

## B

**back**, *adj.* Reciprocal.

**back**, *v., i.* 1. A change in wind direction in reverse of the normal pattern, or counterclockwise in the Northern Hemisphere and clockwise in the Southern Hemisphere. Change in the opposite direction is called *veer*. See also HAUL. 2. To go stern first, or to operate the engines in reverse. 3. To brace the yard of a square sail so as to bring the wind on the forward side.

**back azimuth**. An azimuth  $180^\circ$  from a given azimuth.

**back echo**. The effect on a radar display produced by a back lobe of a radar antenna. See also SIDE ECHO.

**backlash**, *n.* 1. The amount which a gear or other part of a machine, instrument, etc., can be moved without moving an adjoining part, resulting from loose fit. See also LOST MOTION. 2. The tangle resulting when a reel of line or cable revolves faster than line is being stripped off.

**back lobe**. The lobe of the radiation pattern of a directional antenna which makes an angle of approximately  $180^\circ$  with the direction of the axis of the main lobe.

**back range**. A range observed astern, particularly one used as guidance for a craft moving away from the objects forming the range.

**backrush**, *n.* The seaward return of water following the uprush onto the foreshore. See also RIP CURRENT, UNDERTOW.

**backshore**, *n.* That part of a beach which is usually dry, being reached only by the highest tides, and by extension, a narrow strip of relatively flat coast bordering the sea. See also FORESHORE.

**back sight**. A marine sextant observation of a celestial body made by facing away from the body, measuring an angle of more than  $90^\circ$ .

**backstaff**, *n.* A forerunner of the sextant, consisting essentially of a graduated arc and a single mirror. To use the instrument it was necessary to face away from the body being observed. Also called QUADRANT WITH TWO ARCS, SEA QUADRANT.

**backstays of the sun**. Crepuscular rays extending downward toward the horizon.

**backwash**, *n.* Water or waves thrown back by an obstruction such as a seaward, breakwater, cliff, etc.

**backwater**, *n.* Water held back from the main flow, as that which overflows the land and collects in low places or that forming an inlet approximately parallel to the main body and connected thereto by a narrow outlet.

**bad-bearing sector**. Relative to a radio direction finder station or radio-beacon, a sector within which bearings are known to be liable to significant errors of unknown magnitudes.

**baguio**, *n.* Local term in the Philippines for a tropical cyclone.

**balancer**, *n.* A device used with a radio direction finder to balance out antenna effect and thus produce a sharper reading.

**balancing**, *n.* The process of neutralizing antenna effect in order to improve the definition of the observed bearing. See also BALANCER.

**Bali wind**. A strong east wind at the eastern end of Java.

**ball**, *n.* 1. A spherical identifying mark placed at the top of a perch. 2. A time ball.

**ballast ground**. A designated area for discharging solid ballast before entering harbor.

**ballistic damping error**. A temporary oscillatory error of a gyrocompass introduced during changes of course or speed as a result of the means used to damp the oscillations of the spin axis.

**ballistic deflection error**. A temporary oscillatory error of a gyrocompass introduced when the north-south component of the speed changes, as by speed or course change. An accelerating force acts upon the compass, causing a surge of mercury from one part of the system to another in the case of the non pendulous compass, or a deflection (along the meridian) of a mass in the case of a pendulous compass. In either case, a precessing force introduces a temporary ballistic deflection error in the reading of the compass unless it is corrected.

**band**, *n.* A specific section or range of anything. See also FREQUENCY BAND.

**band of error**. An area either side of a line of position, within which, for a stated level of probability, the true position is considered to lie.

**bandwidth**, *n.* 1. The range of frequencies of a device within which its performance, in respect to some characteristic, conforms to a specified standard. 2. The range within the limits of a frequency band.

**bank**, *n.* 1. An elevation of the sea floor typically located on a shelf, over which the depth of water is relatively shallow. Reefs or shoals, dangerous to surface navigation, may rise above the general depths of a bank. 2. A shallow area of shifting sand, gravel, mud, etc., such as a *sand bank*, *mud bank*, etc. 3. A ridge of any material such as earth, rock, snow, etc., or anything resembling such a ridge, as a *fog bank* or *cloud bank*. 4. The edge of a cut or fill. 5. The margin of a watercourse. 6. A number of similar devices connected so as to be used as a single device in common.

**bank cushion**. In a restricted channel, especially one with steep banks, bank cushion tends to force the bow away from the bank due to the increase in the bow wave on the near side.

**bank suction**. The bodily movement of a ship toward the near bank due to a decrease in pressure as a result of increased velocity of flow of water past the hull in a restricted channel.

**banner cloud**. A banner like cloud streaming off from a mountain peak in a strong wind. See also CAP CLOUD.

**bar**, *n.* 1. A ridge or mound of sand, gravel, or other unconsolidated material below the high water level, especially at the mouth of a river or estuary, or lying a short distance from and usually parallel to the beach, and which may obstruct navigation. 2. A unit accepted temporarily for use with the International System of Units; 1 bar is equal to 100,000 pascals.

**barat**, *n.* A heavy northwest squall in Manado Bay on the north coast of the island of Celebes, prevalent from December to February.

**barber**, *n.* 1. A strong wind carrying damp snow or sleet and spray that freezes upon contact with objects, especially the beard and hair. 2. See FROST SMOKE, definition 2.

