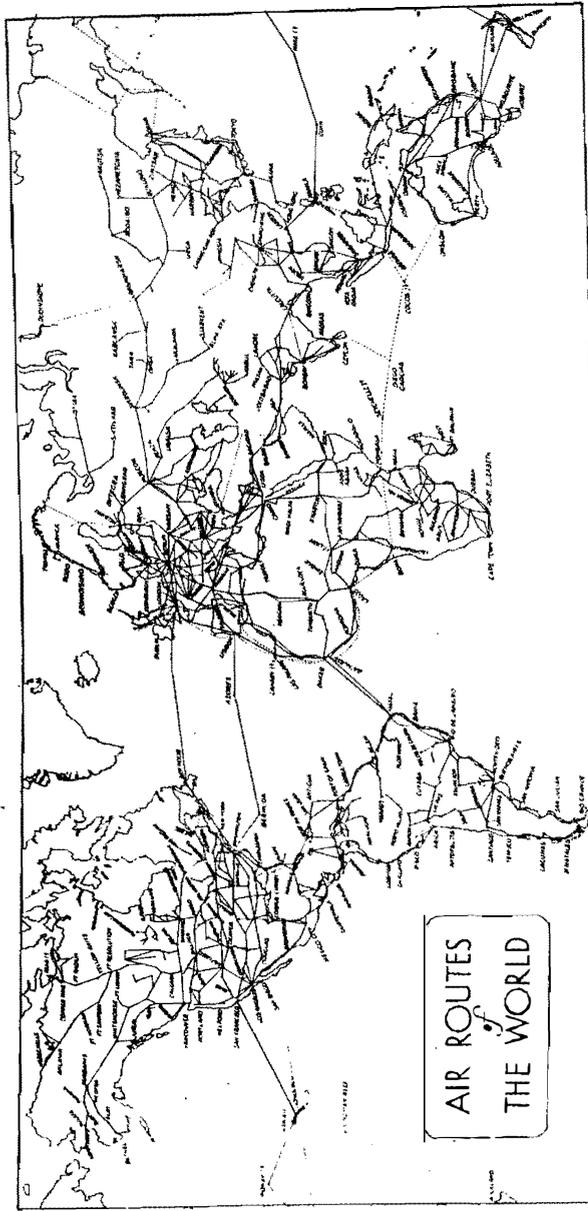
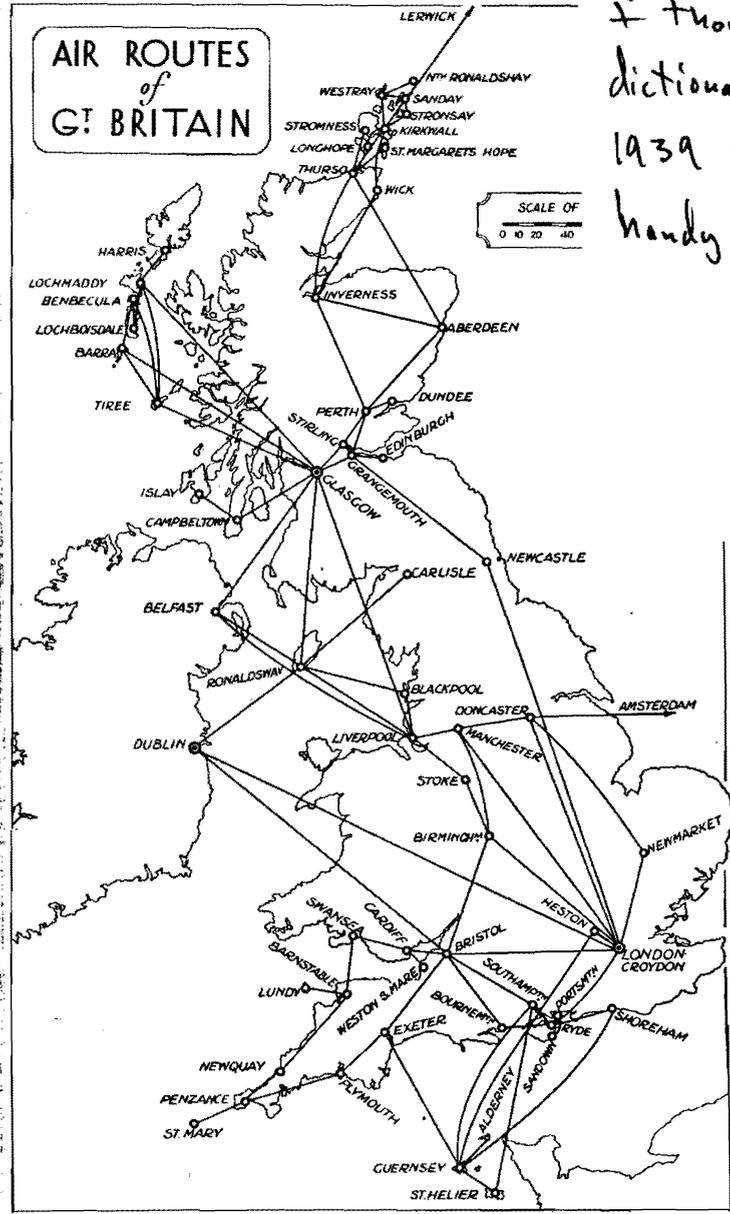


Aircraft Dictionary 1939



The Chief World Air Routes are shown here.
For LIST OF AIR SERVICES and ROUTES see pages 118-37.



I thought this dictionary circa 1939 might be handy.

The Flying Reference Book
by F.J. Cunniff, 1940 (London)

AIRCRAFT DICTIONARY

A PRACTICAL AND CONCISE GLOSSARY OF THE VARIOUS TERMS
AND PHRASES PECULIAR TO AIRCRAFT AND AVIATION

A

- A.A.**—Anti-Aircraft, denoting means of defence from the ground against hostile aircraft—as “anti-aircraft gun.”
- Abney Level.**—A type of spirit-level protractor used for measuring angles. Also known as a “clinometer.”
- Absolute Ceiling.**—The maximum height obtainable by an aircraft in Standard Atmosphere, i.e. at which rate of climb is zero.
- Accelerometer.**—An instrument whereby the acceleration of an aircraft in a defined direction is determined.
- Acorn.**—A fitting which prevents abrasion at intersections of cross-bracing or other wires.
- Adiabatic.**—Referring to the changes which may take place in the pressure and temperature of a gas involving no change of total heat.
- Aerobatics.**—Voluntary evolutions performed with an aircraft other than those required for normal flying.
- Aerodrome.**—A term originally used by that early pioneer, Professor Langley, as a name for the aeroplane, but latterly used to denote the landing field with its associated buildings and services.
- Aerodynamics.**—The science of dynamics, particularly that section relating to the laws of motion of air and the motion of solid bodies through it.
- Aerofoil.**—The surface of a structure which has been designed to produce an aerodynamic force at right angles to its direction of motion.
- Aeroplane.**—A heavier-than-air machine, mechanically propelled, and having one or more wings. Also called “airplane.”
- Aerostatics.**—The study of aerostats in relation to their buoyancy in air.
- A.F.C.**—Air Force Cross, a British decoration awarded to airmen.
- Aileron.**—Hinged or movable surface of an aeroplane, usually a part of the trailing edge of the wing. Its function is to turn the plane about its longitudinal axis and to give lateral stability.

