

**HIGHWAY** - An undivided road, usually paved, having a built-up driving surface with shoulders. See JEEP TRAIL and ROAD.

**HIGHWAY CURVES** - Templates for drawing circular curves from their tangents.

**HILL** - A small portion of the earth's surface elevated above the surroundings, of lower altitude than a *Mountain*. In general, an eminence is not considered a mountain unless its elevation, from foot to summit, is well over 1,000 ft.

**HINTERLAND** - 1) That zone containing the beach flanks and the area inland from the coast line to a distance of five miles. 2) The region lying behind the coast district.

**HISTORIC COAST LINE\***.

**HOLOGRAPHY** - The process of recording and reproducing an image using two emulsion coated surfaces and a laser beam which scans the object. No lens is used. The viewer "*sees*" the object in three dimensions and the "*object*" can be turned to view it from different angles.

**HOOK** - A *Spit* which is curved at one end; the curvature may be caused by the action of the waves in rolling material to the sheltered side of the spit

**HORIZON** - A plane normal to the plumbline at the observers station. See APPARENT HORIZON and ARTIFICIAL HORIZON.

**HORIZON CAMERA** - A camera used in conjunction with an aerial surveying camera in vertical photography to photograph the horizon simultaneously with the vertical photographs. The horizon photographs indicate the tilts of the vertical photographs.

**HORIZON CLOSURE** - The amount by which the sum of a series of adjacent measured horizontal angles around a point fails to equal exactly 360°, the theoretical sum. See CLOSING THE HORIZON.

**HORIZONTAL** - A plane perpendicular to the plumbline at the point of consideration or origin.

**HORIZONTAL CONTROL** - Survey information which provides position information used for locating subordinate surveys or mapping.

**HORIZONTAL GEODETIC DATUM** - An ellipsoid of reference, defined by two dimensions or constants, an initial point on the reference ellipsoid (defined by latitude and longitude) and an azimuth from the initial point to another point. See NORTH AMERICAN DATUM OF 1927.

**HORIZONTAL PARALLAX** - See ABSOLUTE STEREOSCOPIIC PARALLAX.

**HORIZONTAL REFRACTION** - The lateral effect of terrestrial refraction on an observed direction

**HOVERSIGHT** - A basic component of an Airborne Surveys System developed by the U.S. Geologic Survey. It consists of a silicone-damped pendulum with a self-contained light source for projecting a beam of collimated light through a semitransparent mirror. The helicopter pilot can see the light-source image superimposed upon the image of the ground below.

**HYDRODIST** - A brand of electronic distance measurement device.

**HYDROGRAPHIC CHART** - A chart showing water features such as; depth, channels, islands, and other aids to navigation.

**HYDROGRAPHY** - Topography along shore lines, depths of water and submerged features of bodies of water. Also the science or study of bodies of water and related phenomena.

**HYPERFOCAL DISTANCE** - If an object at a great distance (infinity) be sharply focused, it is found that, without altering the position of the lens, a comparatively near object is still "*in focus*;" that is, it is rendered without perceptible unsharpness. The distance to this near point is the hyperfocal distance.

**HYPERPANCHROMATIC** - Films and plates which have a high red sensitivity.

**HYPERSENSITIZING** - Applied to various methods of increasing the sensitivity of an emulsion; for example, fuming of bathing with ammonia, fuming with mercury, etc.

**HYPO** - Slang term for sodium hyposulphite, a common fixing agent in photo developing and printing.

**HYPSOGRAPHY** - See TOPOGRAPHY.

## I

**IMC** - Image Motion Compensation.

**IR** - Infrared.

**ICONOMETRY** - The process of conducting a plan and elevation from the perspective is termed iconometry. It is the reverse of drawing a perspective from plan and elevation. As applied to photographic surveying, iconometry is the process of making a map from photographs.

**IDENTIFICATION POSTS** - Wood or metal upright stake marked or tagged to help in recovery of survey stations.

**IMAGE COMPRESSION** - A remote sensing operation which preserved all or most of the information in the image and which reduces the amount of memory needed to store an image or the time needed to transmit an image.