**bar buoy**. A buoy marking the location of a bar at the mouth of a river on approach to a harbor.

**bare ice**. Ice without snow cover.

**bare rock**. A rock that extends above the mean high water datum in tidal areas or above the low water datum in the Great Lakes. See also ROCK AWASH, SUBMERGED ROCK.

**barogram**, *n.* The record made by a barograph.

**barograph**, *n.* A recording barometer. A highly sensitive barograph may be called a microbarograph.

**barometer**, *n.* An instrument for measuring atmospheric pressure. A **mercurial barometer** employs a column of mercury supported by the atmosphere. An aneroid barometer has a partly exhausted, thin metal cylinder somewhat compressed by atmospheric pressure.

**barometric pressure**. Atmospheric pressure as indicated by a barometer.

**barometric pressure correction**. A correction due to nonstandard barometric pressure, particularly the sextant altitude correction due to changes in refraction caused by difference between the actual barometric pressure and the standard barometric pressure used in the computation of the refraction table.

**barometric tendency**. See PRESSURE TENDENCY.

**barothermogram**, *n.* The record made by a barothermograph.

**barothermograph**, *n.* An instrument which automatically records pressure and temperature.

**barothermohygraph**, *n.* The record made by a barothermohygraph.

**barothermohygraph**, *n.* An instrument which automatically records pressure, temperature and humidity of the atmosphere.

**barrel**, *n.* A unit of volume or weight, the U.S. petroleum value being 42 U.S. gallons.

**barrel buoy**. A buoy having the shape of a barrel or cylinder floating horizontally, usually for special purposes, including mooring.

**barrier beach**. A bar essentially parallel to the shore, the crest of which is above high water.

**barrier reef**. A coral reef which roughly parallels land but is some distance offshore, with deeper water adjacent to the land, as contrasted with a FRINGING REEF closely attached to the shore.

**bar scale**. A line or series of lines on a chart, subdivided and labeled with the distances represented on the chart. Also called GRAPHIC SCALE. See also SCALE.

**barycenter**, *n.* The center of mass of a system of masses; the common point about which two or more celestial bodies revolve.

**base chart**. See BASE MAP.

**base course up**. One of the three basic orientations of display of relative or true motion on a radarscope. In the BASE COURSE UP orientation, the target pips are painted at their measured distances and in

