immediately dangerous to life or health. For air contaminants for which OSHA has determined a dose or permissible exposure limit, other sources of information, such as material safety data sheets that comply with the hazard communication standard (OSHA 29 CFR 1910.1200), published information, and internal documents can provide guidance in establishing acceptable atmospheric conditions.

hazardous chemical
According to OSHA (29 CFR 1910.1200), any chemical that is a health or physical hazard and for which there is statistically significant evidence that acute or chronic health effects may occur in exposed individuals.

hazardous condition
Circumstances which are causally related to an exposure to a hazardous material.

hazardous employment
High risk and extra perilous work. When used in the context of workers' compensation, it refers to employment which requires the employer to carry workers' compensation coverage or its equivalent regardless of the number of employees.

hazardous duty pay
The additional monetary compensation given to workers performing dangerous tasks.

hazardous goods
The categories of hazardous goods carried by inland waterways are those defined by the European Provisions concerning the International Carriage of Dangerous Goods by Inland Waterways.

hazardous identification
(1) The identification of those chemicals that may pose a threat to human health or the environment. (2) An initial evaluation of media (air, water, soil, etc.) that may be contaminated and the chemicals that are most likely to present a public health threat.

Hazardous In-flight Weather Advisory Service (HIWAS)
Continuous recorded hazardous in-flight weather forecasts broadcasted to airborne pi-
lots over selected very high frequency omni-directional (VOR) outlets defined as an HI-WAS BROADCAST AREA.

hazardous insurance
Insurance effected on property which is in unusual or peculiar danger of destruction by fire, or on the life of a person whose occupation exposes him/her to special or unusual perils.

hazardous LBB
A pressure vessel that exhibits a *leak before burst*, or LBB, failure mode and contains a hazardous material.

hazardous liquid
*D.O.T.* (1) Liquefied Natural Gas (LNG) or a liquid that is flammable or toxic. (2) Petroleum, petroleum products, or anhydrous ammonia.

hazardous material (HAZMAT)
(1) General. Any substance or compound that has the ability to produce an adverse health effect in a worker. (2) *D.O.T.* A substance or material which has been determined by the Secretary of Transportation to be capable of posing an unreasonable risk to health, safety, and property when transported in commerce, and which has been so designated. The term includes hazardous substances, hazardous wastes, marine pollutants, and elevated temperature materials as defined in this section, materials designated as hazardous under the provisions of 49 CFR 172.101 and 172.102, and materials that meet the defining criteria for hazard classes and divisions in 49 CFR 173. *See also highly volatile liquid and marine pollutant.*

hazardous material employee
A person who is employed by a HAZMAT employer and who in the course of employment directly affects hazardous materials transportation safety. This term includes an owner-operator of a motor vehicle which transports hazardous materials in commerce. This term includes an individual, including a self-employed individual, employed by a HAZMAT employer who, during the course of employment: a) loads, unloads, or handles hazardous materials; b) tests, reconditions, repairs, modifies, marks, or otherwise represents containers, drums, or packaging as qualified for use in the transportation of hazardous materials; c) prepares hazardous materials for transportation; d) is responsible for safety of transporting hazardous materials; or e) operates a vehicle used to transport hazardous materials.

hazardous material employer
A person who uses one or more of its employees in connection with transporting hazardous materials in commerce; causing hazardous materials to be transported or shipped in commerce; or representing, marking, certifying, selling, offering, reconditioning, testing, repairing, or modifying containers, drums, or packaging as qualified for use in the transportation of hazardous materials. This term includes an owner-operator of a motor vehicle which transports hazardous materials in commerce. This term also includes any department, agency, or instrumentality of the United States, a State, a political subdivision of a State, or an Indian tribe engaged in an activity described in the first sentence of this definition.

hazardous material residue
The hazardous material remaining in a packaging, including a tank car, after its contents have been unloaded to the maximum extent practicable and before the packaging is either refilled or cleaned of hazardous material and purged to remove any hazardous vapors.

Hazardous Material Transportation Act of 1974 (HMTA)
This statute provides the United States Department of Transportation with the authority to issue and enforce requirements for the packaging, labeling, and transporting of all hazardous materials including wastes. These requirements cover transportation by air, water, rail, or highway.

hazardous materials
(1) General. Liquids, gases, or solids that may be toxic, reactive, or flammable or that may cause oxygen deficiency either by themselves or in combination with other materials. (2) *D.O.T.* Any toxic substance, explosive, corrosive material, combustible material, poison, or radioactive material that poses a risk to the public's health, safety, or property when transported in commerce.
**Hazardous Materials Incident Report System (HMIRS)**

HMIRS contains hazardous material spill incidents reported to the Department of Transportation.

**hazardous pressure systems**

Systems used to store and transfer hazardous fluids such as cryogens, flammables, combustibles, hypergols, etc.

**hazardous ranking system (HRS)**

The principle screening tool used by the EPA to evaluate risks to public health and the environment associated with abandoned or uncontrolled hazardous wastes sites. The HRS calculates a score based on the potential of hazardous substances spreading from the site through the air, surface water, or groundwater and on other factors such as nearby populations. This score is the primary factor in deciding if the site should be on the National Priorities List and, if so, what ranking it should have compared to other sites.

**hazardous ranking system factor**

Primary rating elements internal to the hazardous ranking system (HRS). See also hazardous ranking system.

**hazardous ranking system factor category**

Set of HRS factors, such as likelihood of release (or exposure), waste characteristics, targets. See also hazardous ranking system.

**hazardous ranking system migration pathways**

HRS groundwater, surface water, and air migration pathways. See also hazardous ranking system.

**hazardous ranking system pathway**

Set of HRS factor categories combined to produce a score to measure relative risks posed by a site in one of four environmental pathways (i.e., groundwater, surface water, soil, and air). See also hazardous ranking system.

**hazardous ranking system site score**

A composite of the four HRS pathway scores. See also hazardous ranking system and hazardous ranking system pathway.

**hazardous secondary materials**

As defined by the Resource Conservation and Recovery Act (RCRA), any spent materials, sludges, byproducts, commercial chemical products, and scrap metals.

**hazardous substance**

(1) General. Any material that poses a threat to human health and/or the environment. Typical hazardous substances are toxic, corrosive, ignitable, explosive, or chemically reactive. (2) EPA. Any substance designated by the EPA to be reported if a designated quantity of the substance is spilled in the waters of the United States or if otherwise emitted to the environment. (3) DOT. A material, and its mixtures or solutions, that a) is identified in the appendix to 49 CFR 172.101; b) is in a quantity, in one package, which equals or exceeds the reportable quantity (RQ) listed in Appendix A to 49 CFR 172.101; and c) when in a mixture or solution which, for radionuclides, conforms to paragraph 6 of Appendix A, or, for other than radionuclides, is in a concentration by weight which equals or exceeds the concentration corresponding to the Reportable Quantity (RQ) of the material, as shown in the table appearing in 49 CFR 171.8. This definition does not apply to petroleum products that are lubricants or fuels.

**hazardous waste**

(1) Byproducts of society that can pose a substantial or potential hazard to human health or the environment when improperly managed. Possesses at least one of four characteristics (ignitability, corrosivity, reactivity, or toxicity), or appears on any special EPA list. (2) A hazardous material generated as the result of an industrial, research, commercial, domestic, or institutional process for which no intended further use or reuse is anticipated. (3) A solid waste or a combination of solid wastes which, because of its quantity, concentration, or physical, chemical, or infectious characteristics may cause, or significantly contribute to an increase in mortality or an increase in or pose a substantial present or potential hazard to human health or the environment when properly treated, stored, transported, or disposed of, or otherwise managed. (4) Any material that is subject to the hazardous waste manifest requirements of the Environmental Protection Agency (EPA) specified in 40 CFR 262 or would be subject to these requirements absent an interim authorization to a State under 40 CFR 123, subpart F.
hazardous waste management
According to the Federal Solid Waste Disposal Act: The systematic control of the collection, source separation, storage, transportation, processing, treatment, recovery, and disposal of hazardous wastes.

hazardous waste stream
Material containing hazardous substances, as defined by CERCLA, that are deposited, stored, disposed, or placed in, or that otherwise migrated to, a source.

hazards analysis
The procedure involved in identifying potential sources of release of hazardous materials from fixed facilities or transportation accidents; determining the vulnerability of a geological area to a release of hazardous materials; and comparing hazards to determine which present greater or lesser risks to a community.

hazards identification
(1) Providing information on which facilities have extremely hazardous substances, what those chemicals are, and how much there is at each facility. The process also provides information on how the chemicals are stored and whether they are used at high temperatures. (2) The process of determining whether or not exposure to an agent can cause an increase in the incidence of a particular adverse health effect (e.g., cancer, birth defect) and whether the adverse health effect is likely to occur in humans. See also hazards identification.

HazCAT
A procedure or set of procedures developed for systematically performing simple, on-site analytical tests for determining the chemical nature (generically) of unknown, potentially hazardous materials.

haze
(1) Fine dry or wet dust or salt particles dispersed through a portion of the atmosphere. Individually these are not visible but cumulatively they can diminish visibility. (2) A cloudiness in a surface or coating.

head
(1) Pressure Systems. Term used for indicating pressure such as a head of one inch water gauge. (2) Hydrology. The product of the water's weight and a usable difference in elevation gives a measurement of the potential energy possessed by water. (3) Military. Marine restroom facility. (4) Anatomy. That part of the human body superior to the neck when standing erect, including the skull and facial bones, skin, brain, and other associated tissues. Also, a point of origin, as in a muscle.

Head And Neck Support (HANS™)
A head, neck, and upper torso restraint modeling system, consisting of a helmet and tethers, for minimizing neck injuries in a vehicular crash.

head breadth
The maximum linear side-to-side width of the head superior to the auricles. Measured at whatever level provides the maximum, with minimal tissue compression.

head circumference
The maximum surface distance around the head, including the hair, at a level just above, but not including, the brow ridges. Measured
with hair compression. Also referred to as occipitofrontal circumference.

**head diagonal, inion to pronasale**
The linear distance from inion to provasale. Measured with the face and scalp muscles relaxed, without tissue compression.

**head diagonal, maximum, menton to occiput**
The maximum linear distance from menton to occiput. Measured with the face and scalp muscles relaxed, without tissue compression.

**head diagonal maximum, nuchale to pronasale**
The maximum linear distance from nuchale to pronasale. Measured with the face and scalp muscles relaxed, without tissue compression.

**head-down display**
A display, generally located on a control panel, which requires the operator to lower his/her normal line of sight to obtain the desired information.

**head height**
The vertical distance between tragion or the lowest point on the inferior orbit and the horizontal plane which intersects the vertex in the midsagittal plane. This uses a restricted definition of "head."

