

# Glossary

Term	Abbrev.	Description
aft		Back side or measured back.
airfoil		Any surface designed to obtain a desirable reaction from the air through which it moves. The airfoil converts air resistance into a force useful for flight. Wings, control surfaces, and propeller blades are examples of airfoils.
AN	AN	Air Force-Navy standards or codes for materials and supplies. Formerly known as Army-Navy standards.
angle of incidence		The acute angle which the wing chord makes with the longitudinal axis of the aircraft.
baseline	BL	This line is used to measure distances outward from the center line of the fuselage. Thus, the baseline is the actual center line. BL measurements are given in inches and positive to the left or right.
bias		A cut, fold, or seam made diagonally to the warp or fill threads of a fabric. Cutting on the bias: Cutting BID cloth on the bias is to cut so the fibers are on a 45° angle to the edge. See drawing Figure 2.2.A.1. You can wrap a smaller radius corner when the fibers are running on a 45° angle to the corner.
BID		Bidirectional glass cloth. 50% of the fibers are running in one direction, and 50% of the fibers are running perpendicular (90°) to the other fibers. Also see BID schedule and BID tape.
BID schedule		The number of fiberglass layers bonding a structure together.
BID tape		A strip of BID (bidirectional glass cloth) cloth cut on the bias, usually 2-4 inches wide.
bidirectional glass cloth	BID	50% of the fibers are running in one direction, and 50% of the fibers are running perpendicular (90°) to the other fibers.
capstrip		Usually the top surface of a rib or spar that is used to bond to another surface.
center	CTR	A point equally distanced from all points.
center line	CL	The center of the fuselage, lengthwise. Used to measure distances outward from the center.

Term	Abbrev.	Description
center of gravity	CG	The theoretical point where the entire weight of the airplane is considered to be concentrated.
chord		1. An imaginary straight line which passes through an airfoil or wing section from the leading edge to the trailing edge. 2. The length of the airfoil; from the leading edge to the trailing edge of the wing.
chord line		See chord.
cotton flox	flox	Finely chopped cotton fibers which appear nearly as fine as micro balloons. The difference is that flox is structurally stronger than micro when combined with epoxy. USE: Mixed similarly to micro and used for strengthening glass-to-glass areas where BID tapes can't be used. Can fill small gaps where pure epoxy might run out and leave a void, also large amounts of pure epoxy is heavier and too brittle. Flox is heavier than micro. Should be used sparingly, it can add a lot of weight if used without discretion.
countersink		Enlarge and bevel the rim of a hole so that a screw or bolt can be inserted flush with the surface. Sink a screw into the hole.
cutting on bias		See bias.
dihedral		The positive acute angle between the lateral axis of an airplane and a line through the center of a wing or horizontal stabilizer. Looking at the front of the aircraft, most non-swept wings form a positive angle to the horizontal. That angle is called dihedral. Dihedral improves roll stability on non-swept wing aircraft.
fair in		Create a smooth transition between two surfaces, for example from a BID tape to the surface of a skin such as the fuselage.
fairing		A smooth covering over a joint or a junction in an aircraft structure to provide a smooth surface for the airflow. Its primary purpose is to reduce drag.
fitting	FTG	A part used to join or attach assemblies together.



Term	Abbrev.	Description
flox		See cotton flox.
forward	FWD	Toward the front.
fuselage	FSLG	The body of an airplane. That part to which the wing, tail and landing gear attach, and which, in a single-engine airplane, usually carries the engine.
fuselage station	FS	This imaginary line is used to measure distance forward or aft on the fuselage. FS 0 is the aft face of the spinner.
hardpoint		A hole is made in the inside layer of laminate by removing the laminate and filling the hole with solid e-glass.
I.D.		Inside Diameter
inboard		Toward the center of the aircraft.
incidence board		A device or template used to measure the angle of incidence of a wing.
joggle		A small offset formed to allow one part to overlap another. In fiberglass construction this consists of adjoining parts attached by using a bonded, overlapping joint that is reinforced with fiberglass strips.
laminate		A structure made by bonding together two or more layers of material with resin. It contains no core material. A fiberglass layup.
layup		Reinforcing material that is placed in a specific position.
leading edge	L.E.	The foremost edge of an airfoil section.
longeron		A lengthwise structural member of the fuselage. Some planes have top and bottom longerons.
match drill		Using an already drilled surface to mark and drill on an undrilled surface.
micro radii		Using microballoons to form a radius between two surfaces.

Term	Abbrev.	Description
microballoons	micro	These are very small thin-walled air-filled glass bubbles. Being extremely light for their volume, they can be added to resin to produce a very lightweight filler material that is easy to shape and sand. They do not add strength to the mixture however, and should be used where "cosmetics" is the consideration, not strength.
MS	MS	Military Standard
O.D.	O.D.	Outside Diameter
outboard	outbd	Toward the side of the aircraft.
peelply		A non-structural fabric used in the manufacturing process to protect the inner surface. It must be removed from the part. It is light in color and usually has darker stripes for identification.
peen		To round over or flatten the end by light hammer blows.
phenolic		A thermosetting plastic resin reinforced with cloth to make objects.
pot life		The usable life of a resin. The time before it begins to thicken after the catalyst and accelerator have been added.
prepreg		Honeycomb panels that are used for the interior panels, shelving and several other pieces, are available in two types: – 3/8" core + 2-BID per side (also known as 2-core-2) – 1/4" core + 1-BID per side
release or release tape		A layer of material that will not allow resin to bleed through it. It will not bond to the part when the resins cure.
shear web		Typically the part of the wing spar that runs vertically.
slipstream		A stream of air pushed back by a revolving aircraft propeller.
spar		Main, or principle, spanwise structural member of a wing or other airfoil.
spar cap		The top and bottom members of a spar, held in proper relation by the shear web.
split line		Bottom of the joggle where the seam meets.



Term	Abbrev.	Description
stop		A device used to limit the throw or travel of a control.
toe-in		Aircraft wheels that tend to converge toward the front. Toe-in will cause the tires to try to move closer together.
tolerance		An allowable variation.
trailing edge	T.E.	The rearmost edge of an airfoil.
trim tab		A small auxiliary hinged portion of a movable control surface that may be adjusted by the pilot in flight to a position which will result in a balance of control forces.
typical	TYP	Abbreviation meaning “typical” when seen on a drawing.
water line	WL	This is an imaginary line used for height measurements on the plane. On the ES, the bottom of the fuselage is WL 0.
wetting out		The saturation of an impregnated fabric in which all areas of the fibers are filled with resin.
wing station	WS	The line formed by the chord lines. WS 0 is in the middle of the fuselage.