- their directions relative to a preset base course of own ship maintained UP in relation to the display. This orientation is most often used with automated radar plotting systems. Also called COURSE UP. See also HEAD UP, NORTH UP.
- base line.** 1. The reference used to position limits of the territorial sea and the contiguous zone. 2. One side of a series of connected survey triangles, the length of which is measured with prescribed accuracy and precision, and from which the lengths of the other triangle sides are obtained by computation. Important factors in the accuracy and precision of base measurements are the use of standardized invar tapes, controlled conditions of support and tension, and corrections for temperatures, inclination, and alignment. Base lines in triangulation are classified according to the character of the work they are intended to control, and the instruments and methods used in their measurement are such that prescribed probable errors for each class are not exceeded. These probable errors, expressed in terms of the lengths, are as follows: first order, 1 part in 1,000,000; second order, 1 part in 500,000; and third order, 1 part in 250,000. 3. The line along the surface of the earth between two radio navigation stations operating in conjunction for the determination of a line of position.
- baseline delay.** The time interval needed for the signal from a master station of a hyperbolic radionavigation system to travel the length of the baseline, introduced as a delay between transmission of the master and slave (or secondary) signals to make it possible to distinguish between the signals and to permit measurement of time differences.
- baseline extension.** The extension of the baseline in both directions beyond the transmitters of a pair of radio stations operating in conjunction for determination of a line of position.
- base map.** 1. A map or chart showing certain fundamental information, used as a base upon which additional data of specialized nature are compiled or overprinted. 2. A map containing all the information from which maps showing specialized information can be prepared. Also called BASE CHART in nautical charting.
- base map symbol.** A symbol used on a base map or chart as opposed to one used on an overprint to the base map or chart. Also called BASE SYMBOL.
- base symbol.** See BASE MAP SYMBOL.
- base units.** See under INTERNATIONAL SYSTEM OF UNITS.
- basin, n.** 1. A depression of the sea floor approximately equidimensional in plan view and of variable extent. 2. An area of water surrounded by quay walls, usually created or enlarged by excavation, large enough to receive one or more ships for a specific purpose. See also GRAVING DOCK, HALF TIDE BASIN, NON-TIDAL BASIN, SCOURING BASIN, TIDAL BASIN, TURNING BASIN. 3. An area of land which drains into a lake or sea through a river and its tributaries. 4. A nearly land-locked area of water leading off an inlet, firch, or sound.
- bathyal, adj.** Pertaining to ocean depths between 100 and 2,000 fathoms; also to the ocean bottom between those depths, sometimes identical with the continental slope environment.
- bathymeter, n.** An instrument for measuring depths of water.
- bathymetric, adj.** Of or pertaining to bathymetry.
- bathymetric chart.** A topographic chart of the seabed of a body of water, or a part of it. Generally, bathymetric charts show depths by contour lines and gradient tints.
- bathymetry, n.** The science of measuring water depths (usually in the ocean) in order to determine bottom topography.
- bathysphere, n.** A spherical chamber in which persons are lowered for observation and study of ocean depths.
- bathythermogram, n.** The record made by a bathythermograph.
- bathythermograph, n.** An instrument which automatically draws a graph showing temperature as a function of depth when lowered in the sea.
- batture, n.** An elevation of the bed of a river under the surface of the water; sometimes used to signify the same elevation when it has risen above the surface.
- baud.** A measure of the speed of computer data transmission in bits per second.
- bay, n.** A recess in the shore, on an inlet of a sea or lake between two capes or headlands, that may vary greatly in size but is usually smaller than a gulf but larger than a cove.
- bayamo, n.** A violent blast of wind, accompanied by vivid lightning, blowing from the land on the south coast of Cuba, especially near the Bight of Bayamo.
- Bayer's letter.** The Greek (or Roman) letter used in a Bayer's name.
- Bayer's name.** The Greek (or Roman) letter and the possessive form of the Latin name of a constellation, used as a star name.
- baymouth bar.** A bar extending partially or entirely across the mouth of a bay.
- bayou, n.** A minor, sluggish waterway or estuaries creek, generally tidal or with a slow or imperceptible current, and with its course generally through lowlands or swamps, tributary to or connecting with other bodies of water. Various specific meanings have been implied in different parts of the southern United States. Sometimes called SLOUGH.
- beach, n.** The zone of unconsolidated material that extends landward from the low water line to the place where there is a marked change in material or physiographic form, or to the line of permanent vegetation (usually the effective limit of storm waves). A beach includes foreshore and backshore. The beach along the margin of the sea may be called SEABEACH. Also called STRAND, especially when the beach is composed of sand. See also TIDELAND.
- beach, v., t. & i.** To intentionally run a craft ashore.
- beach berm.** See BERM.
- beach erosion.** The carrying away of beach materials by wave action, tidal or littoral currents, or wind.
- beacon, n.** A fixed artificial navigation mark. See also MARK, definition 1; DAYBEACON; DAYMARK; LIGHTED BEACON; RADIO-BEACON.
- beaconage, n.** A system of fixed aids to navigation comprised of beacons and minor lights. See also BUOYAGE.
- beacon buoy.** See PILLAR BUOY.
- beacon tower.** A beacon which is a major structure, having a support as distinctive as the topmark. See also LATTICE BEACON, REFUGE BEACON.
- beam, n.** 1. A directed flow of electromagnetic radiation from an antenna. See also MAIN BEAM under LOBE, BEAM WIDTH. 2. A group of nearly parallel rays, as a *light beam*.
- beam compass.** Compass for drawing circles of large diameter. In its usual form it consists of a bar with sliding holders for points, pencils, or pens which can be set at any desired position.
- beam sea.** Waves moving in a direction approximately 90° from the vessel's heading. Those moving in a direction approximately opposite to the heading are called HEAD SEA, those moving in the general direction of the heading are called FOLLOWING SEA, and those moving in a direction approximately 45° from the heading (striking the quarter) are called QUARTERING SEA. See also CROSS SEA.
- beam tide.** A tidal current setting in a direction approximately 90° from the heading of a vessel. One setting in a direction approximately 90° from the course is called a CROSS TIDE. In common usage these two expressions are usually used synonymously. One setting in a direction approximately opposite to the heading is called a HEAD TIDE. One setting in such a direction as to increase the speed of a vessel is called a FAIR TIDE.
- beam width.** The angular measure of the transverse section of a beam (usually in the main lobe) lying within directions corresponding to specified values of field strength relative to the maximum (e.g., half field strength beam width and half power beam width). The beam width is usually measured in one or more specified planes containing the axis of the beam. See also HORIZONTAL BEAM WIDTH, VERTICAL BEAM WIDTH.
- beam-width error.** An azimuth or bearing distortion on a radar display caused by the width of the radar beam. See also BEAM WIDTH, PULSE LENGTH ERROR.
- beam wind.** Wind blowing in a direction approximately 90° from the heading. One blowing in a direction approximately 90° from the course is called a CROSS WIND. In common usage these two expressions are usually used synonymously, BEAM WIND being favored by mariners, and CROSS WIND by aviators. One blowing from ahead is called a HEAD WIND. One blowing from astern is called a FOLLOWING WIND by mariners and a TAIL WIND by aviators. See also FAIR WIND, FAVORABLE WIND, UNFAVORABLE WIND.
- bear, v., i.** To be situated as to direction, as, the light bears 165°.
- bear down.** To approach from windward.
- bearing, n.** The horizontal direction of one terrestrial point from another, expressed as the angular distance from a reference direction. It is usually measured from 000° at the reference direction clockwise through 360°. The terms BEARING and AZIMUTH are sometimes