**head impact area**
Automotive Safety Design. All nonglazed surfaces of the interior of a vehicle that are statically contactable by a 6.5-inch diameter spherical head form of a measuring device having a pivot point to "top-of-head" dimension infinitely adjustable from 29 to 33 inches in accordance with the procedure explained in 49 CFR 390.5.

**Head Injury Criterion (HIC)**
A measure for determining the tolerance to concussion in a head impact, based on the duration and acceleration involved. An HIC value of 1000 with a duration of less than 15 msec is an acceptable tolerance.

\[
HIC = \left[ \frac{t_2 - t_1}{t_2 - t_1} \int_{t_1}^{t_2} a(t)dt \right]^{2.5}
\]

where:
- \( t_1 \) = start time of impact
- \( t_2 \) = end time of impact
- \( a(t) \) = acceleration function (in g units)

**head lamps**
Lamps used to provide general illumination ahead of a motor vehicle.

**head length**
See glabella – inion length.

**head length, maximum**
The horizontal linear distance between pronasale and inion in the midsagittal plane.

**head log**
Maritime. The heavily reinforced section at each end of the barges and at the bow of the towboat to take the pressure of pushing the entire tow.

**head-mounted display (HMD)**
Any system which can be attached to the head, neck, and/or shoulders for enabling presentation of a head-up display.

**head movement**
Any motion of the head as a unit, relative to the torso.

**head of bend**
Maritime. The top or upstream beginning of a bend.

**head of navigation**
The furthest (upriver) location on a river deep enough for navigation.

**head of passes**
A point near the mouth of the Mississippi River where the three principal distributary passes diverge. It is the point from which river distances are measured.

**head-on collision**
(1) General Transit. Refers to a collision where the front end of one vehicle collides with the front-end of another vehicle while the two vehicles are traveling in opposite directions. (2) Rail Operations. A collision in which the trains or locomotives involved are traveling in opposite directions on the same track.

**head on landing**
Maritime. Landing in which the bow of the boat only is made fast.

**head scan**
Scan through the visual environment using head movements, allowing for accompanying eye movements.
head-up display (HUD)
A display in which information is presented on a nearby transparent surface such that the operator is capable of viewing both the information and the external world with his/her normal line of sight.

headache
A pain or ache in the head. One of the most common ailments of man, it is a symptom rather than a disorder in itself. It accompanies many diseases and conditions, including emotional distress. Although recurring headache may be an early sign of serious organic disease, relatively few headaches are caused by disease-induced structural changes. Most result from vasodilation of blood vessels in tissues surrounding the brain, or from tension in the neck and scalp muscles.

headache rack
_Transit (slang)._ Heavy bulkhead that extends over cab from trailers, usually made of pipe and used in steel hauling.

header bar
The rear cross piece on open top trailer.

header board
A protective shield at the front end of a flat-bottom trailer to prevent freight from shifting forward.

headform
An object whose shape resembles that of the human head for sizing, modeling, or simulation purpose.

headgear
Any protective structure worn on the head to protect the individual from possible injury due to hazards, usually from impacts.

headgear retention
A measure of the ability of a piece of headgear to remain in place during an impact and any post-impact events.

headgear retention assembly
Any combination of chinstraps, internal form fitting, or other techniques to aid in headgear retention.

headline
A mooring line used in combination to hold a fleet or barge "in."

headrest
Any padded structure which provides support to the head when sitting or reclining.

headroom
That distance available to accommodate an individual's head, generally referring to that distance between the vertex of an individual's head and a roof, passageway, or other limiting environmental feature when standing, sitting, walking, or other motion/posture as the situation requires.

headset
A device having one or a pair of transducers for converting electrical energy to sound and having a spring mechanism or other device over the head, under the jaw, or around the neck to hold it/them in place.

headwaters
The upper part of a river system, denoting the upper basin and source streams of a river.

headwear
Any form of clothing worn only on or around the head, such as a hat, cap, or helmet.

headway
The time interval between transit revenue vehicles passing a specified location.

healing
The restoration of structure and function of injured or diseased tissues. The healing processes include blood clotting, tissue mending, scarring, and bone healing.

health
A state in which an individual's and/or population's mental, physical, physiological, and social conditions are within normal limits. _See also mental health and physical health._

health and safety study
As defined by TSCA, any study of any effect of a chemical substance or mixture on health and/or the environment, including underlying epidemiological studies, studies of occupational exposure, toxicological, clinical, and ecological studies of a chemical substance or mixture.

health assessments
Under the Federal Solid Waste Disposal Act: Includes preliminary assessments of the potential risk to human health posed by individual sites and facilities subject to the Federal Solid Waste Disposal Act, based on such factors as the nature and extent of contamination, the existence of a potential for pathways of human exposure (e.g., ground or
surface water contamination, air emissions, and food chain contamination), the size and potential susceptibility of the community within the likely pathways of exposure, the comparison of expected human exposure levels to the short-term and long-term health effects associated with identified contaminants and any available recommended exposure or tolerance limits for such contaminants, and the comparison of existing morbidity and mortality data on diseases that may be associated with the observed levels of exposure. The assessment includes evaluation of the risks to the potentially affected population from all sources of such contaminants, including known point or non-point sources other than the site or facility in question. A purpose of such preliminary assessments shall be to help determine whether full-scale health or epidemiological studies and medical evaluations of exposed populations shall be taken.

**health care facilities**
Buildings or protons of buildings and mobile homes that contain, but are not limited to, hospitals, nursing homes, extended care facilities, clinics, and medical and dental offices, whether fixed or mobile.

**health hazard**
A property of a chemical, mixture of chemicals, physical stress, pathogen, or ergonomic factor for which there is statistically significant evidence, based on at least one test or study conducted in accordance with established scientific principles, that acute or chronic adverse health effects may occur among workers exposed to the agent.

**health index**
Any qualitative or quantitative measure for describing the relative or absolute health of an individual or a population.

**health insurance**
A program which includes come percentage of payment or reimbursement for medical, dental, vision, counseling, and/or other care beyond a specified deductible limit. Often a fringe benefit paid at least in part by employers and generally used to provide financial protection in the event of a major family health problem.

**health physicist**
An individual trained in radiation (ionizing) physics, its associated health hazards, the means to control exposures to this physical hazard, and in establishing procedures for work in radiation areas.

**health physics (HP)**
The branch of radiological science dealing with the protection of personnel from harmful effects of ionizing radiation.

**Health Physics Society (HPS)**
Professional society of persons active in the field of health physics, the profession devoted to the protection of people and their environment from radiation hazards.

**health standard**
Those standards that generally prescribe requirements for worker exposure to hazards presented by toxic substances. Such hazards usually involve the potential for long-term adverse health effects (such as those posed by exposure to lead, noise, asbestos, silica, radiation, vibration, etc.).

**healthy worker effect**
A phenomenon observed in studies of occupational diseases in which workers exhibit lower death rates than the general population because hospitalized, severely ill, and many disabled persons have been excluded from employment and those that are employed are generally healthy.

**hearing**
(1) *Anatomy.* The physiological process of sound perception. That specialized sense through which sound is perceived, by conversion of sound waves into nerves impulses, which are then interpreted by the brain. (2) *Legal.* A legal proceeding convened at an announced time and place for a governmental purpose; for instance, to entertain new legislation, consider promulgating new regulations, hear an applicant for a permit or license, consider revoking or amending such an approval, present evidence, hear motions by parties, or announce decisions. Some hearings are *public hearings* required by law to be conducted with an opportunity for the public to attend. Others are *adjudicatory hearings* where only the interested parties and their representatives and witnesses attend. A *public meeting* at which a board or other tribunal deliberates is not necessarily a *public hearing.*
hearing aid
A device which amplifies sound intensity or filters noise, typically for use by persons with hearing impairments.

hearing conservation
The prevention or minimizing of occupational noise-induced hearing defects through the combined use of hearing protectors, training, the use of engineering and administrative control measures, annual audiometric testing, and the establishment of a written program. The written program is referred to as a hearing conservation program (HCP).

hearing impaired
A person with a hearing loss sufficient to affect their efficiency in the course of everyday living.

hearing impairment
(1) Loss of the ability to hear, either partially or completely. (2) The deviation of an individual's absolute auditory threshold in decibels using a calibrated audiometer or by comparison to the absolute auditory threshold of a person with normal hearing. Also called hearing loss.

hearing level
The deviation, in decibels, of an individual's hearing threshold at various test frequencies as determined by an audiometric test based on an accepted standard reference level. See also hearing threshold.

hearing loss
See hearing impairment.

hearing protection
See hearing protective device.

hearing protective device (HPD)
Any device or material, capable of being worn on the head or in the ear canal, that is sold wholly or in part on the basis of its ability to reduce the level of sound entering the ear. This includes devices of which hearing protection may not be the primary function, but which are nonetheless advertised as providing hearing protection to the user.

hearing scotoma
See tonal gap.

hearing test
Any method of evaluating hearing capabilities. See also audiometry and tuning fork test.

hearing threshold
The weakest or minimally perceived sound, in decibels, that an individual can detect during an audiometric test at a particular time.

hearsay
A term applied to that species of testimony given by a witness who relates, not what he/she knows personally, but what others have told him/her, or what he/she has heard said by others.

heart
The multi-chambered muscular organ within the thorax which pumps blood through the circulatory system.
**heart block**
A condition in which the atria and ventricles of the heart contract independently, causing interference in the rate or regularity of the heartbeat.

**heart failure**
Inability of the heart to perform its proper function of expelling blood from the ventricles.

**heart-lung machine**
A mechanical device that temporarily takes over the functions of the heart and lungs. It is used as an aid during surgery.

**heart murmur**
Any sound in the heart region other than normal heart sounds. A murmur may be caused by several different factors, including changes in the valves of the heart or blood leaking through a disease-scarred valve that does not close properly.

**heart rate**
The number of complete heart contraction cycles per minute. Synonymous with *pulse rate*.

**heartbeat**
The cycle of contraction of the heart muscle, during which the chambers of the heart contract. The beat begins with a rhythmic impulse in the sinoatrial node, which serves as a pacemaker for the heart.

**heartburn**
*(slang)* A burning sensation in the esophagus, or below the sternum in the region of the heart. It is one of the common symptoms of indigestion. See also *reflux esophagitis*.

**heat**
The energy associated with a mass because of random motions of its molecules. It is a form of energy that is transferred between systems by virtue of their individual temperature differences.

**heat acclimatization**
A physiological adjustment to living or working at higher external temperatures and/or humidity.

**heat balance**
The difference between the heat produced by the body and that which is given off to the environment.

**heat capacity**
That heat energy absorbed by an object under given conditions for each degree rise in temperature. See also *specific heat*.