**IMAGE ENHANCEMENT** - Any one of a group of operations which improve the detectability of the targets of interest. These operations include, but are not limited to, contrast improvement, edge enhancement, spatial filtering and noise suppression, image smoothing and image sharpening.

**IMAGE-MOTION COMPENSATION** - A device installed with certain aerial cameras to compensate for the forward motion of an aircraft while photographing ground objects. True image-motion compensation must be introduced after the camera is oriented to the flight track of the aircraft and the camera is fully stabilized.

**IMAGE POINT** - The image on a photograph corresponding to a specific point on the ground.

**IMAGE RAY** - Straight line from a ground object, through the camera lens, to the image on the photograph.

**IMAGERY** - Representation or reproduction of objects recorded on photographic emulsions; visual representation of energy recorded by remote sensing instruments.

**IN-AND-OUT STATION (USGS)** - A recoverable but unoccupied station incorporated into a traverse by recording a fictitious deflection angle of 180° to reverse the azimuth of the course leading into it, so that the next station coincided with the preceding station and the in-and-out station is used as the backsight for continuing the traverse. In the computations it is treated as an ordinary station in the traverse.

**INDEX CONTOUR** - A contour line shown distinctively for easy identification and generally labeled with the elevation value.

**INDEX CORRECTION** - A correction applied to the reading from any measuring device to compensate for index error. See INDEX CORRECTION\*.

**INDEX ERROR** - A constant instrumental error due to the displacement of the zero or index mark or vernier of an instrument or scale.

**INDEX MAP** - 1) A map showing location of collections of data which may be other maps, photos, statistical tables or descriptions. 2) A small scale map showing locations or other information about a survey or a project. See ADMINISTRATIVE INDEX MAP, CONTROL INDEX MAP, PHOTOCONTROL INDEX MAP, PHOTOGRAPHY INDEX MAP and SALES INDEX MAP.

**INDEX OF REFRACTION** - A ratio between the speed of light waves in a medium as compared to the speed in a vacuum.

**INDICATED CORNER** - A term adopted by the U.S. Geological Survey to designate corner of the public-land surveys whose location cannot be verified by the criteria necessary to class it as a found or existent corner, but which accepted locally as the correct corner and whose location is perpetuated by such marks as fence-line intersections, piles of rock, and stakes or pipe driven into the ground, which have been recovered by field investigation. See OBLITERATED CORNER\*.

**INDIRECT MEASUREMENT** - Any quantitative result determined from its relation to some measurement. A stadia distance, for example, is an indirect measurement.

**INDIRECT PHOTOGRAPHY** - Photography in which the camera records an image display (television, radar, and so forth).

**INERTIAL GUIDANCE** - A system for an indirect method of measurement which converts individual accelerations and elapsed time into velocity thence into distance traveled by the measuring system.

**INFRARED (IR)** - That portion of the electromagnetic spectrum bounded by visible light and by microwave radiation (generally from 0.70 microns to 1000 microns).

**INFRARED FILM** - Photographic film sensitized to record invisible rays beyond the red end of the light spectrum. It is also sensitive to blue and ultraviolet light and must be used with a red filter to screen out the latter.

**INFRARED IMAGERY** - A recording in graphic form of radiated electromagnetic energy in the heat (infrared) range of the spectrum.

**INFRARED PHOTOGRAPHY** - Commonly used term for imagery which is the product of direct-recording camera/infrared film equipment. See FALSE COLOR.

**INFRARED RADIATION** - Electromagnetic radiation lying in the wavelength interval from about .70 microns to an indefinite upper boundary sometimes arbitrarily set at 1000 microns (0.01 centimeter). At the lower limit of this interval, the infrared radiation spectrum is bounded by visible radiation, whereas on its upper limit it is bounded by microwave radiation of the type important in radar technology. See ELECTROMAGNETIC SPECTRUM.