- used interchangeably, but in navigation the former customarily applies to terrestrial objects and the latter to the direction of a point on the celestial sphere from a point on the earth. A bearing is often designated as true, magnetic, compass, grid, or relative as the reference direction is true, magnetic, compass, or grid north, or heading, respectively. The angular distance between a reference direction and the initial direction of a great circle through two terrestrial points is called great-circle bearing. The angular distance between a reference direction and the rhumb line through two terrestrial points is called rhumb or Mercator bearing. A bearing differing by 180°, or one measured in the opposite direction, from a given bearing is called a reciprocal bearing. The maximum or minimum bearing of a point for safe passage of an off-lying danger is called a danger bearing. A relative bearing of 045° or 315° is sometimes called a four-point bearing. Successive relative bearings (right or left) of 45° and 90° taken on a fixed object to obtain a running fix are often called bow and beam bearings. Two or more bearings used as intersecting lines of position for fixing the position of a craft are called cross bearings. The bearing of a radio transmitter from a receiver, as determined by a radio direction finder, is called a radio bearing. A bearing obtained by radar is called a radar bearing. A bearing obtained by visual observation is called a visual bearing. A constant bearing maintained while the distance between two craft is decreasing is called a collision bearing. See also CURVE OF EQUAL BEARING.
- bearing angle.** Bearing measured from 0° at the reference direction clockwise or counterclockwise through 90° or 180°. It is labeled with the reference direction as a prefix and the direction of measurement from the reference direction as a suffix. Thus, bearing angle N37°W is 37° west of north, or true bearing 323°.
- bearing bar.** An instrument for measuring bearings, particularly a device consisting of a slender bar with a vane at each end, and designed to fit over a central pivot in the glass cover of a magnetic compass. See also AZIMUTH BAR.
- bearing book.** A log for the recording of visual bearings.
- bearing calibration.** The determination of bearing corrections of a radio-direction finder by observations of a radiobeacon, particularly a calibration radiobeacon, of known visual bearing, observations being taken over 360° of swing of the observing vessel.
- bearing circle.** A ring designed to fit snugly over a compass or compass repeater, and provided with vanes for observing compass bearings. A similar ring provided with means for observing azimuths of the sun is called an AZIMUTH CIRCLE.
- bearing compass.** A compass intended primarily for use in observing bearings.
- bearing cursor.** The radial line on a radar set inscribed on a transparent disk which can be rotated manually about an axis coincident with the center of the PPI. It is used for bearing determination. Also called MECHANICAL BEARING CURSOR.
- bearing light.** A navigation light using two superimposed optical systems which provides an approximate bearing without the use of a compass.
- bearing line.** A line extending in the direction of a bearing.
- bearing repeater.** A compass repeater used primarily for observing bearings.
- bearing resolution.** See as RESOLUTION IN BEARING under RESOLUTION, definition 2. Also called ANGULAR RESOLUTION.
- beat frequency.** Either of the two additional frequencies obtained when signals of two frequencies are combined, equal to the sum or difference, respectively, of the original frequencies.
- Beaufort wind scale.** A numerical scale for indicating wind speed, devised by Admiral Sir Francis Beaufort in 1805. Beaufort numbers (or forces) range from force 0 (calm) to force 12 (hurricane).
- bed, n.** The ground upon which a body of water rests. The term is usually used with a modifier to indicate the type of water body, as river bed or sea bed. See also BOTTOM.
- before the wind.** In the direction of the wind. The expression applies particularly to a sailing vessel having the wind well aft. See also DOWNWIND.
- bell, n.** A device for producing a distinctive sound by the vibration of a hollow, cup-shaped metallic vessel which gives forth a ringing sound when struck.
- bell book.** The log of ordered engine speeds and directions.