**heat collapse**
See *heat exhaustion*.

**heat conduction**
Heat transfer from one entity to another via direct contact.

**heat conservation**
Any mechanism such as peripheral vasoconstriction, piloerection, or reduction in sweating which may be used to retain heat within the body. Also referred to simply as *heat retention*.

**heat convection**
Heat transfer from one entity to another or within an entity via a fluid capable of storing heat, such as air.

**heat cramps**
A condition related to work and/or exercise in hot environments that causes painful muscle spasms due to heavy swelling and the consumption of large amounts of water without adequate salt intake and adequate exercise-rest balance.

**heat disorder**
Any condition resulting from exposure to heat or hot work environments that results in an adverse effect on the health of the exposed individual. Such disorders include heat cramps, heat exhaustion, heat stress, and heat stroke. Also may be referred to as *heat stress*.

**heat drying**
A process to reduce pathogens in solid waste by drying dehydrated sludge cake by direct or indirect contact with hot gases, and reducing moisture content to ten percent or lower.

**heat exchanger**
Device for transferring heat from one fluid or body to another for the purpose of heating or cooling.

**heat exhaustion**
A potentially dangerous condition caused by work and exertion in high-temperature environments marked by mild elevation in body temperature, weak pulse, pale complexion, dizziness, fainting, profuse sweating, headache, low blood pressure, and cool, moist...
skin. Synonymous with heat collapse and heat prostration.

heat index
See heat stress index.

heat island effect
A "dome" of elevated temperatures over an urban area caused by structural and pavement heat fluxes, and pollutant emissions from the area below the dome.

heat lightning
Distant lightning that illuminates the sky but is too far away for its thunder to be heard.

heat loss
The release of heat from the body to the environment via conduction, convection, radiation, or evaporation.

heat of fusion
The heat released by a liquid freezing to a solid, or that gained by a solid melting to a liquid without a change in temperature.

heat prostration
See heat exhaustion.

heat pyrexia
See heat stroke.

heat radiation
The transfer of heat via electromagnetic radiation. Also called thermal radiation.

heat rash
See miliaria.

heat ray cataract
An opacity in the lens of the eye which occurs in occupations requiring long exposures to high temperatures and glare. See also glass blower's cataract.

heat regulation
See thermoregulation.

heat retention
See heat conservation.

heat strain predictive system
A method for predicting heat stress based on variable clothing effect.

heat stress
Thermal stress upon the body from the surrounding environment, including heat stroke, heat cramps, and heat exhaustion, caused by the body's inability to rid itself of excessive heat. See also heat disorder.

heat stress index (HSI)
Any number of estimators for body heat stress which may be based on temperature, humidity, air velocity, workload, clothing, and their interactions. See also Belding-Hatch heat stress index.

heat stroke
A serious, potentially life-threatening condition marked by a rapid rise in body temperature, hot dry skin, mental confusion, loss of consciousness, convulsions, coma, and the absence of sweating. The condition is caused by excessive physical exertion in hot environments by unacclimatized individuals and dehydration. Recent intake of alcohol may expedite the onset of the condition.

heat syncope
A condition marked by fainting while standing erect and immobile in hot environments caused by the pooling of blood in dilated vessels of the skin and lower part of the body.

heated wire anemometer
See thermoanemometer.

heater
Any device or assembly of devices or appliances used to heat the interior of any motor vehicle. This includes a catalytic heater which must meet the requirements of 49 CFR 177.834(1) when flammable liquid or gas is transported.

Heath-Carter somatotype
A body type classification system which uses a combination of anthropometric measures (such as stature, weight, skinfolds, girths, and breadths) for determining or modifying the basic classifications.

heating degree-day
A form of the degree-day used as an index for fuel consumption.

heating equipment
According to OSHA, 29 CFR 1910.306(g), the term includes equipment used for heating purposes if heat is generated by induction or dielectric methods.

heating, ventilation, and air conditioning (HVAC) system
The system that is in place to provide ventilation, heating, cooling, dehumidification, humidification, control of odors, and cleaning of the air for maintaining comfort, safety, and
health of the occupants of a building, workplace, etc.

**heavy duty scaffold**
A scaffold designed and constructed to carry a working load not to exceed 75 pounds per square foot.

**heavy duty truck**
Truck with a gross vehicle weight generally in excess of 19,500 pounds (class 6-8). Other minimum weights are used by various law or government agencies.

**heavy hauler trailer**
A trailer with one or more of the following characteristics: a) its brake lines are designed to adapt to separation or extension of the vehicle frame; or b) its body consists only of a platform whose primary cargo carrying surface is not more than 40 inches above the ground in an unloaded condition, except that it may include sides that are designed to be easily removable and a permanent "front-end structure" as that term is used in 49 CFR 393.106.

**heavy ion**
An ion having a normal atomic mass equal to or greater than that of carbon.

**heavy lifts**
*Maritime.* Freight too heavy to be handled by regular ship's tackle.

**heavy metal**
Metals such as arsenic, barium, cadmium, chromium, lead, mercury, and silver that do not rapidly break down in the body or the environment and thus can exert toxic effects because of their cumulative or residual properties.

**heavy rail**
(1) An electric railway with the capacity for a "heavy volume" of traffic and characterized by exclusive rights-of-way, multi-car trains, high speed and rapid acceleration, sophisticated signaling, and high platform loading. (2) High-speed, passenger rail cars operating singly or in trains of two or more cars on fixed rails in separate rights-of-way from which all other vehicular and foot traffic is excluded. See also *heavy rail (rapid rail).*

**heavy rail passenger cars**
Rail cars with motive capability, driven by electric power taken from overhead lines or third rails, configured for passenger traffic and usually operated on exclusive rights-of-way.

**heavy rail (rapid rail)**
Transit service using rail cars powered by electricity which is usually drawn from a third rail and usually operated on exclusive rights-of-way. It generally uses longer trains and has longer spacing between stations than light rail.

**heavy work**
That level of work activity which involves the entire body and has a gross metabolic cost of 280 – 380 calories per square meter of skin surface per hour.

**hedonic damages**
Damages awarded in some jurisdictions for the loss of enjoyment of life, or for the value of life itself, as measured separately from the economic productive value that an injured or deceased person would have had. It should be noted that many courts hold that such loss is included in damages for disability and pain and suffering.

**heel**
The calcaneus and surrounding soft tissue of the inferior and posterior portion of the foot.

**heel – ankle circumference**
The surface distance around the foot under the tip of the heel and over the instep at the junction of the foot and anterior lower leg. Measured with minimal tissue compression, minimal weight on the foot being measured, and the foot muscles relaxed.

**heel breadth**
The maximum medial to lateral linear width of the heel behind the vertical projection downward from the ankle bones. Measured with the individual's weight equally distributed on both feet and with minimal tissue compression.

**HEG**
See *homogeneous exposure group.*

**height**
The straight-line vertical distance from the floor or other reference surface to the level of the referenced body part or the top of an object.
**height above airport**
The height of the Minimum Descent Altitude above the published airport elevation. This is published in conjunction with circling minimums. See also minimum descent altitude.

**height above landing (HAL)**
The height above a designated helicopter landing area used for helicopter instrument approach procedures.

**height above touchdown (HAT)**
The height of the Decision Height or Minimum Descent Altitude above the highest runway elevation in the touchdown zone (first 3,000 feet of the runway). Height above touchdown (HAT) is published on instrument approach charts in conjunction with all straight in minimums.

**height/decision altitude**
A specified altitude or height (A/H) in the precision approach at which a missed approach must be initiated if the required visual reference to continue the approach has not been established. *Note 1:* Decision altitude is referenced to mean sea level and decision height is referenced to the threshold elevation. *Note 2:* The required visual reference means that section of the visual aids or of the approach area which should have been in view for sufficient time for the pilot to have made an assessment of the aircraft position and rate of change of position, in relation to the desired flight path.

**height velocity**
The rate at which stature increases during physical maturation.

**helicopter**
(1) A rotorcraft that, for its horizontal motion, depends principally on its engine-driven rotors. (2) A rotary-wing aircraft which depends principally for its support and motion in the air upon the lift generated by one or more power-driven rotors, rotating on substantially vertical axes. A helicopter is a V/STOL (vertical/short takeoff and landing) aircraft. (3) A heavier-than-air aircraft supported in flight chiefly by the reactions of the air on one or more power-driven rotors on substantially vertical axes. See also gyroplane.

**helipad**
A small, designated area, usually with a prepared surface, on a heliport, airport, landing/takeoff area, apron/ramp, or movement area used for takeoff, landing, or parking of helicopters.

**heliport**
(1) An area of land, water, or structure used or intended to be used for the landing and takeoff of helicopters and includes its buildings and facilities if any. (2) An area, either at ground level or elevated on a structure, that is used for the landing and takeoff of helicopters and includes some or all of the various facilities useful to helicopter operations such as helicopter parking, hangar, waiting room, fueling, and maintenance equipment. See also aerodrome, aircraft facility, and airport.

**helistop**
A minimum facility heliport, either at ground level or elevated on a structure for the landing and takeoff of helicopters, but without such auxiliary facilities as waiting room, hangar parking, etc.

**helium**
A chemical element, atomic number 2, atomic weight 4.003, symbol He.

**helix**

**helmet**
(1) A piece of headgear with a hard exterior covering and internal cushioning designed to fit over the top of or enclose the entire head to protect the head from impacts or other hazards. (2) A head protective device consisting of a rigid shell, energy absorption system, and chin strap intended to be worn to provide protection for the head or portions thereof, against impact, flying or falling objects, electric shock, penetration, heat and flame.

**helmet-mounted display (HMD)**
A display projected within or on the visor of a user's helmet such that both the information presented and the external environment are simultaneously within the line of sight.
Helmholtz resonator
A passive acoustical filter consisting of a cavity with a narrow neck and an enlarged interior.