AIRCRAFT DICTIONARY

- Air-brake.**—A device to reduce landing speed in restricted areas. Usually a surface which can be moved so as to present the maximum resistance to the air.
- Airfoil.**—Any surface which is designed to produce a lifting effect when propelled or projected through the air. Also “aerofoil.”
- Airframe.**—An aeroplane without the engine(s).
- Air Pocket.**—A misnomer referring to the effect of convection currents, which are most noticeable on slow-moving aircraft.
- Airscrew.**—A term which includes all types of screws with helical blades for use in the air. Coupled to the engine and designed to produce a thrust by its rotation.
- Airscrew Slip.**—The ratio of the actual advance per revolution of the airscrew under flying conditions to the theoretical advance per revolution of the airscrew.
- Air-speed.**—The speed of a body through the air. This is indicated by a special instrument; it should be noted, however, that the air is assumed to be perfectly still. (See “Pitot Tube.”)
- Airway Beacon.**—A beacon located so as to indicate an air route.
- Airworthiness.**—A term applied to an aircraft indicating compliance with prescribed regulations for the safety of the aircraft and its occupants.
- Lighting Gear.**—Includes all units which support an aeroplane on land or water (except flying-boat hull), i.e. undercarriage, tail skids and floats.
- Altigraph.**—An altimeter with a permanent recording scale to give a definite proof of height reached.
- Altimeter.**—Instrument for indicating aircraft's height above sea-level. It can be specially set to read height above any given level, such as the home landing field.
- Altitude.**—Any height above land or water.
- Alto-cumulus.**—(See **Medium Clouds.**)
- Alto-stratus.**—(See **Medium Clouds.**)
- Amphibian.**—An aircraft designed to land on, or take off from, either land or water. A flying boat is not an amphibian.
- Anemometer.**—An instrument for determining wind speed.
- Aneroid Barometer.**—An instrument for determining atmospheric pressure, operated by change in volume of a metallic box largely exhausted of air.
- Angle of Attack.**—Also called “angle of incidence.” The angle of a supporting surface in relation to its direction of motion.

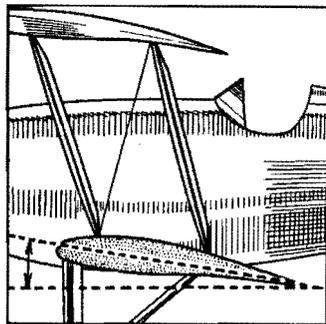
Angle—Dihedral.—The obtuse angle which is formed when the wings are tilted up so that the tips are higher than any other part.

Angle of Incidence.—Angle between the chord line of the main plane and the horizontal when an aeroplane is in an arbitrary position specified by the manufacturers.

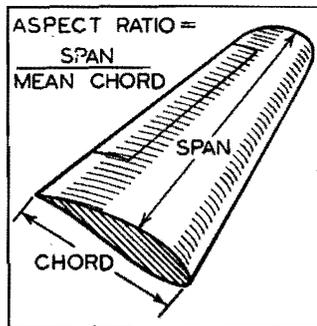
Aperiodic.—An instrument needle which, after a slight lag, indicates the correct reading with no overswing.

Apteroid.—A wing-form resembling the "short and broad" type of bird's wings. (See **Pterygoid**.)

Artificial Horizon.—A gyro-operated instrument which keeps an indicator permanently parallel to the real horizon.



ANGLE OF INCIDENCE.



ASPECT RATIO.

Aspect Ratio.—The ratio of the span to the chord of the wing of an aeroplane.

Atmosphere.—That mass of air which surrounds and rotates with the earth.

Automatic Stability.—That inherent stability which is preserved by the design of an aircraft and which is not dependent on the control of the operator.

Auxiliary Parachute.—A small parachute which assists in withdrawing the main parachute from its pack.

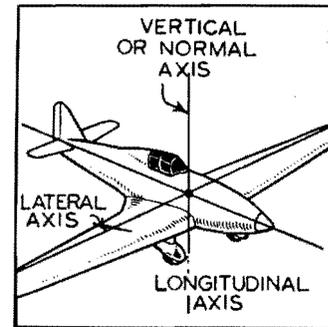
Aviation.—Generic term application to the science and industry.

Aviator.—The pilot, operator or controller of an aeroplane.

Axis.—A plane can revolve about any of three axes. Longitudinal axis is the line from nose to rudder; in banking or rolling the machine moves on this axis. A line from wing-tip to wing-tip is the lateral axis; in diving or climbing the plane moves on this axis in its departure from level.

Vertical axis is a line passing vertically through the centre of gravity; in turning round or changing direction of flight a plane moves on this axis.

Azimuth.—Refers in aeronautics to an angular displacement in a horizontal plane.



AXES.

B

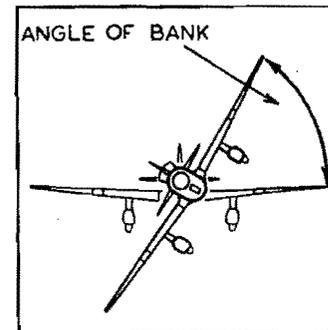
Back-wash.—The column of air driven to the rear by the propeller. The slip stream.

Bail Out.—To jump over the side of an aircraft with a parachute.

Ballast.—Any substance which is carried by an aircraft and can be discharged in order to alter its loading or moved to affect the position of the centre of gravity.

Balloon.—An aerostat consisting of an envelope containing a lighter-than-air gas and having no mechanical means of propulsion.

Bank.—The degree of tilt assumed by a plane in turning. The sharper the turn, the steeper the bank. Also used as a verb to denote the action of tilting a plane on its axis longitudinally.



BANK.

Barograph.—A form of barometer which makes a written graph of the altitudes reached in flight. (See also **Altigraph**.)

Barometer.—(See **Aneroid Barometer**.)

Barothermograph.—An instrument for recording atmospheric pressure and temperatures simultaneously.

Base (Compass).—A concrete circle placed on an aerodrome and marked with the principal degrees of the compass upon which an aeroplane is placed when compasses are to be adjusted.

Bay.—The space or portion of frame between bulkheads or struts.

AIRCRAFT DICTIONARY

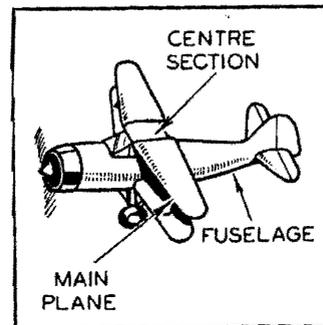
- Beaufort Scale of Wind Force.**—A system by which wind speeds are classified. Ranging from 0 = Calm to 12 = Hurricane.
- Bias.**—Fabric which is cut diagonally across the warp and weft.
- Biplane.**—A plane with two wings or supporting surfaces placed one above the other.
- Black Out.**—A momentary "blackness" before the eyes experienced when turning sharply at very high speeds.
- Bleeding.**—A term used in connection with hydraulics which refers to the expulsion of air from a system.
- Blimp.**—A type of small non-rigid airship used for observation purposes.
- Blind Flying.**—Navigating an aircraft solely by the use of instruments and without exterior view.
- Bonding.**—A method of connecting all metal parts of an aircraft together to avoid different electrical potentials.
- Boost.**—(See **Supercharger.**)
- Brace.**—A construction member of the framework of an aeroplane. A brace resists compression diagonally as distinguished from a strut which supports a vertical compression.
- Brake Horse-power.**—The power available after deducting that absorbed by friction in the engine.
- Brolly.**—A popular nickname for a parachute.
- Bump.**—A disturbance of air-currents causing rough or uneven flying.
- Bunt.**—An aeroplane does half an inverted (outside) loop and from this inverted position takes up a normal attitude by a half-roll or by half a normal loop. This manoeuvre is almost universally forbidden, owing to the dangerous loading which it may entail on the air frame.
- Buoyancy.**—Vertical thrust on an aircraft due to weight of fluid (air) displaced. (See **Archimedes' Principle.**)

C

- Cabane.**—Framework supporting the wings at the body or fuselage.
- Camber.**—The curve in the wing surface from leading edge to trailing edge. Spoken of as "top-camber" on the upper surface and "bottom-camber" on the lower.
- Camera-gun.**—A camera in the guise of a machine-gun. In training for aerial gunnery the camera records the exact position where bullets would have struck the target in actual fight.
- Canopy.**—The large silken envelope of a parachute.