- bell buoy.** A buoy with a skeleton tower in which a bell is fixed.
- belt, n.** A band of pack ice from 1 km to more than 100 km in width.
- bench, n.** On the sea floor, a small terrace.
- bench mark.** A fixed physical object used as reference for a vertical datum. A tidal bench mark is one near a tide station to which the tide staff and tidal datums are referred. A primary tidal bench mark is the principal (or only) mark of a group of tidal bench marks to which the tide staff and tidal datum's are referred. A geodetic bench mark identifies a surveyed point in the National Geodetic Vertical Network. Geodetic bench mark disks contain the inscription VERTICAL CONTROL MARK, NATIONAL GEODETIC SURVEY with other individual identifying information. Bench mark disks of either type may, on occasion, serve simultaneously to reference both tidal and geodetic datum's. Numerous bench marks, both tidal and geodetic, still bear the inscription U.S. COAST & GEODETIC SURVEY.
- beneped, adj.** See NEAPED.
- Benguela Current.** A slow-moving ocean current flowing generally northwestward along the west coast of Africa. It is caused mainly by the prevailing southeast trade winds. Near the equator the current flows westward and becomes the ATLANTIC SOUTH EQUATORIAL CURRENT.
- ventu de soli.** An east wind on the coast of Sardinia.
- berg, n.** Short for ICEBERG.
- bergy bit.** A large piece of floating glacier ice, generally showing less than 5 meters above sea level but more than 1 meter and normally about 100 to 300 square meters in area. It is smaller than an ICEBERG but larger than a GROWLER. A typical bergy bit is about the size of a small house.
- Bering Current.** A northward flowing current through the eastern half of the Bering Sea, through Bering Strait, and in the eastern Chukchi Sea. The current speed in the Bering Sea is estimated to be usually 0.5 knot or less but at times as high as 1.0 knot. In the Bering Strait, current speeds frequently reach 2 knots. However, in the eastern half of the strait, currents are even stronger and usually range between 1.0 and 2.5 knots. Strong southerly winds may increase current speeds in the strait to 3 knots, and up to 4 knots in the eastern part. Persistent, strong northerly winds during autumn may cause the current to reverse direction for short periods. During winter a southward flow may occur in the western part of the strait. After flowing through Bering Strait, the current widens, and part continues toward Point Barrow, where it turns northwestward. Along the Alaska coast, current speeds have been observed to range between 0.1 and 1.5 knots and increase to 2.0 or 2.5 knots with southerly winds. In the western part of the Chukchi Sea, currents are considerably weaker and do not usually exceed 0.5 knot.
- berm, n.** A nearly horizontal portion of a beach or backshore having an abrupt fall and formed by wave deposition of material and marking the limit of ordinary high tides. Also called BEACH BERM.
- berm crest.** The seaward limit of a berm. Also called BERM EDGE.
- berm edge.** See BERM CREST.
- berth, n., v., t.** 1. A place for securing a vessel. 2. To secure a vessel at a berth. See also FOUL BERTH, MUD BERTH.
- beset, adj.** State of a vessel surrounded by ice and unable to move. If the ice forcibly squeezes the hull, the vessel is said to be NIPPED.
- Bessel ellipsoid of 1841.** The reference ellipsoid of which the semimajor axis is 6,377,397.155 meters, the semiminor axis is 6,356,078.963 meters and the flattening or ellipticity equals 1/299.1528. Also called BESSEL SPHEROID OF 1841.
- Besselian year.** See FICTITIOUS YEAR.
- Bessel spheroid of 1841.** See BESSEL ELLIPSOID OF 1841.
- bias error.** See CONSTANT ERROR.
- bifurcation, n.** A division into two branches.
- bifurcation buoy.** A buoy which indicates the place at which a channel divides into two. See also JUNCTION BUOY.
- bifurcation mark.** A navigation mark which indicates the place at which the channel divides into two. See also JUNCTION MARK.
- big floe.** See under FLOE.
- bight, n.** 1. A long and gradual bend or recess in the coastline which forms a large open receding bay. 2. A bend in a river or mountain range. 3. An extensive crescent-shaped indentation in the ice edge.
- bill, n.** A narrow promontory.
- bi-margin format.** The format of a map or chart on which the cartographic detail is extended to two edges of the sheet, thus leaving only two margins. See also BLEED.