Helmholtz-Kohlrausch effect
A tendency for apparent brightness to increase as color saturation increases.

help
An online software user assistance feature.

hemangioma
A benign tumor made up of newly formed blood vessels, clustered together. Hemangioma may be present at birth in various parts of the body, including the liver and bones. In the majority of cases, however, it appears as a network of small blood-filled capillaries near the surface of the skin, forming a reddish or purplish birthmark. These marks are not malignant.

hematemesis
The vomiting of blood. The appearance of the vomitus depends on the amount and character of the gastric contents at the time blood is vomited and on the length of time blood has been in the stomach. Gastric acids change the bright red blood to a brownish color and the vomitus is often described as "coffee-ground" color. Bright red blood in the vomitus indicates a fresh hemorrhage and little contact of the blood with gastric juices. The most common causes are peptic ulcer, gastritis, esophageal lesions or varices, and cancer of the stomach. Benign tumors, traumatic postoperative bleeding and swallowed blood from points in the nose, mouth, and throat can also produce hematemesis.

hematocrit
The percent by volume of erythrocytes in whole blood.

hematologist
An individual trained in the science encompassing the generation, anatomy, physiology, pathology, and therapeutics of blood.

hematology
The branch of medical science concerned with the generation, anatomy, physiology, and therapeutics of blood. The study of the form and structure of blood-forming organs.

hematomy
(1) An enclosed volume of blood in tissue external to the circulatory system, from whatever cause. (2) A tumor-like mass produced by coagulation of extravasated blood in a tissue or cavity. Contusions (bruises) and black eyes are familiar forms of hematoma that are seldom serious. Hematomas can occur almost anywhere on the body; they are almost always present with a fracture and are especially serious when they occur inside the skull, where they may produce local pressure on the brain. In minor injuries the blood is absorbed unless infection develops. See also bruise.

hematopoietic
Pertaining to or affecting the formation of blood cells.

hematopoietic changes
Changes in the formation of blood cells.

hematotoxicity
The toxic effects of various substances and physical agents in blood and blood-forming organs.

hematuria
Appearance of blood in the urine.

heme
The non-protein, iron-containing part of the hemoglobin molecule that carries oxygen and accounts for the color of blood.

hemi- (prefix) Meaning half; pertaining to one side of the body.

hemianopsia
A unilateral or bilateral blindness in one half of the visual field.

hemiballismus
A unilateral form of ballismus.

hemiplegia
A condition in which one side of the body (especially both limbs) is affected by paralysis. Usually caused by a brain lesion, such as a tumor, or by a cerebral vascular accident. The paralysis occurs on the side opposite the brain disorder.

hemisphere
Half of a spherical or roughly spherical structure or organ.

hemochromatosis
A disorder of iron metabolism with excess deposition of iron in the tissues, skin pig-
mentation, cirrhosis of the liver, and decreased carbohydrate tolerance.

**hemodynamics**
The study of the physical principles of blood and its circulation.

**hemoglobin (Hb)**
The red pigment protein matter in the red blood corpuscles that carries oxygen from the lungs to the tissues and carbon dioxide from the tissue to the lungs. Hemoglobin is a chromoprotein, that is, a protein combined with a colored pigment. The protein is globin; the pigment is heme, which is red. When erythrocytes are broken down, degradation of hemoglobin releases the pigment bilirubin which is converted into pigments responsible for the characteristic color of bile. Heme is a complex molecule containing iron. Hemoglobin has the property of combining chemically with certain gases to form various substances. One of the most important is oxyhemoglobin, formed by the combination of oxygen and hemoglobin. This function of hemoglobin is important in respiration because it provides a means of transporting oxygen from the lungs to the tissues. The oxygen combined with hemoglobin in arterial blood is responsible for its bright red color; venous blood is a darker color because of its lower oxygen content. It is important to note that hemoglobin has an affinity towards carbon monoxide approximately 200 times greater than that for oxygen. This explains why carbon monoxide poisoning can occur so quickly.

**hemoglobinuria**
Excretion of hemoglobin in the urine.

**hemolysis**
Breakdown of red blood cells or erythrocytes with the release of hemoglobin into the blood plasma. This results in hemoglobinuria.

**hemophilia**
A condition characterized by impaired coagulation capability of the blood, and a strong tendency to bleed. The classic disease is hereditary, and limited to males, being transmitted always through the female to the second generation, but many similar conditions attributable to the absence of different factors from the blood are now recognized.

**hemoptysis**
Expectoration of blood or of blood-stained sputum.

**hemorrhage**
The loss of blood from blood vessels and/or capillaries.

**hemorrhoid**
An enlarged blood vessel in the anal or rectal wall that causes pain, itching, discomfort, and bleeding.

**hemostasis**
The stoppage of blood flow or loss.

**hemotherax**
A collection of blood in the pleural cavity.

**hemotoxin**
Any substance that causes destruction of red blood cells.

**henry (H)**
The inductance of a closed circuit in which a potential of one volt is produced when the electric current in the circuit is uniform at one ampere per second.

**Henry’s Law Constant**
Measure of the volatility of a substance in a dilute solution of water at equilibrium. It is the ratio of the vapor pressure exerted by a substance in the gas phase over a dilute aqueous solution of that substance to its concentration in the solution at a given temperature. For hazardous ranking system (HRS) purposes, use the value reported at or near 25°C [atmospheric-cubic meters per mol (atm-m³/mol)].

**HEP**
See human error probability.

**HEPA**
See high-efficiency particulate air filter.

**Hepatitis B Virus (HBV)**
A virus that causes inflammation of the liver. Can also occasionally be caused by toxic agents other than viral.

**hepatotoxic**
Refers to an agent that produces damage to the liver.
Heptachlor
An insecticide that was banned in some food products in 1975 and all of them in 1978. It was allowed for use in seed treatment until 1983. More recently it was found in milk and other dairy products in Arkansas and Missouri, as a result of illegally feeding treated seed to dairy cattle.

herb
A plant which may be used as food flavoring or for medicinal purposes.

herbicide
A chemical pesticide designed to control or destroy plants, weeds, or grasses.

herbivore
An animal that feeds on plants.

here she comes
Term used when another boat appears around a bend.

hereditary mutagenicity
The ability of a chemical to cause an inheritable change in the genetic material (i.e., DNA) or organisms.

heredity
The transmission of characteristics from parent to offspring.

Hering opponent process theory
See opponent process theory.

hermetically sealed
Closed by fusion, gasketing, crimping, or equivalent means so that no gas or vapor can enter or escape.

hernia
A failure/rupture or weakness in the wall of a bodily structure, usually a rupture of the abdominal wall or an intervertebral disk which results in the protrusion of part of an organ or tissue through the failure.

herniate
The creation of a hernia.

herniated disk
A protrusion of the nucleus pulposus of an intervertebral disk into or through the annulus. Commonly referred to as a slipped disk.

heroin
Narcotic drug which is a derivative of opium and whose technical name is diacetyl-morphine. It is classified as a Class A substance for criminal purposes and the penalty for its unlawful manufacture, distribution, sale, or possession is severe.

Hertz (Hz)
(1) A measure of frequency in cycles per second (cps). (2) The standard radio equivalent of frequency in cycles per second of an electromagnetic wave. Kilohertz (kHz) is a frequency of one thousand cycles per second. Megahertz (mHz) is a frequency of one million cycles per second.

hetero-
(prefix) Relating to combinations of different entities.

heterochromatic
Combining or pertaining to two or more different colors.

heterochromatic flicker photometry
A technique used for measuring an observer's relative sensitivity to light of different wavelengths by comparing a fixed-luminance reference light alternating with a light of a different wavelength to minimize the sensation of flicker.

heteromodal
See multisensory.

heterophoria
A tendency to position the eyes such that binocular vision cannot be used.

heterosphere
The region of the atmosphere above about 85 km where the composition of the air varies with height.

heterotroph
An organism that must obtain food energy by ingesting other organic material.

heuristic
Pertaining to a learning or problem-solving technique which uses certain empirical rules or guidelines to ultimately reach a solution.

heuristic program
A set of instructions which directs a computer to use a heuristic approach to problem solving.

hexadecimal
Pertaining to a numbering system based on 16, using the alphanumerics zero through nine and A through F.
HHC
See highly hazardous chemical.

HIC
See Head Injury Criterion.

hiccough
Spasmodic involuntary contraction of the diaphragm that results in uncontrolled breathing in of air. The peculiar noise of hiccoughs is produced by the attempt to inhale while the air passages are partially closed. Also called singultus and hiccup.

Hick-Hyman Law
A rule that the choice reaction time is linearly related to the logarithmic transformation of the amount of stimulus information presented. Represented as follows:
\[ CRT = d + t_b H \]
where:
- \( CRT \) = average choice reaction time
- \( d \) = summed time required for all non-decision-making activities, e.g., stimulus transmission time plus motor response time, assumed to be a constant
- \( t_b \) = time required to process one bit of information, assumed to be a constant
- \( H \) = amount of information in bits (=log₂N), often taken as the number of available choices.

hidden digit test
See Stilling test.

hidden line
A graphic line not displayed on a model, especially a wire-frame model, which would not be visible from a particular view if the model were solid.

hidden window
A display window partially or completely covered by another.

hierarchical decomposition
The breakdown of a high-level task into smaller, lower level steps.

hierarchical menu
A menu structure or format in which each item on a given menu has another menu consisting of a subset of additional selections until the lowest level menu is reached.

high
(1) A general feeling of euphoria produced most commonly by artificial means, such as with drugs or other influencing substances. However, certain naturally occurring influencing factors, such as exercise and laughter, have also been reported to produce a similar feeling presumably due to a release of endorphins. (2) A meteorological phenomenon. See anticyclone.

high blood pressure
A disorder of the circulatory system marked by excessive pressure of the blood against the walls of the arteries. See also hypertension.

high boiling aromatic oils (HBAO)
These are high boiling components produced during catalytic cracking and thermal cracking of petroleum streams, and also during the extraction of lube base stocks. They contain complex mixtures of hydrocarbons in the boiling range of 500-1000°F and have demonstrated carcinogenic potential in animal testing. These are also referred to as aromatic process oils.

high-definition television (HDTV)
A video medium with a resolution of approximately 1200 lines.

high degree of care
See reasonable care.

high density lipoprotein (HDL)
A substance present in blood which functions to return cholesterol to the liver for reprocessing and elimination. Often referred to as the "good cholesterol" because of its ability to reduce overall cholesterol levels of the blood. It is assumed that the higher the HDL level, the healthier the outlook.

high-density polyethylene
A material that produces toxic fumes when burned. Used to make plastic bottles and other products.

high-efficiency particulate air (HEPA) filter
A filter capable of removing 99.97% of all particles with a mean aerodynamic diameter of 0.3 micron. Often used to filter air in air-purifying respirators, vacuum systems, exhaust systems, and fans.

high-energy heavy ion (HZE)
A high-velocity particle consisting of an ionized heavy atom.
**high fidelity**
Pertaining to an audio or graphic (including photographic) reproduction which is comparable with the original.

**high frequency**
The frequency band between 3 and 30 mHz.

**high frequency communications**
High radio frequencies (HF) between 3 and 30 mHz used for air-to-ground voice communication in overseas operations.

**high frequency loss**
In acoustics, refers to the hearing loss in frequency bands of 2000 Hz and above. Also referred to as *high frequency hearing loss*.

**high-hazard contents**
Those contents which are liable to burn with extreme rapidity or from which poisonous fumes or explosions are to be feared in the event of fire.

**high inversion fog**
A fog that lifts above the surface but does not completely dissipate because of a strong inversion (usually subsidence) that exists above the fog layer.