AIRCRAFT DICTIONARY

- Cant.**—To tilt or adopt an inclined position.
- Cantilever.**—Projecting beam or girder fixed at one end to a rigid support.
- Cartridge Starters.**—A type of engine starter in which a cartridge is electrically detonated and forces a piston down a cylinder. This directly rotates the crankshaft.
- Catapult.**—A mechanical device whereby aircraft may be launched into the air without preliminary run to take off. Used mostly on ships specially fitted for the purpose.
- Caterpillar Club.**—A club in which membership is restricted to those whose lives have been saved by the use of Irvin parachutes. The club has several hundred members and each new-comer is presented with a tiepin bearing a caterpillar.
- Ceiling, Absolute.**—The maximum height a plane will reach under normal conditions.
- Ceiling, Service.**—The height at which a plane can no longer climb at more than 100 feet per minute.
- Centre of Buoyancy.**—That point through which the entire upward thrust due to displaced fluid may be assumed to be acting.
- Centre of Gravity.**—That point in a body through which the resultant of the weights of its parts passes, whatever position it may assume.
- Centre of Mass.**—Often incorrectly called "centre of gravity." The one point on which an aircraft would balance itself when resting on that point only.
- Centre of Pressure.**—As applied to an aerofoil; that point on the mean camber line where the resultant of all air forces may be assumed to act.
- Centre Section.**—A portion of the lifting surfaces of an airframe mounted rigidly on the fuselage to which port and starboard mainplanes are attached.
- Centrifugal Force.**—That equal and oppositely directed force to centripetal force.
- Centripetal Force.**—That force which acts on a body moving in a curved path and, being constantly directed towards the instantaneous centre of curvature, keeps the body from moving in a straight line.



CENTRE SECTION.

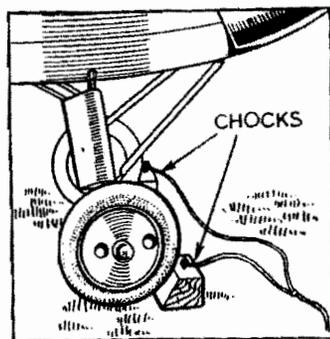
C. of A.—Certificate of Airworthiness. Given when a machine and its engine comply with the prescribed regulations, and without which no aircraft may fly in Great Britain.

Chassis.—The undercarriage of an aeroplane.

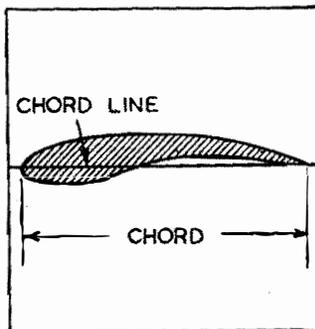
Chine.—The line on hull or float where the side shell plating meets the planing bottom.

Chock.—A piece of material used in a structure to strengthen it and prevent movement where two or more members meet at an angle. Also refers to a block of material used to prevent an aeroplane moving when the engine is started.

Chord.—The shortest measurement between leading and trailing edges of a wing.



CHOCK.



CHORD.

Cirrus.—(See **High Clouds.**)

Clinometer.—(See **Abney Level.**)

Clouds.—(See **Heap Clouds, High Clouds, Low Clouds, Medium Clouds.**)

Cockpit.—The space in the fuselage where pilot and/or passengers sit, and where controls are fixed.

Cold Front.—The boundary line between a mass of warm air and an advancing mass of cold air which is pushing below it.

Compass.—An instrument which consists of a freely swinging magnetic needle which in the absence of conflicting magnetic fields always points to magnetic north.

Composite Cooling.—(See **Evaporative Cooling.**)

Compression Surface.—That side of a plane or propeller against which the air is compressed. The rear surface of a propeller or the under side of a wing or plane.

Confirmed.—Any enemy aircraft claimed to have been brought down during the Great War had always first to be "confirmed" by an independent eye-witness before it was officially counted.

Contact.—Colloquial term indicating that the engine switch is on, i.e. primary circuit broken.

Contact Patrol.—Aircraft were employed during the Great War to fly over the front lines during an infantry action, observe the position of the troops and return with this information to brigade headquarters. These flights were known as "contact patrols."

Contours.—Imaginary lines joining points of equal elevation above sea-level. Important in map reading.

Controls.—A general term for the apparatus directing the speed, direction, altitude and power of aircraft.

Convection.—A type of heat transference. Currents set up in a fluid owing to differing densities of hot and cold fluid.

Corrosion.—The eating away of a metal by the chemical action of its environment, e.g. surface corrosion or oxidation, rust of steels and green verdigris on copper alloys. Inter-crystalline or pitting corrosion by surface contact of two metals due to electrolytic potential.

Cowling.—Cover of metal on top and/or sides of motor to decrease wind resistance and protect parts. Usually removable.

"Crack-up."—Slang for damage on landing, usually indicates a partial wreck.

"Crash."—A fall or landing in which machine is more seriously damaged than in a "crack-up." (See also **Write-off.**)

Crate.—Slang term for aircraft.

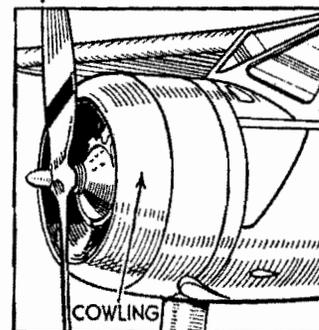
Cross-bracing.—A means of keeping a structure rigid by crossed wires, cables or girders.

Cross-level.—A clinometer which indicates any movement about the longitudinal axis.

Cumulus.—(See **Heap Clouds.**)

Curtain.—Vertical surface of a cellular division, the upright wall.

Cyclone.—A tropical revolving storm circulating counter-clockwise in the Northern and clockwise in the Southern Hemisphere.



COWLING.

D

D.P.—Defensive patrol.

Depression.—A type of atmospheric distribution of low barometric pressure, having a counter-clockwise wind distribution, in the Northern and clockwise in the Southern Hemisphere. (See **Anticyclone**.)

Derrick.—A tower-like structure in which a falling weight gives impetus to aircraft taking off. Used for early types of aircraft, but recently revived for gliders.