**INFRARED SCANNER** - Instrument for obtaining thermal infrared imagery through line scanning techniques. See INFRARED THERMAL SENSING.

**INFRARED THERMAL SENSING** - Line scanning techniques using infrared scanners with detectors. Usually, the imagery is obtained from selected portions of the 3 to 14 micron region of the spectrum.

**INLET** - A narrow body of water extending into the land from a larger body of water.

**INSTRUMENTAL ERROR** - An error arising from imperfect condition of the instrument used. Such an error is usually systematic, but may be accidental or random.

**INSTRUMENT STATION** - A survey point at which a surveying instrument is set up for making measurements.

**INSULAR SHELF** - The subaqueous part of an island or archipelago extending from the shore outward beneath the shallow seas to a insular talus where the bottom slopes down rapidly to the ocean depths.

**INSULAR TALUS** - The steep slope from the lower edge on an insular shelf into the ocean depths. It is characterized by a marked change in gradient and usually begins at a depth of approximately 100 fathoms.

**INTERFEROMETER** - An apparatus used to produce and measure interference from two or more coherent wave trains from the same source. Interferometers are used to measure wavelengths, to measure angular width of sources, to determine the angular position of sources (as in satellite tracking), and for many other purposes.

**INTERIM REVISION (USGS)** - A type of limited revision which changes to a published map are determined by reference to current aerial photographs. Obsolete data are removed from the original drawings (but contours are not corrected), and all new data are combined on a single plate and overprinted in purple. The revised data is not field checked. See MAP REVISION.

**INTERIOR ANGLE** - An angle between adjacent sides of a closed figure, measured on the inside of the figure.

**INTERIOR NODE** - See NODAL POINTS.

**INTERIOR ORIENTATION** - The adjustment of a photograph to a position within a photogrammetric system so that the reconstructed cone of rays is geometrically identical with the cone of rays that entered the camera at exposure.

**INTERIOR PERSPECTIVE CENTER** - See NODAL POINTS.

**INTERMEDIATE BENCH MARK** - See BENCH MARK, NONMONUMENTED.

**INTERMEDIATE CONTOUR** - A contour line drawn between index contours.

**INTEROCULAR DISTANCE** - See INTERPUPILLARY DISTANCE.

**INTERPOLATION** - Determination of an intermediate value between fixed or tabulated values from some known or assumed rate or system of change.

**INTERPRETATION** - The determination of the nature and significance on a qualitative basis of images on aerial photographs and on photographic recordings of other airborne sensors.

**INTERPRETER** - 1) A person who examines and interprets aerial photographs and other imagery to obtain desired information. 2) A person who deduces the geologic significance of geophysical data.

**INTERPUPILLARY DISTANCE** - The distance between the pupils of the eyes of an individual.

**INTERSECTION** - 1) The procedure of determining the horizontal position of an unoccupied point (intersection station) by direction observations from two or more known positions. 2) The procedure of determining the horizontal position of a point by intersecting lines of direction obtained photogrammetrically. The lines of direction may be obtained directly from vertical photographs or by graphic or mathematical analysis of the photographs. 3) The general area where two or more highways join or cross, within which are included the roadway and roadside facilities for traffic movements in that area. See INTERSECTION\*.

**INTERSECTION STATION** - A survey point whose position is determined by directions observed from two or more known stations. See NO CHECK POSITION.

**INTERVALOMETER** - A timing device for automatically operating the shutter of a camera at specified intervals.

**INVAR** - An alloy of nickel and steel having a very low coefficient of thermal expansion.

**INVERSE COMPUTATION** - The computation of the length and azimuths of a line from the coordinates of its end points.

**INVERT** - The floor, bottom, or lowest part of the internal cross section of a conduit; the flowline.

**INVERTED IMAGE** - An image which is in reverse order, left to right, as well as from top to bottom.

**ISLAND** - A body of land extending above and completely surrounded by water at mean high water.

**ISLAND SHELF** - The zone around an island or island group, extending from the low-water line to the depths at which there is a marked increase of slope to greater depths. Conventionally its edge is taken at 100 fathoms (or 200 meters).

