

Bead seat area. The flat surface on the inside of the rim of an aircraft wheel on which the bead of the tire seats.

Bearing strength (sheet metal characteristic). The amount of pull needed to cause a piece of sheet metal to tear at the points at which it is held together with rivets. The bearing strength of a material is affected by both its thickness and the diameter of the rivet.

Beehive spring. A hardened-steel, coil-spring retainer used to hold a rivet set in a pneumatic rivet gun. This spring gets its name from its shape. It screws onto the end of the rivet gun and allows the set to move back and forth, but prevents it being driven from the gun.

Bend allowance. The amount of material actually used to make a bend in a piece of sheet metal. Bend allowance depends upon the thickness of the metal and the radius of the bend, and is normally found in a bend allowance chart.

Bend radius. The radius of the inside of a bend.

Bend tangent line. A line made in a sheet metal layout that indicates the point at which the bend starts.

Bernoulli's principle. The basic principle that explains the relation between kinetic energy and potential energy in fluids that are in motion. When the total energy in a column of moving fluid remains constant, any increase in the kinetic energy of the fluid (its velocity) results in a corresponding decrease in its potential energy (its pressure).

Bezel. The rim that holds the glass cover in the case of an aircraft instrument.

Bias-cut surface tape. A fabric tape in which the threads run at an angle of 45° to the length of the tape. Bias-cut tape may be stretched around a compound curve such as a wing tip bow without wrinkling.

Bilge area. A low portion in an aircraft structure in which water and contaminants collect. The area under the cabin floorboards is normally called the bilge.

Bipolar transistor. A solid-state component in which the flow of current between its emitter and collector is controlled by a much smaller flow of current into or out of its base. Bipolar transistors may be of either the NPN or PNP type.

BITE. Built-in test equipment.

Blade track. The condition of a helicopter rotor in which each blade follows the exact same path as the blade ahead of it.

Black box. A term used for any portion of an electrical or electronic system that can be removed as a unit. A black box does not have to be a physical box.

Bladder-type fuel cell. A plastic-impregnated fabric bag supported in a portion of an aircraft structure so that it forms a cell in which fuel is carried.

Bleeder. A material such as glass cloth or mat that is placed over a composite lay-up to absorb the excess resin forced out of the ply fibers when pressure is applied.

Bleeding dope. Dope whose pigments are soluble in the solvents or thinners used in the finishing system. The color will bleed up through the finished coats.

Bleeding of brakes. The maintenance procedure of removing air entrapped in hydraulic fluid in the brakes. Fluid is bled from the brake system until fluid with no bubbles flows out.

Blimp. A cigar-shaped, nonrigid lighter-than-air flying machine.

Blush. A defect in a lacquer or dope finish caused by moisture condensing on the surface before the finish dries. If the humidity of the air is high, the evaporation of the solvents cools the air enough to cause the moisture to condense. The water condensed from the air mixes with the lacquer or dope and forms a dull, porous, chalky-looking finish called blush. A blushed finish is neither attractive nor protective.

Bonding. The process of electrically connecting all isolated components to the aircraft structure. Bonding provides a path for return current from electrical components, and a low-impedance path to ground to minimize static electrical charges. Shock-mounted components have bonding braids connected across the shock mounts.

Boost pump. An electrically driven centrifugal pump mounted in the bottom of the fuel tanks in large aircraft. Boost pumps provide a positive flow of fuel under pressure to the engine for starting and serve as an emergency backup in the event an engine-driven pump should fail. They are also used to transfer fuel from one tank to another and to pump fuel overboard when it is being dumped. Boost pumps prevent vapor locks by holding pressure on the fuel in the line to the engine-driven pump. Centrifugal boost pumps have a small agitator propeller on top of the impeller to force vapors from the fuel before it leaves the tank.