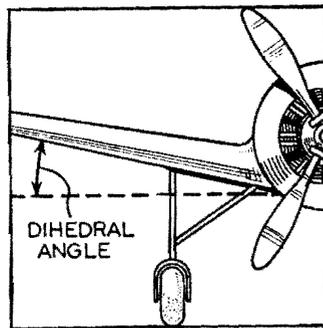
Dew Point.—That temperature at which a gas becomes saturated with water vapour and commences to deposit it as dew. (See **Humidity**.)

D.F.C.—Distinguished Flying Cross.

Diesel.—Name given to compression-ignition power plant after its inventor.

Diffusion.—That property of a gas which causes it to tend towards uniformity of distribution either through a permeable membrane or when adjacent to another gas. Rate of diffusion is proportional to concentration difference.

Dihedral Angle.—Geometrically, the angle between two planes. Thus in an aeroplane the aerofoils are at a dihedral angle when port and starboard are inclined upward or downward to the lateral axis. When upward, the dihedral is positive.



DIHEDRAL ANGLE.

Directional Stability.—Stability of movements about the normal axis.

Distress Signal.—Used by aircraft in danger and requiring immediate assistance. Signal SOS in radio-telegraphy, "MAYDAY" (m' aidez, French for help me) in radio-telegraphy or "NC" by flags.

Dive.—A steep descent with or without engine running and in which the speed is higher than maximum speed in horizontal flight.

Dog-fight.—A general mix-up of opposing forces of aircraft; the opposite to a "tip and run" fight.

Dope.—Liquid, somewhat like varnish, applied to fabric surfaces

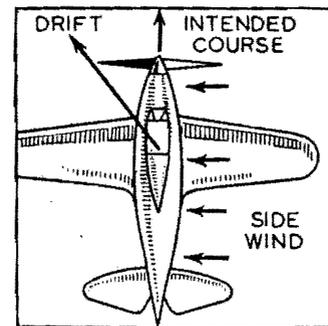
to stretch and render airtight. Usually of cellulose acetate in ether, alcohol or acetone.

Down-wind.—Along with the wind. In the direction in which wind is blowing.

Down Wash.—That current of air deflected downward relative to the aerodyne by an aerofoil. In a multiplane it may affect the airflow of the plane below.

Drag.—Resistance offered by a plane to the air through which it is driven. (See **Streamlining**.)

Drift.—When a plane is driven sideways from its pre-arranged course by side winds, the lost motion is called "drift."



DRIFT.

Dual Control.—An aeroplane is fitted with "dual control" when the flying controls and instruments are duplicated, thus allowing either of two persons to fly the machine without changing seats.

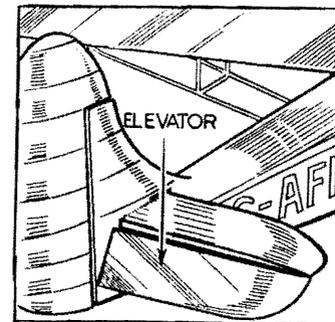
Duralumin.—An alloy of aluminium giving exceptional strength and lightness. Tensile strength 55,000 lb. to the square inch. Approximate composition is copper 4 per cent., manganese 1 per cent., magnesium 1 per cent., aluminium 94 per cent.

E

Eddy Motion.—The irregular behaviour of a fluid when it has exceeded a certain speed and will not continue moving in a straight line.

Edge.—*Leading Edge*: the anterior boundary of an aerofoil or any streamlined body. *Trailing Edge*: the posterior boundary of an aerofoil or any streamlined body.

Elevator.—Part of the tail assembly for controlling the up and down movement of the plane. Sometimes called "flippers."



ELEVATOR.

AIRCRAFT DICTIONARY

Empennage.—A general term used to refer to the tail unit of an airframe and including tail plane, elevators, fin and rudder(s).

Endurance.—The maximum time an aircraft can continue flying under specified conditions without refuelling.

E.A.—Enemy aircraft.

Engine.—The power unit of the aircraft ; usually of the internal combustion type, though steam has been used.

Envelope.—That portion of an airship enclosing a lighter-than-air gas whereby buoyancy is derived.

Evaporating Cooling.—A system of cooling which makes use of the fact that great heat is required to convert a liquid to a gas. Allowing the cooling fluid to boil, removing the heat, condensing and returning it to the cylinder jackets.

Experimental Mean Pitch.—That distance which an airscrew advances along its own axis during one revolution when giving no thrust.

Extra Lifter.—A small auxiliary lifting surface or wing usually placed between the landing wheels to increase the lift of the plane. During the War the Germans used this device on several machines. The wing-slot principle replaced this.

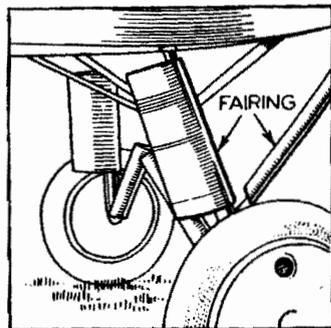
F

Fabric.—A fine cloth covering for wings and bodywork. Usually a very closely woven Irish linen.

Factor of Safety.—The ratio of maximum strength of any part to the maximum probable load it will be asked to carry. Thus if the factor of safety is 8, the part concerned will stand eight times the strain it will be asked to carry under normal circumstances.

Fairing.—A structure fitted to reduce drag and head resistance.

Falling Leaf.—An aerobatic manoeuvre. In this the machine flutters slowly down like a leaf. It is accomplished by cutting out the engine and side-slipping in alternate directions.



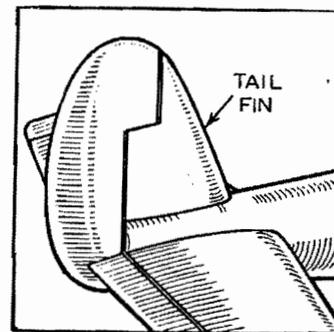
FAIRING.

AIRCRAFT DICTIONARY

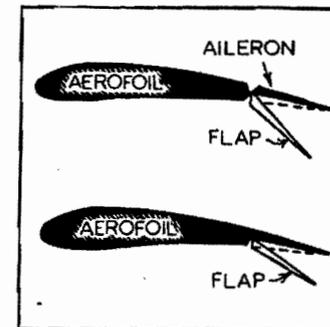
Fin.—A small fixed surface to help give stability. Usually situated just ahead of the rudder.

Fire Wall (or Fire Curtain).—Fireproof partitions separating the engine compartment from the rest of the body.

Fish-tailing.—A quick, side-to-side movement of the rudder, used when landing to reduce speed by creating extra wind resistance.



FIN.



FLAP.

Flap.—A hinged movable surface attached to the trailing edge of an aerofoil, used as a brake for landing purposes and making a flat glide steeper.

Flare.—A highly incandescent piece of material, used principally for illuminating a landing-ground. May be attached to the under side of an aircraft, to a parachute or used from the ground.

Flat Spin.—A continuous spiral dive with the longitudinal axis of the fuselage nearer horizontal than vertical.

Flatten-out.—To regain normal flying position after a dive, climb, zoom or glide.

Flick Roll.—A rapidly completed revolution about the longitudinal axis, in which combined use is made of both rudder and elevators.

Flight.—The smallest formation of aircraft, as used in the R.A.F., and consisting of a number of machines, according to type (e.g. three single-engined machines constitutes a flight, or five multi-engined machines. In the Fleet Air Arm a flight formation consists of four machines).