**ISLAND SLOPE** - The steep slope from the outer edge of an island shelf into great depths.

**ISOBAR** - A line, generally shown on a weather map, joining points on the earth's surface having equal barometric pressure (reduced to sea level) at a given time.

**ISOBATH** - Line on a marine map or chart joining points of equal depth usually in fathoms below mean sea level.

**ISOCENTER** - The point on a photograph intersected by the bisector of the angle of tilt which is midway between the plumbline and the photograph perpendicular and through the principal point.

**ISODIFF** - One of a series of lines on a map or chart connecting points of equal correction or difference in datum, especially useful in readjustment of surveys from one datum to another. See ISOLAT and ISOLONG.

**ISOGONIC CHART** - A chart showing isogonic lines properly labeled with their magnetic declinations. Lines of equal annual change in the declinations are also generally shown.

**ISOGONIC LINE** - A line joining points on the earth's surface having equal magnetic declination as of a given date.

**ISOLAT** - An isodiff connecting points of equal latitude correction.

**ISOLINE (USGS)** - A line of common scale at the intersection of the planes of two overlapping aerial photographs having common perspective center and equal principal distances, applied generally in Geological Survey to the line of intersection between two components of a set of convergent photographs or the intersection of either wing component with the nominal vertical of trimetrogon photography. In the latter case the isoline becomes an isometric parallel when the nominal vertical is truly vertical.

**ISOLONG** - An isodiff connecting points of equal longitude correction.

**ISOMETRIC PARALLEL** - The intersecting line between the plane of a tilted photograph and a horizontal plane having an equal perpendicular distance from the same perspective center. A line parallel to the horizon through the isocenter.

**ISTHMUS** - A narrow strip of land, bordered on both sides by water, that connects two larger bodies of land.

## J

**JEEP TRAIL** - A primitive road, usually passable by all-wheel-drive vehicles only.

**JUNCTION** - The immediate locality in which two or more highway routes meet. See INTERSECTION.

**JUNCTION CLOSURE (USGS)** - The amount by which a new survey line into a junction point fails to give the previously determined position or elevation for the junction points.

**JUNCTION POINT** - A survey point common to two or more survey lines.

## K

**K** - Kelvin.

**K FACTOR** The B/H ratio. See BASE-HEIGHT RATIO.

**KELSH PLOTTER** - A brand of stereoscopic plotting instrument of the double-projection type, characterized by the use of contact-size diapositives and a moving illumination system that concentrates light on the portion of the image that is projected to the tracing table.

**KELVIN** - Thermometer scale equal to the Celsius (formerly called "*Centigrade*") degrees plus 273°, thru 0°C = 273°K, 100°C = 373°K.

## L

**LAKE** - An extensive sheet of water enclosed by land, occupying a hollow in the earth's surface. The name is sometimes loosely applied, too, to the widened part of a river, or to a sheet of water lying along a coast, even when it is connected with the sea; there are many gradations, in fact, between bays and lagoons which are almost enclosed and coastal lakes.

**LAMBERT CONFORMAL CONIC MAP PROJECTION** - A map plotting system in which points on the ellipsoid are mathematically projected onto a cone with its axis identical with the polar axis. The cone surface may be tangent to the ellipsoid or it may cut below the surface (secant) creating two parallels where the scale is exact. The secant form of this projection is the basis of State Plane Coordinate Systems where the zone extends more east-west than north-south.

**LAMBERT GRID** - An information designation of a plane coordinate system based on a Lambert conformal map projection.

**LANDFORM** - The shape into which a part of the earth's surface is sculptured by natural forms.

**LAND LINE ADJUSTMENT (USGS)** - Positioning the public land lines on the topographic map to indicate their theoretical, or approximate location relative to the adjacent terrain and culture, by reconciling the information shown on BLM Plats with the ground evidence of the location of the lines.