- binary notation.** Referring to a system of numbers with a base of 2; used extensively in computers, which use electronic on-off storage devices to represent the numbers 0 and 1.
- binary star.** A system of two stars that revolve about their common center of mass. See also DOUBLE STAR.
- binnacle, n.** The stand in which a compass is mounted. For a magnetic compass it is usually provided with means of mounting various correctors for adjustment and compensation of the compass.
- binocular, n., adj.** 1. An optical instrument for use with both eyes simultaneously. 2. Referring to vision with two eyes.
- bioluminescence, n.** The production of light by living organisms in the sea. Generally, these displays are stimulated by surface wave action, ship movement, subsurface waves, up welling, eddies, physical changes in sea water, surfs, and rip tides.
- bisect, v., t.** To divide into two equal parts.
- bit (from binary digit).** The smallest unit of information in a computer. Bits are grouped together into bytes, which represent characters or other information.
- bit-map.** A type of computerized display which consists of a single layer of data; individual elements cannot be manipulated. See VECTOR, RASTER.
- bivariate error distribution.** A two-dimensional error distribution.
- blackbody, n.** An ideal emitter which radiates energy at the maximum possible rate per unit area at each wavelength for any given temperature. A blackbody also absorbs all the radiant energy in the near visible spectrum incident upon it. No actual substance behaves as a true blackbody.
- black light.** Ultraviolet or infrared radiant energy. It is neither black nor light.
- blanket, v., t.** To blank out or obscure weak radio signals by a stronger signal.
- blanketing, n.** The blanking out or obscuring of weak radio signals by a stronger signal.
- blanking, n.** See as DUAL-RATE BLANKING.
- blank tube.** A marine sextant accessory consisting of a tubular sighting vane, the function of which is to keep the line of vision parallel to the frame of the instrument when observing horizontal sextant angles.
- blather, n.** Very wet mud of such nature that a weight will rapidly sink into it. See also QUICKSAND.
- bleed, n.** The edge of a map or chart on which cartographic detail is extended to the edge of the sheet. Also called BLEEDING EDGE.
- bleeding edge.** See BLEED.
- blind lead.** A lead with only one outlet.
- blind pilotage.** *British terminology.* The task of conducting the passage of a ship in pilot waters using means available to the navigator in low visibility.
- blind rollers.** Long, high swells which have increased in height, almost to the breaking point, as they pass over shoals or run in shoaling water. Also called BLIND SEAS.
- blind seas.** See BLIND ROLLERS.
- blind sector.** A sector on the radarscope in which radar echoes cannot be received because of an obstruction near the antenna. See also SHADOW SECTOR.
- blink, n.** A glare on the underside of extensive cloud areas, created by light reflected from snow or ice-covered surfaces.
- snow blink.** Blink caused by a snow-covered surface, which is whitish and brighter than the yellowish-white glare of ice blink. See also LAND SKY, WATER SKY, SKY MAP.
- blinking, n.** A means of providing information in radionavigation systems of the pulse type by modifying the signal at its source so that the signal presentation alternately appears and disappears or shifts along the time base. In Loran, blinking is used to indicate that a station is malfunctioning.
- blip, n.** On a radarscope, a deflection or spot of contrasting luminescence caused by an echo, i.e., the radar signal reflected back to the antenna by an object. Also called PIP, ECHO, RETURN.
- blip scan ratio.** The ratio of the number of paints from a target to the maximum possible number of paints for a given number of revolutions of the radar antenna. The maximum number of paints is usually equivalent to the number of revolutions of the antenna.
- blister, n.** See BORDER BREAK.
- blizzard, n.** A severe weather condition characterized by low temperatures and by strong winds bearing a great amount of snow (mostly fine, dry snow picked up from the ground). The National Weather Service specifies the following conditions for a blizzard: a wind of 32 miles per hour or higher, low temperatures, and sufficient snow in the air to reduce visibility to less than 500 feet; for a severe blizzard, it specifies wind speeds exceeding 45 miles per hour, temperature near or below 10°F, and visibility reduced by snow to near zero. In popular usage in the United States, the term is often used for any heavy snowstorm accompanied by strong winds.
- block, n.** See CHARTLET, definition 2.
- block correction.** See CHARTLET, definition 2.
- blocky iceberg.** An iceberg with steep sides and a flat top. The length-to-height ratio is less than 5:1. See also TABULAR ICEBERG.
- Blondel-Rey effect.** The effect that the flashing of a light has on reducing its apparent intensity as compared to the intensity of the same light when operated continuously or fixed.
- blooming, n.** Expansion of the spot produced by a beam of electrons striking the face of a cathode-ray indicator, caused by maladjustment.
- blowing snow.** Snow raised from the ground and carried by the wind to such a height that both vertical and horizontal visibility are considerably reduced. The expression DRIFTING SNOW is used when only the horizontal visibility is reduced.
- blue ice.** The oldest and hardest form of glacier ice, distinguished by a slightly bluish or greenish color.
- blue magnetism.** The magnetism displayed by the south-seeking end of a freely suspended magnet. This is the magnetism of the earth's north magnetic pole.
- bluff, n.** A headland or stretch of cliff having a broad nearly perpendicular face. See also CLIFF.
- blunder, n.** See MISTAKE.
- Board of Geographic Names.** An agency of the U.S. Government, first established by Executive Order in 1890 and currently functioning under Public Law 242-80, 25 July 1947. Twelve departments and agencies have Board membership. The board provides for "uniformity in geographic nomenclature and orthography throughout the Federal Government." It develops policies and romanization systems under which names are derived and it standardizes geographic names for use on maps and in textual materials.
- boat, n.** A small vessel. The term is often modified to indicate the means of propulsion, such as motorboat, rowboat, steamboat, sailboat, and sometimes to indicate the intended use, such as lifeboat, fishing boat, etc. See also SHIP.
- boat compass.** A small compass mounted in a box for small craft use.
- boat harbor.** A sheltered area in a harbor set aside for the use of boats, usually with docks, moorings, etc.
- boat sheet.** The work sheet used in the field for plotting details of a hydrographic survey as it progresses.
- bobbing a light.** Quickly lowering the height of eye and raising it again when a navigational light is first sighted to determine if the observer is at the geographic range of the light.
- bold, adj.** Rising steeply from the sea; as a bold coast. See also ABRUPT.
- bolide, n.** A meteor having a magnitude brighter than 4 magnitude. Bolides are observed with much less frequency than shooting stars. Light bursts, spark showers, or splitting of the luminous trail are sometimes seen along their trails. The luminous trails persist for minutes and may persist up to an hour in exceptional cases. Also called FIREBALL. See also METEOR.
- bollard, n.** A post (usually steel or reinforced concrete) firmly secured on a wharf, quay, etc., for mooring vessels with lines.
- bombing range.** An area of land or water, and the air space above, designated for use as a bombing practice area.
- boom, n.** A floating barrier used for security, shelter, or environmental cleanup.
- boot.** To start a computer, which initiates a series of internal checks and programs which ready the computer for use.
- bora, n.** A cold, northerly wind blowing from the Hungarian basin into the Adriatic Sea. See also FALL WIND.
- borasco, n.** A thunderstorm or violent squall, especially in the Mediterranean.
- border break.** A cartographic technique used when it is required to extend cartographic detail of a map or chart beyond the neatline into the margin, which eliminates the necessity of producing an additional sheet. Also called BLISTER.
- borderland, n.** A region bordering a continent, normally occupied by or bordering a shelf that is highly irregular with depths well in excess of those typical of a shelf.
- bore, n.** See TIDAL BORE.