Float.—That part of a seaplane or amphibian which supports it on water.

Float Seaplane.—A seaplane having floats as its normal means of support on water.

Flutter.—A rapid unstable oscillation due to alternating forces.

Flying Blind.—Flying by instruments without seeing the ground.

Flying Boat.—A special type of seaplane which has the body built as a hull to serve as both boat and fuselage. Not an amphibian.

Flying Position.—The attitude of an aircraft when the lateral and longitudinal axes are parallel to the ground.

Flying Speed.—*Maximum*: the maximum airspeed attainable by an aeroplane or airship in level flight under standard conditions. *Minimum*: the minimum airspeed possible by an aeroplane without stalling in level flight under standard conditions.

Force.—That which produces or tends to produce a change of shape or motion of a body. Measured in the British system in poundals (i.e. 1 poundal is that force required to produce an acceleration of 1 foot per second on a freely moving mass of 1 lb.), and in the metric system in dynes (i.e. acceleration of 1 centimetre per second on 1 gramme).

Fracto-cumulus.—(See **Heap Clouds.**)

Fracto-stratus.—(See **Low Clouds.**)

Frame.—An aeroplane with its engine(s) removed.

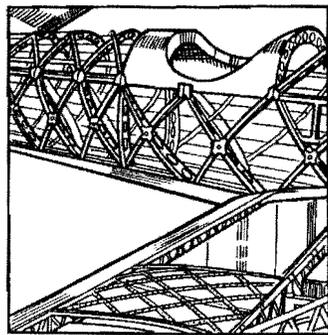
Fuselage.—The body of the aircraft. That part which houses the engine, cockpits and controls, and connects wings with tail unit.

G

Gap.—The distance between the chords of upper and lower wings.

Gas-bag.—A gas-containing unit of a rigid airship.

Geodetic Angle.—Consists of curved geodetic members spirally arranged around the main longitudinal frame members. A geodetic line is the shortest (surface) distance between two points on a curved surface.



GEODETIC ANGLE.

Geometric Pitch.—The distance which an element of an air-screw blade would advance in one revolution under conditions of no slip.

“George.”—Popular nickname in the R.A.F. for the automatic pilot device.

Glide.—A descent without aid of engine, but with sufficient speed to maintain level flight.

Glider.—A motionless heavier-than-air craft having fixed wings but no mechanical means of thrust.

Glider Angle.—The angle between the path of flight of an aerodyne and the horizontal while gliding. *Best Gliding Angle*: the minimum gliding angle obtainable by using the most economical angle of attack at which to fly.

Gore.—A fabric segment of a parachute or aerostat.

Gross Weight.—The maximum permissible flying weight of an aircraft. This is shown on the Certificate of Airworthiness of Civil Aircraft.

Ground Speed.—The speed of an aircraft relative to the ground, as distinct from airspeed.

Ground Strafing.—A low-flying attack on ground targets.

Guy.—A wire attached to distant parts of the aircraft to prevent spreading or distortion. Also used to denote control wires.

Gyroplane.—A mechanically driven aeroplane deriving its lift in flight largely from rotors freely rotating in a horizontal plane.

Gyroscope.—An instrument consisting in its simplest form of a symmetrical body rotating rapidly about an axis, the principle being that its position in space remains unchanged unless external force is applied. Modified for use in many instruments the accuracy of which depend on an unvaried position in space.

Gyroscopic Action.—The resistance which a rotating wheel or wheel-like object offers when an external force tries to change its plane of rotation.

Gyroscopic Level.—A gyroscopically controlled instrument which indicates the angle between the normal axis of an aircraft and the true vertical.

H

- Hand Starter.**—A device for rotating an aero engine for the purpose of starting other than by the airscrew.
- Hangar.**—A structure for housing aircraft. An aeroplane "garage."
- Harness.**—*Parachute*: a device whereby the rigging lines of a parachute are attached to the user. *Sutton*: a system of four fabric straps providing means of securing occupants of an aeroplane to their seats.
- Head Resistance.**—(See **Drag**.)
- Heap Clouds.**—Clouds with vertical structure. Height from 1,500 feet up to 20,000 feet. *Cumulus*: flat base, great height, cauliflower tops. *Cumulo-nimbus*: nimbus base, fibrous tops, thundery type. *Fracto-cumulus*: broken masses of cumulus.
- Hedge-hopping.**—Flying in such a manner that the plane just clears ground obstacles such as hedges.
- Height Computer.**—An instrument which, by consideration of the density factor, converts indicated to true altitude.
- High Clouds.**—Mean height above 20,000 feet. Composed of ice crystals. *Cirro-cumulus*: layer of small white tufts. Often in bands or ripples. *Cirro-stratus*: thin white veil over most of the sky. *Cirrus*: isolated fibrous wisps.
- Helicopter.**—A form of heavier-than-air machine in which the airscrews are on vertical axes and the machine is designed to ascend straight up or down.
- Horn.**—A small lever extending from any control surface to which the control wires are attached.
- Horse-power.**—An amount of work or energy equivalent to the lifting of 33,000 lb., one foot, in one minute.
- Hull.**—The main structure and flotation body of an amphibian or flying boat. Also the main structure of an airship.
- Humidity.**—The quantity of water present as vapour in a sample of air.
- Hump.**—Point at which the floats or hull of a seaplane change from their displacement lift to their hydroplane lift.
- Hump Speed.**—The speed at which the water resistance of a seaplane or amphibian is at a maximum.

I

- Hurricane.**—Wind force 12 (e.g. maximum) on Beaufort Scale. Only experienced in tornadoes, etc. Velocity of above 75 miles/hour.
- Hygrometer.**—An instrument for measuring the humidity of a gas.
- Identification Light.**—A light associated with, but differing from, a beacon by means of which it may be identified.
- Immelmann Turn.**—A manoeuvre made popular by the German airman, Max Immelmann, and consisting of a half-roll off the top of a loop.
- Incidence Wires.**—Wires or cables on a multi-plane aeroplane in the plane of two front and rear struts for bracing the mainplane structure.
- Indicated Air-speed.**—Air-speed as shown by an air-speed indicator agrees with true air-speed only if the density of the air through which the instrument is passing is standard. A further discrepancy is introduced by the compressibility of air due to the force of the pressure head. At any altitude indicated is less than true air-speed.
- Indicated Horse-power.**—The horse-power developed by the power plant of an aeroplane. It is the sum of the useful power produced plus the power lost in internal friction.
- Induced Drag.**—That portion of the drag which is due to the lift.
- Inclinometer.**—An instrument to show whether the nose of the machine is up or down; also adaptable to show whether wing-tips are level or not. Invaluable when in fog at height, or when there is no visible horizon by which to judge.
- Inertia Starter.**—A device for starting a power plant by transferring energy from a rapidly rotating flywheel to the crankshaft. The flywheel may be originally set in motion by hand or mechanical means.
- Inflation.**—The act of introducing a gas into the envelope or gas-bag of an aerostat.
- Inspection Port.**—A transparently covered opening in the side of the envelope of an aerostat for inspection purposes.
- Instability.**—That condition in which the deviation of an aircraft from steady flight tends to increase instead of returning to normal.

Interceptor.—A structure which moves up and interrupts the airflow under the open Handley Page slat when the aileron behind it is moved up. The drag of the wing tip is therefore increased and its lift is decreased. It remains down when the aileron is moved down to increase lift.