**high-level oversight structure**
With regard to regulatory compliance, full support by a company’s board of directors and senior management of the company’s compliance program.

**high-level radioactive waste (HLW)**
Under the Federal Nuclear Waste Policy of 1982: The aqueous waste resulting from the operation of the first cycle solvent extraction system, or equivalent, and the concentrated waste from subsequent extraction cycles, or equivalent, in a facility for reprocessing irradiated reactor fuels, or irradiated fuel from nuclear power reactors. Includes liquid waste produced directly in reprocessing and any solid material derived from such liquid waste that contains fission products in sufficient concentrations.

**high-mileage households**
Households with estimated aggregate annual vehicle mileage that exceeds 12,500 miles.

**high occupancy vehicle (HOV)**
Vehicles that can carry two or more persons. Examples of high occupancy vehicles are buses, vanpools, and carpools.

**high occupancy vehicle (HOV) lane**
An exclusive road or traffic lane limited to buses, vanpools, carpools, and emergency vehicles.

**high-order detonation**
See *detonation*.

**high-speed cinematography**
The sampling of activities using motion picture film with a frame rate much higher than the normal projection rate.

**high-speed rail**
(1) A rail service having the characteristics of intercity rail service which operates primarily on a dedicated guideway or track not used, for the most part, by freight, including, but not limited to, trains on welded rail, magnetically levitated (MAGLEV) vehicles on a special guideway, or other advanced technology vehicles designed to travel at speeds in excess of those possible on other types of railroads. (2) A rail transportation system with exclusive right-of-way which serves densely traveled corridors at speeds of 124 miles per hour and greater.

**high-speed taxiway**
A long radius taxiway designed and provided with lighting or marking to define the path of aircraft, traveling at high speed (up to 60 knots), from the runway center to a point on the center of a taxiway. Also referred to as long radius exit or turn-off taxiway. The high speed taxiway is designed to expedite aircraft turning off the runway after landing, thus reducing runway occupancy time.

**high task**
See *incentive pace*.

**high type road surface**
Highly flexible, composite, rigid, etc. (Surface/Pavement Type Codes 61, 62, 71-76 and 80).

**high volume air sampler**
Sampling device used for the collection of particulates in the ambient air. One type is employed for collecting PM 10 (particulate materials equal to or less than 10 micrometers in diameter), and another for collecting all
suspended particulates to determine the total suspended particulate concentration.

**high volume area**
*Maritime Emergency Response.* Area where an oil pipeline having a nominal outside diameter of 20 inches or more crosses a major river or other navigable waters which, because of the velocity of the river flow and vessel traffic on the river, would require a more rapid response in case of a worst case discharge or substantial threat of such a discharge from the oil pipeline.

**high water buoy**
Small unlighted buoys permanently secured to the end of dikes, lock walls, bear traps, and other river front structures such as mooring cells for the purpose of marking them during high water when they are submerged.

**high water station**
The location to which lights or buoys are moved when a river is at or near its flood stage, the purpose being a) to guide navigation in the high water and b) to locate the light in a position of security against loss.

**highest degree of care**
That degree of care that a very careful and prudent person would use under the same or similar circumstances. See also great care and care.

**highlight**
Use some feature different from the background to attract a user’s attention to some portion of a display.

**highly hazardous chemical**
Chemicals listed in Appendix A of the OSHA standard related to process safety management of highly hazardous chemicals (OSHA 29 CFR 1910.119). They are substances possessing toxic, reactive, flammable, or explosive properties.

**highly volatile liquid**
A hazardous liquid which will form a vapor cloud when released to the atmosphere and which has a vapor pressure exceeding 276 kPa (40 psia) at 37.8°C (100°F). See also hazardous material.

**highpass filter**
A device which allows frequencies higher than the cutoff frequency to exit from the device unattenuated, while the intensity of frequencies lower than the cutoff frequency is attenuated.

**highway**
(1) Any public street, public alley, or public road. (2) Any road, street, parkway, or freeway/expressway that includes rights-of-way, bridges, railroad-highway crossings, tunnels, drainage structures, signs, guardrail, and protective structures in connection with highways. The highway further includes that portion of any interstate or international bridge or tunnel and the approaches thereto (23 U.S.C. 101a).

**highway capacity manual**
A publication of the Institute of Transportation Engineers defining level of service criteria to determine peak hour traffic congestion.

**highway construction project**
A project financed in whole or in part with federal-aid or federal funds for the construction, reconstruction or improvement of a highway or portions thereof, including bridges and tunnels.

**highway mode**
Consists of public roads and streets, automobiles, vans, trucks, motorcycles, and buses (except local transit buses) operated by transportation companies, other businesses, governments, and households, garages, truck terminals, and other facilities for motor vehicles.

**Highway Performance Monitoring System (HPMS)**
The state/federal system used by the FHWA to provide information on the extent and physical condition of the nation’s highway system, its use, performance, and needs. The system includes an inventory of the nation’s highways including traffic volumes.

**highway-rail crossing**
A location where one or more railroad tracks intersect a public or private thoroughfare, a sidewalk, or a pathway. See also at grade and grade crossings.

**highway-rail crossing accident/incident**
An impact between on-track railroad equipment and a highway user (e.g., an automobile, bus, truck, motorcycle, bicycle, farm vehicle, pedestrian, or other highway user) at a designated crossing site. Sidewalks, pathways, shoulders, and ditches associated with the
crossing are considered to be part of the crossing site. The term "highway user" includes pedestrians, cyclists, and all other modes of surface transportation.

Highway Research Information Service (HRIS)
A computer-based information storage and retrieval system developed by the Transportation Research Board with financial support from the state highway and transportation departments and the Federal Highway Administration. It consists of summaries of research projects in progress and abstracts of published works.

highway trust fund
The federal account established by law to hold receipts collected by the government and earmarked for highway programs and a portion of the federal mass transit program. It is supported by the federal gasoline tax and other user taxes.

highway user fee or tax
A charge levied on persons or organizations based on the use of public roads. Funds collected are usually applied toward highway construction, reconstruction, and maintenance. Examples include vehicle registration fees, fuel taxes, and weight-distance taxes.

hinge joint
The type of joint which permits only a single degree of freedom, as rotation about a pivot point within a plane. In anatomy, the elbow and knee are examples of a hinge joint.

hip
The coxal bone, its joints with the sacrum and femurs, and all the associated surrounding tissues.

hip bone
See coxal bone.

hip breadth, sitting
The maximum horizontal linear distance across the widest portion of the hips. Measured with the individual sitting erect, knees flexed at 90°, knees and thighs together, and feet flat on the floor.

hip breadth, standing
The maximum horizontal linear distance across the lower torso in the hip region. Measured with the individual standing erect, feet together, and his/her weight distributed evenly on both feet.

hip circumference at trochanterion
The surface distance around the hip at the trochanteric height. Measured with the individual standing erect and his/her weight equally distributed on both feet.

hip circumference, sitting
See buttock circumference, sitting.

hip circumference, standing
See buttock circumference.

hip joint
The joint composed of the junction of the femur head and the coxal bone.

Hippocrates
The late 5th century B.C. "Father of Medicine." The son of a priest-physician, he was born on the island of Cos. By stressing that there is a natural cause for disease, he did much to dissociate the care of the sick from the influence of magic and superstition. His carefully kept records of treatment and solicitous observation of the ill provided a foundation for clinical medicine in the case report; and by also reporting unsuccessful methods of treatment, he anticipated the modern scientific attitude. A moral code for medicine has been established by his ideals of ethical conduct and practice as embodied in the Hippocratic Oath.

hiring at will
A general or indefinite hiring with the right to terminate such at the will of the employer.

histamine
A substance produced by the breakdown of histidine, a common amino acid derived from protein that occurs naturally in the body. Histamine is found in all tissues of the body. Although histamine was discovered in 1909, its role is still not fully understood. Histamine normally functions as a stimulant to the production of gastric juice. It also dilates the small blood vessels, as part of the regular adaptation of the body to changing inner and exterior conditions. An excess of histamine can dilate blood vessels to the extent that extravasation occurs. This appears as the reddening and swelling known as inflammation. Continued extravasation causes edema.
histidine
A naturally occurring amino acid, essential for optimal growth of infants.

histogram
A graphical representation of two or more amplitude measures using rectangular shapes along either a discrete or continuous dimension. More commonly referred to as a bar graph or bar chart.

histology
The study of the structure of tissues.

histolysis
Process whereby tissue is broken down.

histopathology
Pathologic histology or the change in the function of tissues as a result of a disease.

histoplasmosis
Bacterial infection resulting from the inhalation of the spores of Histoplasma Capsulatum. Occupations at risk are those associated with the raising and processing of fowl.

historic site
Any building, structure, area, or property that is significant in the history, architecture, archeology or culture of a state, its communities, or the nation and has been so designated pursuant to a statute. Such structures or properties are commonly statutorily protected and cannot be altered without permission of the appropriate authorities.

historical data
That data which have been previously collected in a given work situation and serve as a standard reference for performance. Typically refers to historical time, but not necessarily restricted to that.

histotoxic hypoxia
An inability of the tissues to use oxygen, even though it is present in amounts equal to or greater than normal.

hit and run
A hit-and-run occurs when a motor vehicle in transport, or its driver, departs from the scene after being involved in a crash prior to police arriving on the scene. Fleeing pedestrians and motor vehicles not in transport are excluded from the definition. It does not matter whether the hit-and-run vehicle was striking or struck. See also crash.

HIV
See human immune deficiency virus. Also called human immunodeficiency virus.

HIWAS
See Hazardous In-flight Weather Advisory Service.

HLSC
See human life cycle safe concentration.

HLW
See high-level radioactive waste.

HMD
See head-mounted display and/or helmet-mounted display.

HMI
See human-machine interface.

HMTA

hoarfrost
See frost.

hobo
Transit (slang). A tractor that is shifted from terminal to terminal.

Hodgkin's disease
A painless, progressive, and fatal condition characterized by pruritus and enlargement of the lymph nodes, spleens, and lymphoid tissue generally, which often begins in the neck and spreads through the body. Although Hodgkin's disease can occur at any age, it affects primarily those between the ages of 20 and 40 and is almost twice as frequent among men as among women. The first sign of the disease is often swelling of the lymph nodes, usually those of the neck, armpit, or groin, but sometimes those lying deep within the chest or abdomen. Severe itching is often an early sign of the disorder. As the disease progresses, it is usually marked by sweating, weakness, fever, and loss of weight and appetite. It spreads through the lymphatic system, involving other lymph nodes elsewhere in the body as well as the spleen, liver, and bone marrow. The lymph nodes and the spleen and liver may swell, and by obstructing other organs may cause coughing, breathlessness, or
enlargement of the abdomen. The patient often becomes anemic, and because of blood changes the body becomes less able to combat infections. Also called malignant granuloma and lymphogranuloma.