- boring**, *n.* Forcing a vessel under power through ice, by breaking a lead.
- borrow**, *v., t.* To approach closer to the shore or wind.
- bottom**, *n.* The ground under a body of water. The terms FLOOR, and BOTTOM have nearly the same meaning, but BED refers more specifically to the whole hollowed area supporting a body of water, FLOOR refers to the essential horizontal surface constituting the principal level of the ground under a body of water, and BOTTOM refers to any ground covered with water.
- bottom characteristics**. Designations used on surveys and nautical charts to indicate the consistency, color, and classification of the sea bottom. Also called NATURE OF THE BOTTOM, CHARACTER OF THE BOTTOM.
- bottom contour chart**. A chart designed for surface and sub-surface bathymetric navigation seaward of the 10 fathom contour. Bottom configuration is portrayed by depth contours and selected soundings.
- bottom sample**. A portion of the material forming the bottom, brought up for inspection.
- bottom sampler**. A device for obtaining a portion of the bottom for inspection.
- Bouguer's halo**. An infrequently observed, faint, white, circular arc or complete ring of light which has a radius of about 39°, and is centered on the antisolar point. When observed, it usually is in the form of a separate outer ring around an anticorona. Also called UL-LOA'S RING. See also FOGBOW.
- boulder**, *n.* A detached water-rounded stone more than 256 millimeters in diameter, i.e., larger than a man's head. See also COBBLE.
- boundary disclaimer**. A statement on a map or chart that the status and/or alignment of international or administrative boundaries is not necessarily recognized by the government of the publishing nation.
- boundary lines of inland waters**. Lines dividing the high seas from rivers, harbors, and inland waters. The waters inshore of the lines are "inland waters" and upon them the Inland Rules of the Road or Pilot Rules apply. The waters outside of the lines are the high seas and upon them the International Rules apply.
- boundary monument**. A material object placed on or near a boundary line to preserve and identify the location of the boundary line on the ground.
- bow**, *n.* The forward part of a ship, craft, aircraft, or float.
- bow and beam bearings**. Successive relative bearings (right or left) of 45° and 90° taken on a fixed object to obtain a running fix. The length of the run between such bearings is equal to the distance of the craft from the object at the time the object is broad on the beam., neglecting current.
- Bowditch**, *n.* Popular title for Pub. No. 9, The American Practical Navigator.
- bow wave**. 1. The wave set up by the bow of a vessel moving through the water. Also called WAVE OF DISPLACEMENT. 2. A shock wave in front of a body such as an airfoil.
- boxing the compass**. Stating in order the names of the points (and sometimes the half and quarter points) of the compass.
- brackish**, *adj.* Containing salt to a moderate degree, such as sea water which has been diluted by fresh water, such as near the mouth of a river. The salinity values of brackish water range from approximately 0.50 to 17.00 parts per thousand.
- branch**, *n.* 1. A creek or brook, as used locally in the southern U.S. 2. One of the bifurcations of a stream.
- brash ice**. Accumulations of floating ice made up of fragments not more than 2 meters across, the wreckage of other forms of ice.
- brave west winds**. The strong, often stormy, winds from the west-northwest and northwest which blow at all seasons of the year between latitudes 40° S and 60° S. See also ROARING FORTIES.
- Brazil Current**. The ocean current flowing southwestward along the Brazilian coast. Its origin is in the westward flowing Atlantic South Equatorial Current, part of which turns south and flows along the South American coast as the Brazil Current. The mean speed of the current along its entire length is about 0.6 knot. Off Uruguay at about 35° S, it meets the Falkland Current, the two turning eastward to join the South Atlantic Current.
- break-circuit chronometer**. A chronometer equipped with an electrical contact assembly and program wheel which automatically makes or breaks an electric circuit at precise intervals, the sequence and duration of circuit-open circuit closed conditions being recorded on a chronograph. The program sequence is controlled by the design of the program wheel installed. Various programs of make or break sequence, up to 60 seconds, are possible. In some chronometers the breaks occur every other second, on the even seconds, and a break occurs also on the 59th second to identify the beginning of the minute; in other chronometers, breaks occur every second except at the beginning of the minute. By recording the occurrence of events (such as star transits) on a chronograph sheet along with the chronometer breaks, the chronometer times of those occurrences are obtained.
- breaker**, *n.* A wave which breaks, either because it becomes unstable, usually when it reaches shallow water, or because it dashes against an obstacle. Instability is caused by an increase in wave height and a decrease in the speed of the trough of the wave in shallow water. The momentum of the crest, often aided by the wind, causes the upper part of the wave to move forward faster than the lower part. The crest of a wave which becomes unstable in deep water and topples over or "breaks" is called a WHITECAP.
- breakwater**, *n.* A line of rocks, concrete, pilings, or other material which breaks the force of the sea at a particular place, forming a protected area. Often an artificial embankment built to protect the entrance to a harbor or to form an artificial harbor. See also JETTY.
- breasting float**. See CAMEL.
- breeze**, *n.* 1. Wind of force 2 to 6 (4-31 miles per hour or 4-27 knots) on the Beaufort wind scale. Wind of force 2 (4-7 miles per hour or 4-6 knots) is classified as a light breeze; wind of force 3 (8-12 miles per hour or 7-10 knots), a gentle breeze; wind of force 4 (13-18 miles per hour or 11-16 knots), a moderate breeze; wind of force 5 (19-24 miles per hour or 17-21 knots), a fresh breeze; and wind of force 6 (25-31 miles per hour or 22-27 knots), a strong breeze. See also LIGHT AIR. 2. Any light wind.
- bridge**, *n.* 1. An elevated structure extending across or over the weather deck of a vessel, or part of such a structure. The term is sometimes modified to indicate the intended use, such as *navigating bridge* or *signal bridge*. 2. A structure erected over a depression or an obstacle such as a body of water, railroad, etc. to provide a roadway for vehicles or pedestrians. See also CAUSEWAY, VIADUCT.
- Briggsian logarithm**. See COMMON LOGARITHM.
- bright display**. A radar display capable of being used under relatively high ambient light levels.
- brisa**, **briza**, *n.* 1. A northeast wind which blows on the coast of South America or an east wind which blows on Puerto Rico during the trade wind season. 2. The northeast monsoon in the Philippines.
- brisote**, *n.* The northeast trade wind when it is blowing stronger than usual on Cuba.
- Broadcast Notice to Mariners**. Notices to mariners disseminated by radio broadcast, generally of immediate interest to navigators.
- broad on the beam**. Bearing 090° relative (*broad on the starboard beam*) or 270° relative (*broad on the port beam*). If the bearings are approximate, the expression ON THE BEAM or ABEAM should be used.
- broad on the bow**. Bearing 045° relative (*broad on the starboard bow*) or 315° relative (*broad on the port bow*). If the bearings are approximate, the expression ON THE BOW should be used.
- broad on the quarter**. Bearing 135° relative (*broad on the starboard quarter*) or 225° relative (*broad on the port quarter*). If the bearings are approximate, the expression ON THE QUARTER should be used.
- broadside on**. Beam on, such as to the wind or sea.
- broad tuning**. Low selectivity, usually resulting in simultaneous reception of signals of different frequencies (spill-over). The opposite is SHARP TUNING.
- Broken bow**. See ANTICORONA.
- broken water**. An area of small waves and eddies occurring in what otherwise is a calm sea.
- brook**, *n.* A very small natural stream; a rivulet. Also called RUN, RUNNEL. See also CREEK, definition 2.
- brubu**, *n.* A name for a squall in the East Indies.
- B-trace**. The second trace of an oscilloscope having more than one displayed.