Interference.—The aerodynamic influence of one or more bodies on each other.

Intermittent Light.—Any light having dark and light periods when viewed from a fixed point. Termed a "Code Light" when by fixed durations of the periods its individuality may be recognised.

Internal Combustion.—Class of power plant in which fuel combustion takes place inside the cylinders.

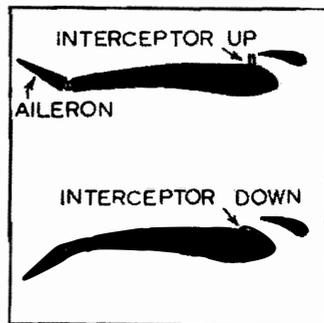
International Standard Atmosphere.—An imaginary atmosphere to which the performances of aircraft are referred for the purpose of comparison. It assumes: mean sea-level temperature 15°C .; pressure 1,013.2 millibars; lapse rate 6.5°C . per kilometre rise up to 11 kilometres above sea-level, at which it is assumed constant at 56.5°C .

Interplane Struts.—Structural members of a multiplane aerodyne joining the spars of one main plane in a vertical or inclined direction to those of the main plane above it.

Inversion.—A condition in which a definite layer of air shows an increase of temperature with height instead of the usual decrease.

Inverted Loop.—An outside loop. An evolution performed with an aeroplane in which it describes a complete circle about its lateral axis, the upper surface being to the outside of the circle.

Isobar.—A line on a weather chart joining points of equal barometric pressure at a standard height.



INTERCEPTOR.

J

Jettison Gear.—A device for releasing fuel and/or ballast from an aircraft in an emergency in order to reduce its weight.

"Joy-stick."—The control stick which governs the movement of ailerons and elevator.

Jury Strut.—A strut used temporarily as a means of maintaining rigidity, whilst part of the original structure is removed.

K

Katabatic Wind.—A wind caused by the convection currents of cold air moving down from high ground.

Keel.—A rigid framework along the underside of the hull of a rigid airship and on the underside of an envelope of a semi-rigid airship for distributing loads. The term is also applied to a similar structure on ships, flying boats and floats.

Kite.—A non-mechanically driven aeroplane anchored to, or towed from, the ground.

Kite Balloon.—A captive balloon so shaped as to derive stability from the relative wind.

Knot.—Unit of speed, being 1 nautical mile (6,080 feet) per hour.

L

Lamp.—*Landing*: a landing device carried on an aeroplane (similar to a motor-car headlamp). *Navigation*: a lamp for indicating the position of an aeroplane and its direction. A red lamp is usually carried on the port wing-tip, a green light on the starboard wing-tip, and a white light astern.

Land Breeze.—A wind movement from the land on to the sea due to convection currents caused by land and sea being at different temperatures. Occurs generally at night.

Landing Direction Light.—A light used on a landing ground for indicating the direction in which night landings are to be made.

Landing Gear.—That portion of the aircraft which supports it on the ground, or on water, and includes wheels, floats, skids or hull.

Landing Speed.—The speed at which an aeroplane can alight without undue shock.

Landplane.—An aeroplane only for alighting on and taking off from land.

AIRCRAFT DICTIONARY

Lapse Rate.—The rate at which temperature decreases with height.

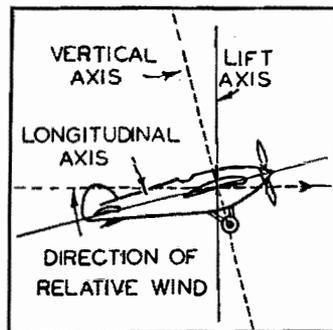
Lateral Axis.—A hypothetical line through the centre of gravity of an aircraft normal to the plane of symmetry. In an aeroplane it is usually considered to be parallel to a line joining the wing-tips. Angular movement about this axis is termed "pitching."

Lateral Clinometer.—An instrument which indicates the direction of the resultant force on an aircraft in its transverse plane.

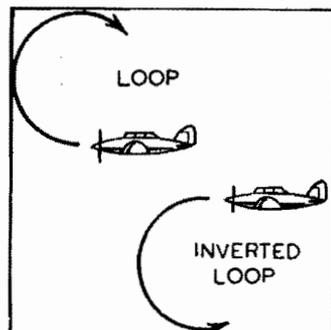
Lateral Stability.—Stability of movements out of the plane of symmetry, i.e. sideslipping, rolling and yawing.

Leading Edge.—The front edge of a wing; also called the entering edge.

Leeway.—Movement of the machine aside from the intended course, due to lateral drift of the air.



LIFT AXIS.



LOOP.

Lift.—In an aeroplane, that component of the force due to the relative wind along the lift axis; in an aerostat, the total buoyancy.

Lift Axis.—An arbitrary line in the plane of symmetry, through the centre of gravity perpendicular to the relative wind.

Light Aeroplane.—An aeroplane having a total all-up weight of less than 1,200 lb.

Longeron.—A member of the fuselage frame which runs from nose to tail.

Load Pay.—The part of the useful load (mails, passengers or freight) which can bring money to the operator.

AIRCRAFT DICTIONARY

Loading Power.—The flying weight of the machine divided by the horse-power of the engine.

Longitudinal Axis.—A hypothetical line fore and aft in the plane of symmetry and through the centre of gravity. Angular motion about this axis is termed "rolling."

Longitudinal Stability.—Stability of movements in the plane of symmetry, i.e. pitching.

Loop.—A complete revolution about the lateral axis with the upper surface of the aeroplane to the inside of the circle described.

Low Clouds.—Average height, below 7,000 feet.

M

Manœuvrability.—The quality of any particular aircraft to enable the pilot to change direction or altitude rapidly.

Magnetic Course.—The angle between a magnetic meridian and the longitudinal axis, measured clockwise from the former, usually in degrees.

Main Float.—The principal water-tight body of a floatplane whereby it derives buoyancy and on which it takes off and alights.

Main Plane.—A supporting surface of an aeroplane, including the ailerons.

Mass Balance.—Part of the rudder forward of its swivelling axis. Object is to balance stress and reduce operating effort.

Maximum Permissible R.P.M.—The number of revolutions per minute of the crankshaft of a power plant which must not be exceeded or maintained beyond a specified time.

"Mayday."—An international *s o s* of the air. (See **Distress Signal**.)

Medium Clouds.—Average height, between 7,000 and 20,000 feet.

Millibar.—The thousandth part of a bar, a bar being a unit of barometric pressure having the value of 750·1 mm. (29·531 inch) of mercury at 0° C. in latitude 45°.

Mist.—A slight fog due to condensation of moisture.

Mixture Control.—A device operating on the carburetter whereby the fuel/air mixture strength may be maintained constant with change of altitude.

AIRCRAFT DICTIONARY

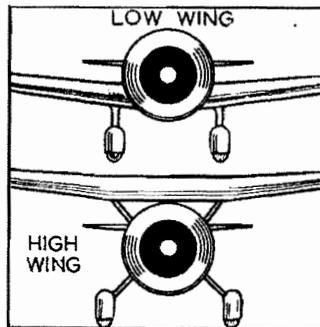
Monocoque.—A type of wing, fuselage or nacelle construction in which the skin takes most of the stress due to the loading of the structure.

Monsoon.—Regional winds which change direction with the season.

Mooring Mast.—A mast to which an airship may be moored.