**hoist angle**  
An angle at which the load line is pulled during a hoisting operation.

**hoistway**  
Any shaftway, hatchway, well hole, or other vertical opening or space in which an elevator or dumbwaiter is designed to operate.

**hold**  
A therblig; a work element in which an object is held in a fixed orientation and location by the hand or other body member.

**hold for release**  
_Aviation._ Communication Protocol. Used by Air Traffic Control (ATC) to delay an aircraft for traffic management reasons, i.e., weather, traffic volume, etc. Hold for release instructions (including departure delay information) are used to inform a pilot or a controller (either directly or through an authorized relay) that an Instrument Flight Rules (IFR) departure clearance is not valid until a release time or additional instructions have been received.

**hold harmless agreement**  
A contractual arrangement whereby one party assumes the liability inherent in a situation, thereby relieving the other party of responsibility. See also indemnification agreement.

**hold open**  
_Maritime Navigation._ To hold below or above an object (i.e., wide of the mark) being steered on, depending on direction. Upstream tows normally hold above, downstream tows below, the object.

**holdfire**  
An interruption of the ignition circuit of a launch vehicle.

**holding agency**  
A federal agency having accountability for motor vehicles owned by the government. This term applies when a federal agency has authority to take possession of, assign, or reassign motor vehicles regardless of which agency is using the motor vehicles.

**holding mark**  
_Maritime Navigation._ An object, usually an aid to navigation, on which the pilot of a tow will steer.

**holding on**  
Steering steadily on a mark or object.

**holding pond**  
A pond or reservoir, usually made of earth, built to store polluted runoff.

**Holocene**  
The most recent geologic era; from approximately 10,000 years ago to the present. The Holocene is the latest epoch of the Quaternary period.

**homatropine**  
A chemical which dilates the pupil and paralyzes accommodation when applied to the eye surface. Usually applied during an eye examination to permit viewing of the eyeball interior.

**home base**  
The location where a vehicle is usually parked when not in use or on the road.

**home row**  
The row of letters in a typewriter or computer keyboard on which the fingertips normally rest when typing in a standard mode.

**home rule**  
A legal doctrine (usually found in a state constitution) whereby municipalities such as cities and towns are authorized to enact legislation in the form of bylaws or ordinances on certain subjects which the state legislation could authorize them to do, without the need to wait for an Enabling Act or other state approval. In some states, municipalities have been granted home rule authority to varying degrees over financial affairs, taxation, and exercise of the police power.

**home signal**  
A roadway signal at the entrance to a route or block to govern trains in entering and using that route or block.

**homeostasis**  
A state of physiologic equilibrium within the body.

**homeothermy**  
The ability of some species to regulate body temperature within narrow limits, despite large temperature fluctuations in the environ-
ment. Commonly referred to as warm-blooded.

**homesickness**
A strong desire to be home such that one becomes sluggish and performance is affected, with possible psychosomatic or other symptoms if prolonged.

**homicide**
The killing of one human being by the act, procurement, or omission of another. A person is guilty of criminal homicide if he/she purposely, knowingly, recklessly, or negligently causes the death of another human being.

**homing**
The procedure of using the direction finding equipment of one radio station with the emission of another radio station, where at least one of the stations is mobile, and whereby the mobile station proceeds continuously toward the other station.

**homogeneous exposure group (HEG)**
A group of employees who experience exposures similar enough so that monitoring the exposure of any of the group will provide exposure data that are useful for predicting the exposures of the remainder of the group.

**homogeneous menu hierarchy**
A menu hierarchy having the same number of options in each menu.

**homogeneous radiation**
A beam or flux consisting of radiation of the same kind and energy.

**homogeneous reactor**
A nuclear reactor in which the fissionable material and the moderator (if used) are combined in a mixture such that an effectively homogeneous medium is presented to the neutron.

**homograph**
A word which is spelled the same as another, but which has a different origin, pronunciation, and/or meaning.

**homologous**
Having the same structural relationship.

**homologous motion**
A movement which can be achieved in more than one way.

**homoscedasticity**
A condition in which each distribution has the same variance.

**homosphere**
The region of the atmosphere below about 85 km where the composition of the air remains fairly constant.

**homunculus**
A representation of the human body mapped onto the surface of the brain cortex. See also sensory homunculus and motor homunculus.

**HON**
Hazardous Organic NESHAP. See also NE-SHAPS.

**hood**
A shaped inlet designed to capture contaminated air and conduct it into an exhaust duct and/or exhaust fan.

**hood capture efficiency**
The emissions from a process which are captured by a hood and directed into the control device, expressed as a percent of all emissions.

**hood entry loss**
The pressure loss from turbulence and friction as air enters a ventilation system hood.

**hood lifter**
Transit (slang). A garage mechanic.

**hood static pressure**
The static pressure near a hood in the duct serving the hood; measured static pressure about 2-5 duct diameters downstream in the duct near a hood. It represents the suction that is available to draw air into the hood.

**hook**
A point within software at which additional steps or code can be easily added at a later time.

**hook grip**
A type of grip where only the fingers flex around an object, with the thumb not being used.

**hookworm**
A parasitic worm that infests people and causes debilitation. Major infestations can cause anemia and retardation of mental and physical development. Adult hookworms feed on blood and tissue from the wall of the intestine. Eggs pass out in the feces, undergo
a period of development in soil, and the larvae enter a new host by burrowing through the skin, usually through the sole of the foot. The first sign of the disease may appear on the skin as small eruptions that develop into pus-filled blisters; this condition is sometimes called ground itch. Meanwhile, the hookworms enter blood vessels and are carried by the blood into the lungs. They leave the lungs, propel themselves up the trachea, are swallowed and washed through the stomach and end up in the intestines. Here, if left alone, they will make a permanent home, using their host's body as a source of nourishment. By the time they reach the intestines, about 6 weeks after they enter the body as larvae, the worms are full-grown adults. Each worm now attaches itself by its host's blood by contraction and expansion of its gullet. If large number of worms are present, they can cause considerable loss of blood and severe anemia. The symptoms include pallor and loss of energy while the appetite may increase. The thousands of eggs laid every day by each female worm pass out of the body in the stool, in which they can easily be seen. If the stool is not properly disposed of, the larvae that hatch from the eggs may infect other persons.

**hopper**
A top-loading, funnel-shaped structure for temporary storage of loose materials, which will be dispensed from the bottom.

**hopper barge**
An open-compartment barge used for dry bulk cargo that does not require protection from the weather.

**hopper body**
Truck body capable of discharging its load through a bottom opening without tilting.

**horizon**
The apparent boundary line between the earth's surface and the sky.

**horizontal axis of Helmholtz**
The horizontal axis connecting the centers of rotation of the two eyes.

**horizontal disparity**
See binocular disparity.

**horizontal fault**
*Seismology.* A fault with no dip. Still theoretical, this sort of fault should only exist within a region of strong compression or extension where the tectonic forces required for such movement could be present.

**horizontal job enlargement**
See job enlargement.

**horizontal leg room**
See knee well width and knee well depth.

**horizontal plane**
Any plane parallel to the floor, ground, or other reference surface.

**horizontal scroll**
Move the cursor sufficiently to the left or right under operator control such that the display changes to present information not visible before.

**horizontal standard**
An OSHA standard that essentially has application across a number of different industries, such as the Hazard Communication Standard and other General Industry Standards.

**hormone**
A chemical substance found in one organ or part of the body and carried in the blood to another part. Hormones can alter the function and sometimes the structure of one or more organs. Hormones act as chemical messengers to body organs, stimulating certain life processes and retarding others. Growth, reproduction, sexual attributes, and even mental conditions and personality traits are dependent on hormones. Hormones are produced by various organs and body tissues, but mainly by the endocrine glands (such as the pituitary and gonads).

**Horner's syndrome**
Sinking in of the eyeball, ptosis of the upper eyelid, slight elevation of the lower lid, constriction of the pupil, narrowing of the palpebral fissure and anhidrosis caused by paralysis of the cervical sympathetic nerve supply.

**horology**
The study of time measurement, including the principles and technologies involved in the time-measuring devices.

**horopter**
The locus of points in space which produce images falling on the corresponding points of
both eyes with a constant amount of convergence such that a single image is seen.

**horse**
*Transit (slang).* A tractor or power unit.

**horse latitudes**
The belt of latitude at about 30° to 35° where winds are predominantly light and weather is hot and dry.

**horse light**
Spotlight mounted on cab to reveal open-range livestock.

**horse scaffold**
A scaffold for light or medium duty, composed of wooden or metal horses supporting a work platform.

**horse van body**
Truck designed for the transportation of valuable horses (livestock).

**horsepower (hp)**
(1) A unit of measure of work done by a machine equal to 745.7 watts or 33,000 foot-pounds per minute. (2) The amount of work that an engine can perform within a given time.

**hose mask**
Respiratory protective device that supplies air to the wearer from an uncontaminated source through a hose that is connected to the facepiece.

**host**
(1) In genetics, an organism, simple or complex and including humans, that is capable of being infected by a specific agent. (2) In medicine, an animal infected by another organism.

**host factors**
The personal characteristics of individuals who harbor or nourish a parasite.

**hostility**
An outwardly directed expression of anger, animosity, or antagonism toward another entity.

**hot-deck imputation**
A statistical procedure for deriving a probable response to a questionnaire item concerning a household or vehicle, where no response was given during the survey. To perform the procedure, the households or vehicles are sorted by variables related to the missing item. Thus, a series of "sort categories" are formed, which are internally homogeneous with respect to the sort variables. Within each category, households or vehicles for which the questionnaire item is not missing are randomly selected to serve as "donors" to supply values for the missing item of "recipient" households or vehicles.

**hot flow**
A flow of a hazardous commodity in a newly assembled system to normally passivate system walls and components and to remove residual, nonactive contaminants or flushing fluid. The hot flow is not intended for leak checks because of the potential hazards due to leaks.

**hot lines**
A confidential telephone service used by employees or agents of an organization for internal or external reporting of law or corporate policy. It may be in-house or an outside service. See self-reporting system.

**hot load**
*Transit (slang).* A rush shipment of cargo.

**hot-wire anemometer**
A device, also known as a thermal anemometer, used to measure air velocity by the cooling effect of moving air over a heated element.
Welding is just one example of "hot work."

**hot work**
Mechanical or other work that involves a source of heat, sparks, or other source of ignition that is sufficient to cause ignition of a flammable material. Work involving sources of ignition or temperatures high enough to cause the ignition of a flammable mixture. Examples include welding, burning, soldering, use of power tools, operating engines, sandblasting, electric hot plates, explosives, open fires, portable electrical equipment which has not been tested and classified as intrinsically safe, and other sources of ignition.