- bubble acceleration error.** The error of a bubble sextant observation caused by displacement of the bubble by acceleration or deceleration resulting from motion of a craft. Also called ACCELERATION ERROR.
- bubble horizon.** An artificial horizon parallel to the celestial horizon, established by means of a bubble level.
- bubble sextant.** A sextant with a bubble or spirit level to indicate the horizontal.
- bucket temperature.** Temperature of surface sea water trapped and measured in a bucket or similar receptacle.
- buffer.** In computers, a temporary storage area used when incoming data cannot be processed as fast as it is transmitted.
- building.** *n.* A label on a nautical chart which is used when the entire structure is the landmark, rather than an individual feature of it. Also labeled HOUSE.
- bull's eye squall.** A squall forming in fair weather, characteristic of the ocean off the coast of South Africa. It is named for the peculiar appearance of the small isolated cloud marking the top of the invisible vortex of the storm.
- bull the buoy.** To bump into a buoy.
- bummock.** *n.* A downward projection from the underside of an ice field; the counterpart of a HUMMOCK.
- bund.** *n.* An embankment or embanked thoroughfare along a body of water. The term is used particularly for such structures in the Far East.
- buoy.** *n.* An unmanned floating device moored or anchored to the bottom as an aid to navigation. Buoys may be classified according to shape, as spar, cylindrical or can, conical, nun, spherical, barrel, or pillar buoy. They may also be classified according to the color scheme as a red, green, striped, banded, or checkered buoy. A buoy fitted with a characteristic shape at the top to aid in its identification is called a topmark buoy. A sound buoy is one equipped with a characteristic sound signal, and may be further classified according to the manner in which the sound is produced, as a bell, gong, horn, trumpet, or whistle buoy. A lighted buoy is one with a light having definite characteristics for detection and identification during darkness. A buoy equipped with a marker radiobeacon is called a radiobeacon buoy. A buoy with equipment for automatically transmitting a radio signal when triggered by an underwater sound signal is called a sonobuoy. A combination buoy has more than one means of conveying information; it may be called a lighted sound buoy if it is a lighted buoy provided with a sound signal. Buoys may be classified according to location, as channel mid channel, middle ground, turning, fairway junction, junction, or sea buoy. A bar buoy marks the location of a bar. A buoy marking a hazard to navigation may be classified according to the nature of the hazard, such as obstruction, wreck, telegraph, cable, fish net, dredging, or spoil ground buoys. Buoys used for particular purposes may be classified according to their use, as anchor, anchorage, quarantine, mooring, marker, station, watch, or position buoy. A light-weight buoy especially designed to withstand strong currents is called a river buoy. An ice buoy is a sturdy one used to replace a more easily damaged buoy during a period when heavy ice is anticipated.
- buoyage.** *n.* A system of buoys. One in which the buoys are assigned shape, color, and number distinction in accordance with location relative to the nearest obstruction is called a cardinal system. One in which buoys are assigned shape, color, and number distinction as a means of indicating navigable waters is called a lateral system. See also IALA MARITIME BUOYAGE SYSTEM.
- buoy station.** The established (charted) location of a buoy.
- buoy tender.** A vessel designed for, and engaged in, servicing aids to navigation, particularly buoys.
- butte.** *n.* An isolated flat-topped hill, similar to but smaller than a MESA.
- Buys Ballot's law.** A rule useful in locating the center of cyclones and anticyclones. It states that, facing away from the wind in the northern hemisphere, the low pressure lies to the left. Facing away from the wind in the southern hemisphere, it is to the right; named after Dutch meteorologist C. H. D. Buys Ballot, who published it in 1857.
- byte.** Basic unit of measurement of computer memory. A byte usually consists of 8 BITS; each ASCII character is represented by 1 byte.
- by the head.** See DOWN BY THE HEAD.
- by the stern.** See DOWN BY THE STERN.