Monoplane.—An aeroplane which is supported by one wing only.

Multiplane.—An aeroplane having more than three main planes or wings.



LOW AND HIGH WING
MONOPLANE.

N

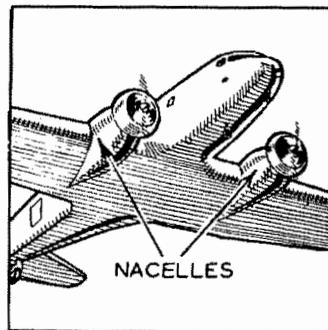
Nacelle.—A body enclosing crew and/or engines which does not belong to the main structure of an aircraft. In an aeroplane it may be situated on or between the main planes and does not extend back to the tail unit.

Navigation.—The science of determining and plotting position and predicting courses to attain a future position. Entails using position lines (obtained by visual, astronomical or radial means) and keeping a record of the aircraft's position by means of the tracks and distances made good.

Navigation Lamp.—A light carried by an aircraft to show its position and direction of motion.

Navigation Smoke Float.—A flare carried by an aircraft which may be dropped on water in order to determine the direction of the wind and the drift angle of the aircraft and which on striking the water emits a cloud of persistent coloured smoke.

Neck.—A tube at the base of a balloon envelope for inflation and deflation and also for the automatic discharge of gas in flight.



NACELLE.

AIRCRAFT DICTIONARY

Neutral.—The position of controls in which they have no effect.

Nightjar Club.—An unofficial club of the Fleet Air Arm, membership of which is restricted to pilots who have made a certain number of night landings on aircraft-carriers.

Nimbus.—(See **Low Clouds.**)

Non-rigid Airship.—An airship having no rigid keel but depending entirely on internal gas-pressure for maintenance of shape.

Normal Axis.—A hypothetical line through the centre of gravity in the plane of symmetry. When the lateral and longitudinal axes are horizontal, the normal axis is vertical.

Normal Flying.—Includes all manoeuvres required in normal cross-country flight, e.g. taking off, horizontal flight, climbing and gliding, turning, side-slipping and alighting but excluding aerobatics.

Nose-heavy.—When an aircraft is inclined to drop towards the earth nose first. Some models are equipped with a sliding weight by which they can be made nose or tail heavy at will.

O

Observation Mirror.—An engraved mirror used for the same purpose as a camera obscura.

Obstruction Light.—A lamp indicating an obstruction of danger to aircraft in motion.

Occlusion.—The residual front after a cold front has met a warm front and forced the warm air off the earth.

O.P.—Offensive Patrol.

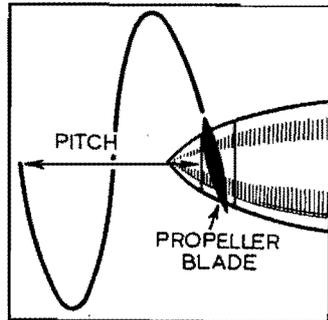
Ornithopter.—A type of machine with wings which are designed to raise the machine off the ground and sustain flight by flapping after the manner of a bird's wings.

Out of Track.—Condition of an airscrew when the tilt of one blade differs from that of the other.

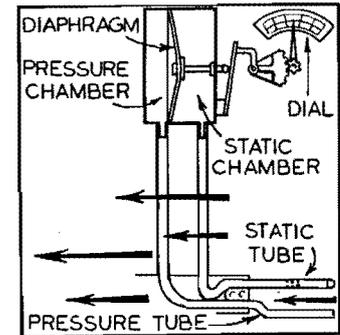
Oxidisation.—The act of combination of any substance with oxygen. May be very rapid, e.g. explosions, fairly slow, e.g. slow combustion, or very slow, as in the rusting of metals.

P

- Pack.**—The container enclosing a parachute.
- Palings Club.**—An unofficial club of the Fleet Air Arm for pilots, who, in landing on an aircraft-carrier, are unfortunate enough to collide with the protective palings round the flying-deck.
- P.A.N.**—The international distress signal for aircraft when flying over land.
- "Pancaking."**—Flattening out at too high an altitude, resulting in an ungainly landing. Resorted to sometimes when a landing must be made in a restricted area.
- Pants.**—(See Spats.)
- Parachute.**—A device whereby the pilot or passengers in an aircraft may leave the craft in emergency and descend slowly to earth.
- Parachute Flare.**—A pyrotechnical device attached to a parachute which provides an illuminated area.
- Payload.**—That part of the useful load being of commercial value and providing a source of revenue.
- Perch Club.**—A Fleet Air Arm Club, also unofficial, for pilots who have made a certain number of successful landings on the deck of an aircraft-carrier.
- Performance.**—The essential flying characteristics of an aircraft referred to standard atmosphere, e.g. rate of climb, speed in level flight, ceiling, etc.
- Pilot.**—The driver or operator of an aircraft.
- Pilotage.**—A science entailing the employment of visible landmarks to direct the aircraft from place to place.
- Pilot Balloon.**—A free balloon used to investigate the wind characteristics at various heights.
- Pitch.**—The distance which a propeller would move forward during one revolution. Similar to the movement of a nut on a bolt.
- Pitching.**—An angular motion about the lateral axis.



- "Pitot."**—Actually "Pitot-tube," a cylindrical tube with its open end pointed so that it meets the air head-on as plane travels forward; the pressure is recorded as "air-impact" and it actually registers ground speed.
- Plane.**—Actually, an individual airfoil, but loosely used to designate the whole machine.
- Plane of Symmetry.**—That plane dividing the body into two parts, one of which is the mirror image of the other. An aircraft has a fore-and-aft vertical plane of symmetry.
- Planing Bottom.**—A smooth surface on the underside of the hull of a flying boat or of a float, lying forward of the main step.



"PITOT-TUBE."

- Porpoising.**—Undulating movement of a seaplane or amphibian about its lateral axis when taxiing. A form of instability on the water.
- Port.**—The left-hand side of an aircraft as one faces forward.
- Power.**—The time-rate of expended energy when work is done.
- Power Loading.**—The ratio of the flying weight of an aircraft to the rated horse-power of the engine(s) (usually expressed in τ lb. per horse-power).
- Pressure Gradient.**—The rate of change of pressure in a horizontal plane on a line normal to the isobars of a weather chart.
- Profile Drag.**—A drag component set up by the resistance of the curved surface of a body to the impinging air.
- Projection.**—The shadow of an aircraft cast by it on the ground.
- Propeller.**—The wood or metal airscrew which, driven by the engine, pulls or pushes the aircraft through the air.
- Pterygoid.**—The type of birds' wings which are long and narrow. The opposite of Apteroid.
- Pusher Aeroplane.**—An aeroplane in which the airscrew is situated to the rear of the main structures.
- Pylon.**—A tower-like structure, similar to that used for derricks but utilised as a signal or beacon.

AIRCRAFT DICTIONARY

Q

"Quirk."—Nickname for a war-time B.E.2c biplane, also applied to inexperienced pilots and flying pupils.

R

Radiator.—Any body which radiates heat. Specifically in aircraft engines, a device through which the fluid of the cooling system circulates in order to dissipate heat.

Radius of Action.—Half the range of an aircraft in still air.

Range.—The number of miles a plane can fly, when fully loaded and fuelled, without coming down.

Rarefaction Surface.—The correct term for the so-called "vacuum-surface." The opposite side to the "compression-surface" of a propeller or plane.