**hot work permit**
The employer's written authorization to perform operations (for example, riveting, welding, cutting, burning, and heating) capable of providing a source of ignition.

**hour**
A unit of time, corresponding to 1/24 of the time required for the earth to rotate about its axis.

**household**
A group of persons whose usual place of residence is a specific housing unit; these persons may or may not be related to each other. The total of all U.S. households represents the total civilian noninstitutionalized population. Does not include group quarters (i.e., 10 or more persons living together, none of whom are related).

**household trip**
One or more household members traveling together.

**household vehicle**
A motorized vehicle that is owned, leased, rented or company owned and available to be used regularly by household members during the travel period. Includes vehicles used solely for business purposes or business-owned vehicles if kept at home and used for the home to work trip (e.g., taxicabs, police cars, etc.) which may be owned by, or assigned to, household members for their regular use. Includes all vehicles that were owned or available for use by members of the household during the travel period even though a vehicle may have been sold before the interview. Excludes vehicles that were not working and not expected to be working within 60 days, and vehicles that were purchased or received after the designated travel day.

**housekeeping**
The maintenance of the orderliness and cleanliness of an area or facility.

**housing unit**
A house, apartment, a group of rooms, or a single room occupied or intended for occupancy as separate living quarters. Separate living quarters are those in which the occupants do not live and eat with any other persons in the structure and which have either a) direct access from the outside of the building or through a common hallway intended to be used by the occupants of another unit or by the general public, or b) complete kitchen facilities for the exclusive use of the occupants. The occupants may be a single family, one person living alone, two or more families living together, or any other group of related or unrelated persons who share living arrangements.

**HOV**
See high occupancy vehicle.

**hover check**
Used to describe when a helicopter/vertical takeoff and landing (VTOL) aircraft requires a stabilized hover to conduct a performance/power check prior to hover taxi, air taxi,
or takeoff. Altitude of the hover will vary based on the purpose of the check.

**hover taxi**
Used to describe a helicopter/vertical takeoff and landing (VTOL) aircraft movement conducted above the surface and in ground effect at airspeeds less than approximately 20 knots. The actual height may vary, and some helicopters may require hover taxi more than 26 feet above ground level (AGL) to reduce ground effect turbulence or provide clearance for cargo slingloads.

**how do you hear me?**
*Aviation.* Communication Protocol. A question relating to the quality of the transmission or to determine how well the transmission is being received.

hp
See *horsepower*.

HP
See *health physics*.

HPD
See *hearing protective device*.

**HPLC**
High performance liquid chromatography.

**HPMS**
See *Highway Performance Monitoring System*.

HPS
See *Health Physics Society*.

**HRI**
Hazard risk index. See *risk assessment code*.

**HRIS**
See *Highway Research Information Service*.

**HRS**
See *hazardous ranking system*.

**HS**
See *hydrogen sulfide*.

**HSI**
Heat stress index. See *Belding-Hatch heat stress index*.

**HSWA**
See *Hazardous and Solid Waste Amendments of 1984*.

**http**
*Computing.* Acronym for *hypertext transfer protocol*.

**HUD**
(1) Department of Housing and Urban Development (United States). (2) See *head-up display*.

**hue**
A perceptual attribute of color determined primarily by the wavelength of the light entering the eye.

**hue composition (Hc)**
An expression of hue as percentages of the components.

**hue contrast**
See *chromatic contrast*.

**hull inspector**
*Maritime Navigation* (slang). Colloquial river term for any large piece of drift or submerged piling, log, rock, etc.

**human-computer dialogue**
The interchange of data, commands, or information in those activities between a human and computer.

**human-computer interaction**
The total of the relationship and activities occurring between a human operator and a computer or terminal.

**human-computer interface (HCI)**
The total of the relationship and activities occurring between a human operator and a computer or terminal. Also referred to as *man-computer interface, user-computer interface, computer-human interface (CHI)*.

**human describing function**
See *human transfer function*.

**human ecology**
The study of the relationships of individuals with each other and with their community’s environment.

**human engineering**
See *human factors engineering*.

**human-environment interface**
Any region of contact between man and his surroundings.

**human error**
The end result of multiple factors which influence human performance in a given situation.
An often overused causal factor finding which, by itself, is not entirely descriptive of a true accident cause. Human error is considered more a symptom than a cause. See also human factor.

human error probability (HEP)
A measure of the likelihood of occurrence of a human error under special conditions:

\[ HEP = \frac{\text{error count}}{\text{number of possibilities}} \]

human factor
Any one of a number of underlying circumstances or conditions which directly or indirectly affect human performance. These include physical as well as psychological factors that can potentially lead a person to make an error in judgment or action (human error) resulting in an accident. See also ergonomics.

human factors analysis
A systematic study of those elements involving a human-machine interface or other situation with the intent of improving working conditions, operations, or an individual's well-being. Also referred to as ergonomic analysis.

human factors engineer
One who has the appropriate education, training, and experience to be capable of properly performing human factors engineering activities.

human factors engineering
The use of information derived from human factors research, theory, and modeling for the specification, design, development, testing, analysis, and evaluation of products or systems for human use. See also ergonomics.

human factors specialist
An individual who has the necessary educational, training, and experimental background to have a working understanding of human factors principles and is capable of research or other work toward achieving human factors goals.

human immune deficiency virus (HIV)
Also called the human "immunodeficiency" virus, HIV is the virus that causes acquired immune deficiency syndrome (AIDS).

human life cycle safe concentration (HLSC)
The highest concentration of a substance which will not cause an adverse effect when humans are exposed continuously over their life times.

human-machine interface (HMI)
Any region or point at which a person interacts with a machine.

human-machine system
A system in which the functions of both man and machine are interrelated, both being necessary for proper system operation.

human modeling
The use of any system which is capable of modeling one or more human structures or other characteristics for education, research, or engineering purposes.

human operator
An individual who is involved in the routine control, function, or support of a system or subsystem, but is specifically not involved in any maintenance on that system.

human performance
(1) The degree to which an individual's skill or ability is implemented in a specific task.
(2) Any result from the measurement of human activity under specified conditions.

human performance technology
The use of people, systems, and/or programs to influence behavior and accomplishment.

human reliability
The probability that an individual or group will adequately perform a given task at the appropriate time.

human resources engineering
The process of using human skill resources as factors in design tradeoffs.

human tolerance
The ability of the human body and/or psyche to withstand physical and/or mental stresses without permanent injury or damage.

human transfer function
A mathematical description of what output(s) the human operator would produce as a function of specific input(s).
humane
Under the Federal Mammal Protection Act of 1972: In the context of taking a marine mammal, means that method of taking which involves the least possible degree of pain and suffering practicable to the mammal involved.

Humanscale
A manual modeling system for estimating body link, strength, postures, and other aspects for use in human factors engineering.

humectant
Any chemical which absorbs and helps retain moisture.

humeral breadth
*See elbow breadth.*

humerus
The bone in the upper arm, extending from shoulder to elbow. It consists of a shaft and two enlarged extremities. The proximal end has a smooth round head that articulates with the scapula to form the shoulder joint. Just below the head are two rounded processes called the greater and lesser tubercles. Just below the tubercles is the surgical neck, so named because of its liability to fracture. The distal end of the humerus has two articulating surfaces: the trochlea, which articulates with the ulna, and the capitulum, which articulates with the radius.

humidify
Increase the water vapor content of the atmosphere.

humidistat
A device for measuring and/or controlling humidity levels.

humidity
The amount of moistness or dampness in the air. *See also relative humidity.*

humiture
An index that relates air temperature and relative humidity to how hot it feels.

humor
Any fluid or semifluid in the body.

humping
*Rail Operations.* The process of connecting a moving rail car with a motionless rail car within a rail classification yard in order to make up a train. The cars move by gravity from an incline or "hump" onto the appropriate track.

humus
Decomposed organic material.

hunchback
A rounded deformity, or hump, of the back, or a person with such a deformity. The condition is also called kyphosis and is the result of an abnormal backward curvature of the spine.

hunger
The feeling of a need for food to satisfy an empty feeling in the stomach.

Hunter Lab color system
A color ordering system which is defined from a simple relationship to the CIE X, Y, and Z tristimulus values and is specified by lightness (L), redness or greenness (a), and yellowness or blueness (b).

Huntington’s chorea
A hereditary type of chorea which develops in adults and is accompanied by mental deterioration. Also referred to as adult chorea. *See also Sydenham’s chorea.*

hurdle
A colloquial term for a dike. *See also dike.*

hurricane
A severe tropical cyclone having winds in excess of 64 knots (74 mph). Such storms originate in warm tropical waters of the Atlantic Ocean, Caribbean Sea, or Gulf of Mexico and have circulation about their centers. According to the Saffir/Simpson Scale, there are five Categories of hurricanes which are dictated by sustained wind speeds, as follows:

<table>
<thead>
<tr>
<th>CATEGORY</th>
<th>WIND/MPH</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>74 – 95</td>
</tr>
<tr>
<td></td>
<td>storm surge 4-5 feet above normal</td>
</tr>
<tr>
<td>II</td>
<td>96 – 110</td>
</tr>
<tr>
<td></td>
<td>storm surge 6-8 feet above normal</td>
</tr>
<tr>
<td>III</td>
<td>110 – 130</td>
</tr>
<tr>
<td></td>
<td>storm surge 9-12 feet above normal</td>
</tr>
<tr>
<td>IV</td>
<td>131 – 155</td>
</tr>
<tr>
<td></td>
<td>storm surge 13-18 feet above normal</td>
</tr>
</tbody>
</table>
storm surge greater than 18 feet above normal

HVAC
An air handling system designed primarily for temperature, humidity, odor control, and air quality. See heating, ventilation and air conditioning system.

HVL
See half-value layer.

hybrid
A cell or organism resulting from a cross between two unlike plant or animal cells or organisms.

HYBRID
One of a series of anthropomorphic dummies developed for use in automotive and aircraft crash testing.

HYBRID II
An instrumented anthropomorphic dummy used in automobile head-on collision research.

HYBRID III
An instrumented anthropomorphic dummy used in automobile head-on collision research. Also referred to as Part 572 dummy.

hybrid rulemaking
A process of rulemaking that has elements of both formal and informal rulemaking procedures.

hybridoma
A hybrid cell that produces monoclonal antibodies in large quantities.

hydrargyria
Chronic mercury poisoning.

Hydraset
The trade name for a closed circuit hydraulically operated instrument installed between a crane hook and load that allows precise control of lifting operations and provides an indication of applied load; a precision load positioning device.

hydration
The process of absorbing or combining with water; the chemical addition of water to a compound.

hydraulic
Operated by water or any other liquid under pressure, including all hazardous fluids as well as typical hydraulic fluids that are normally petroleum based.

hydraulic head
The distance between the respective elevations of the upstream water surface (headwater) above and the downstream surface water (tailwater) below a hydroelectric power plant.

hydrocarbon
A compound composed solely of the two elements hydrogen and carbon. The simplest and lightest forms of hydrocarbon are gaseous. With greater molecular weights, they are liquid, while the heaviest are solids.

hydrochloric acid (HCL)
A normal constituent of gastric juice in man and other animals. The absence of free hydrochloric acid in the stomach, called achlorhydria, may be found with chronic gastritis, gastric carcinoma, pernicious anemia, pellagra, and alcoholism. This condition is also referred to as gastric anacidity.

hydrodynamic element
A modeling fluid which is governed by pressure and volume laws.

hydrogen
A chemical element, atomic number 1, atomic weight 1.00797, symbol H.

hydrogen embrittlement
A mechanical environmental failure process that results from the initial presence or absorption of excessive amounts of hydrogen in metals, usually in combination with residual or applied tensile stresses.
hydrogen sulfide (HS)
Gas emitted during organic decomposition. Also a byproduct of oil refining and burning. In heavy concentrations, HS can cause illness.

hydrogenation
The addition of hydrogen to a gaseous substance by the use of gaseous hydrogen combined with a catalyst.

hydrogeology
The geology of groundwater, with particular emphasis on the chemistry and movement of water.

hydrologic cycle
A model that illustrates the movement and exchange of water among the earth, atmosphere, and oceans.

hydrology
The study of the distribution and movement of water.

hydrolysis
The formation of an acid and a base from a salt by the ionic dissociation of water.

hydrometer
An instrument used for determining the specific gravity of liquids.

hydropathic
The ability to resist the condensation of water vapor. Usually used to describe "water-repelling" condensation nuclei.

hydrophobic
Materials that absorb water which results in their swelling and forming reversible gels.

hydrophylic
Refers to substances that absorb water from the atmosphere. Usually used to describe "water-seeking" condensation nuclei.

hydrostatic pressure
Pressure created by water at rest equally at any point within a confined area.

hydrostatic weighing
A part of one technique for estimating body composition by weighing an individual completely submerged under water to determine body volume.

hydrothermal
The generic term that refers to any geologic process involving heated or superheated water.

hygiene
Refers to the science of health and the preservation of well-being (named for the Greek God Hygeia).

hygrometer
An instrument used for the detection of atmospheric moisture. The sensing part of the instrument can be hair (hair hygrometer), a plate coated with carbon (electrical hygrometer), or an infrared sensor (infrared hygrometer).

hygrometry
The determination of the water vapor content of the air.

hygroscopic
Refers to substances that absorb water from the atmosphere. Usually used to describe "water-seeking" condensation nuclei.

hygrothermograph
A recording instrument which provides a simultaneous reading of ambient temperature and humidity.

hyoid bone
A U-shaped bone in the neck which is connected by ligaments to the temporal bone and which supports the tongue. Unique in that it does not articulate directly with any other bone.

hyper-
(prefix) Greater than normal, excessive.

hyperabduct
To abduct a joint beyond the normal joint range of motion limits, with or without injury.

hyperactivity
A disorder characterized by prolonged generally excessive movement, but which may be voluntarily controlled. Also referred to as hyperkinesis, hyperkinesia, and hyperkinetic syndrome.

hyperbaric
Air pressure in excess of that at sea level.

hyperbaric oxygen therapy
A treatment using pure oxygen at greater than atmospheric pressures in a pressure chamber to treat decompression sickness, lesions or sores that resist healing, and other pathologies.
hyperbarism
A condition resulting from exposure to atmospheric pressure that exceeds the pressure within the body.

hypercapnia
An excessive amount of CO₂ in the blood.

hyperemia
An excess of blood in tissue, organ, or other part of the body.

hyperextend
To extend a joint beyond its normal range of motion or comfortable working limits, with or without injury.

hyperflex
To flex a joint beyond its normal range of motion or comfortable working limits, with or without injury.

hypergolic
Ignites spontaneously upon contact, such as certain rocket fuels and oxidizers.

hyperkeratosis
Hypertrophy of the horny layer of the skin.

hyperkinesis
See hyperactivity.

hyperkinetic syndrome
See hyperactivity.

hypermetropia
See hyperopia.

hyperopia
A refraction disorder in the eye in which the focal point of the parallel light rays from the distant object come to a focus posterior to the retina under relaxed accommodation. Commonly referred to as farsightedness.

hyperoxia
A condition in which the partial pressure of oxygen is greater than that found in a standard atmosphere.

hyperparathyroidism
Abnormally increased activity of the parathyroid glands, causing loss of calcium from the bones and excessive secretion of calcium and phosphorus by the kidney. Among the symptoms are kidney stones, back pain, joint pains, thirst, nausea, and vomiting. The conditions also makes bones more susceptible to fracture.

hyperplasia
The abnormal multiplication or increase in the number of normal cells in normal arrangement in tissue.

hyperpnea
An increased depth and rate of respiration.

hypersensitivity
A state of altered reactivity in which the body reacts to a foreign agent more strongly than normal; anaphylaxis and allergy are forms of hypersensitivity.

hypersensitivity diseases
Diseases characterized by allergic responses to animal antigens. The hypersensitivity diseases most clearly associated with indoor air quality are asthma, rhinitis, and hypersensitivity pneumonitis. Hypersensitivity pneumonitis is a rare but serious disease that involves progressive lung damage as long as there is exposure to the causative agent.

hypersensitivity pneumonitis
See building-related illness.

hypersonic
Traveling at or pertaining to a velocity equal to or greater than five times the velocity of sound.

hypertension
(1) A state in which an individual chronically maintains an arterial blood pressure higher than optimal levels, generally $\geq 90$ mm Hg diastolic and/or $\geq 140$ mm Hg systolic. (2) A state in which a muscle is overly tensed.

hypertensive
(1) Characterized by or causing increased tension or pressure, as abnormally high blood pressure. (2) A person with abnormally high blood pressure.

hypertext markup language (html)

hyperthermia
A marked sustained increase in body temperature due to the inability of the body to dissipate excessive heat generated through metabolic activity that can result in severe cellular damage and death if not treated promptly.
hyperthyroidism
Excessive functional activity of the thyroid gland. The condition is called also thyrotoxicosis, and is often accompanied by goiter. Symptoms include profuse sweating, dislike of heat, palpitation, insomnia, nervousness, and excitability. The basal metabolic rate is increased. Sometimes there is diarrhea. There may also be bulging of the eyes, in which case the condition may be referred to as exophthalmic goiter, or Grave's disease.

hypertonia
Having an above normal muscle tension.

hyperventilation
Abnormally prolonged, rapid, and deep breathing. This results in reduced carbon dioxide in the blood (acapnia) and consequent apnea (intermittent cessation of breathing). Symptoms include faintness (or impaired consciousness without actual loss of consciousness).

hyphenated point
Transportation. Basically, two or more neighboring communities which, in terms of authorization shown in a carrier's Certificate of Public Convenience and Necessity, are treated as a single community.

hypnotic
Substance that induces sleep or sleepiness.

hypo-
(prefix) Less than normal.

hypoallergenic
Having a low probability of stimulating allergic reactions.

hypobaric
Air pressure below that which exists at sea level.

hypocenter
The point of origin of an earthquake. It can be expressed with no fewer than three measurements: latitude, longitude, and depth. Also known as the focus.

hypochondriac
(1) Pertaining to the hypochondrium. (2) A person affected with hypochondriasis.

hypochondriasis
An abnormal concern about one's health. The hypochondriac exaggerates trivial symptoms and often believes that he/she is suffering from some serious ailment. True hypochon-
hypoplasia
The incomplete development of an organ so that it fails to reach adult size.

hyposensitivity
(1) Abnormally decreased sensitivity. (2) The specific or general ability to react to a specific allergen reduced by repeated and gradually increasing doses of the offending substance.

hypotension
Diminished tension; lowered blood pressure. A consistently low blood pressure with a systolic pressure less than 100 mm of mercury is no cause for concern. In fact, low blood pressure is associated with long life and an old age free of illness. An extremely low blood pressure is occasionally a symptom of a serious condition. Hypotension may be associated with Addison's disease and inadequate thyroid function, but in both cases the primary disease produces so many other symptoms that the hypotension is considered comparatively unimportant.

hypotensive
Condition in which there is a lack of oxygen supply to the tissues.

hypothalamus
The portion of the brain that controls body temperature and produces hormones that affect the pituitary gland.

hypothenar
Pertaining to the fleshy mass on the medial/ulnar side of the palm.

hypothenar eminence
The fleshy protrusion on the medial ulnar side of the palm.

hypothermia
Loss of body heat and decreased temperature due to extensive exposure to cold.

hypothesis
An assumption which may be accepted or rejected, based on experimental findings, such as by statistical tests of significance.

hypothesis testing
The conducting of a properly controlled experiment, including any supporting statistical analyses, to determine the likelihood of a hypothesis being true.

hypothesis testing
The conducting of a properly controlled experiment, including any supporting statistical analyses, to determine the likelihood of a hypothesis being true.

hypothetical question
A form of question framed in such a manner as to call for an opinion from an expert based on a series of assumptions claimed to have been established as fact by the evidence, and a ground for inferring guilt of innocence, as the case may be, or as indicating a probable or possible motive for the crime.

hypothyroidism
Deficiency of thyroid gland activity, with underproduction of thyroxine, or the condition resulting from it.

hypotonia
A condition involving decreased muscle tone.

hypotonic
(1) Having an abnormally reduced tonicity or tension. (2) Having an osmotic pressure lower than that of the solution with which it is compared.

hypoventilation
Decrease of air in the lungs below the normal amount.

hypoxemia
Deficient oxygenation of the blood.

hypoxia
A condition experienced by humans when the brain does not receive sufficient oxygen. Anemic hypoxia is the reduction of the oxygen-carrying capacity of the blood as a result of a decrease in the total hemoglobin or as the result of an alteration of the hemoglobin constituents.

hypsokinesis
A backward swaying or falling in erect posture, seen in paralysis agitans and other neurologic disorders.

hysteresis
The maximum difference in output for any given input when the value is approached first with increasing input signal then with decreasing input signal. The nonuniqueness in the relationship between two variables as a parameter increase or decrease.

hysteresis error
The difference in response output when increasing a variable as opposed to decreasing that variable.
hysteretic damping

Damping due to the internal mechanical properties of materials.

hysteria

A highly emotional state. A form of psycho-neurosis in which the individual converts anxiety created by emotional conflict into physical symptoms that have no organic basis.

hyzone

An unstable, triatomic form of hydrogen, H$_3$.

Hz

See Hertz.

HZE

See high-energy heavy ion.