Restoring Moment.—That moment tending to restore an aircraft to its original position after any disturbing movement.

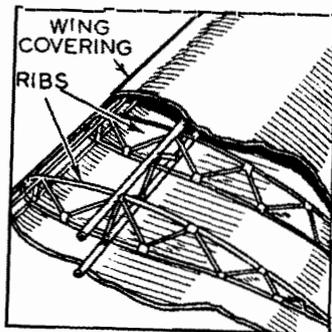
Rev.—To give the motor short bursts of speed prior to taking off. Actually, to cause the crankshaft to revolve.

Reversal of Wind.—A change of greater than a right angle between the direction of the surface wind and that of the upper air.

Ribs.—Small construction members used in building up surfaces. They usually run fore and aft, crossing the main wing spars. As a rule, they are shaped to the curve of the wing.

Riding Lamps.—Lights carried by aircraft when anchored or moored.

Rigger.—Craftsman who assembles the aircraft and aligns the parts.



RIBS.

AIRCRAFT DICTIONARY

Rigging Lines.—Those cords joining the canopy of a parachute to the harness.

Rigging Position.—An arbitrary position of an aeroplane specified by the makers, to which all rigging details are referred.

Rigid Airship.—An airship in which the desired shape of the hull is maintained by a rigid framework.

Roll.—A manoeuvre in which the plane rolls over sideways without stopping its forward flight.

Rudder.—A vertical surface, usually mounted at the tail of the plane and used to steer, exactly as in a boat.

Rudder Bar.—The bar against which the pilot rests his feet and with which, through steel cables, he operates the rudder.

Rumble.—A pilot who "undershoots" the aerodrome when gliding in and has to use his engine to cross over the boundary, is said to "rumble" in.

Runway.—That portion of an aerodrome specially prepared for the alighting and taking off of aeroplanes.

S

Safety Strap.—A belt to hold the pilot or passenger in the plane. Absolutely essential even if not "strapping."

Sandstorm.—A wind laden with sand or dust particles, which may cover a very large area.

Screening.—Housing of the entire ignition system within a bonded and earthed metal sheath to prevent interference with the wireless equipment.

Sea Marker.—A device dropped from aircraft on water to give an indication of its relative speed and drift angle.

Seaplane.—An aeroplane specially adapted to taking off and alighting on water. Main types are flying boats and floatplanes.

Semi-rigid Airship.—An airship having a rigid keel but depending mainly on internal gas pressure for maintenance of shape.

Service Ceiling.—The height in Standard Atmosphere at which the rate of climb has decreased to a certain definite limit, e.g. 100 feet per minute.

AIRCRAFT DICTIONARY

Service Load.—The total weight of the crew, removable armaments and equipment normally carried in an aircraft.

Servo Control.—A means of assisting a pilot to operate a control surface by an aerodynamic force.

Sheathing.—A method of protecting wooden airscrews by attaching some other material to the tips and leading edges.

Ship Plane.—An aeroplane specially adapted to taking off and alighting on a ship's deck.

Shock Absorber.—A mechanical device to take up the shock of landing, usually built into the landing gear. Rubber cable is also used.

Side Slip.—Movement to one side while maintaining forward flight. Can be induced by holding one wing low.

Sidcot Suit.—A one-piece, fur-lined waterproof flying-suit.

Signal Rocket.—A rocket discharged from the ground to indicate the position of a landing ground or to convey information to an aircraft.

Signalling Lamp.—A light used for visual signalling.

Sit on the Tail.—To keep directly behind another machine, the most vulnerable position for the pilot of a single-seater fighter whose guns will only fire directly ahead.

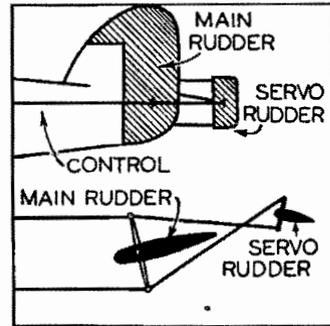
Skid.—An involuntary sideways movement through the air. A skid is almost invariably caused by novices attempting to turn without sufficient "bank."

Skidding.—Movement of an aeroplane outwards on a turn. Occurs when too little bank is employed.

Slat.—A small auxiliary aerofoil, which is placed in front of the leading edge of an aerofoil and when in the forward position prevents the formation of a wide turbulent wake.

Slip Stream.—(Same as **Back-wash.**)

Slotted Aerofoil.—An aerofoil fitted with a slat which at a stall is drawn forward, thereby opening a slot which allows air to pass on to the upper surface of the aerofoil, destroying the turbulent wake and so delaying the stall.



SERVO RUDDER.

AIRCRAFT DICTIONARY

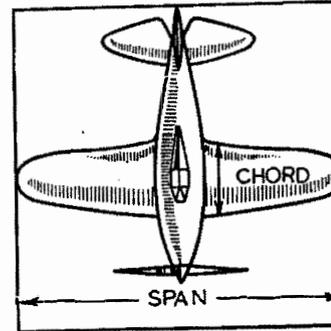
Slow Roll.—An aerobatic manoeuvre consisting of a slow revolution about the longitudinal axis accomplished principally by use of the ailerons.

Smoke Generator.—A device which may be dropped from an aircraft on to land to indicate wind direction or drift angle.

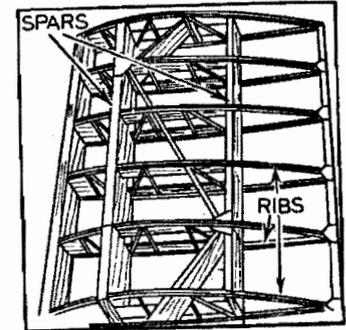
Solo.—Flying alone.

Span.—The distance from wing tip to wing tip of an aircraft.

Spar.—A principal strength member supporting auxiliary members of a main plane or control surface.



SPAN AND CHORD.



SPAR.

Spats.—The fairings used on the wheels of fast machines to assist streamlining and reduce wind resistance.

Speed (Landing).—The minimum speed at which an aircraft can be landed with sufficient control for safety.

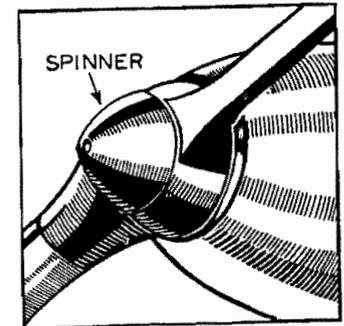
Specific Consumption.—The quantity of fuel or oil consumed, stated in pints per brake-horse-power per hour.

Spill.—Escape of air from within the canopy of a parachute, due to irregularity of descent.

Spin.—When the plane falls earthward with tail waving around. Sometimes induced deliberately as a manoeuvre.

Spinner.—An extension of the propeller boss to improve the streamlining of a machine. Used in all high-speed craft.

Spiral Glide.—An unstalled banked turn with engine(s) giving no thrust.



SPINNER.

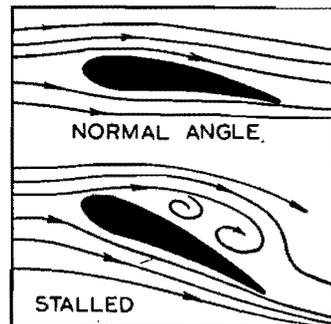
AIRCRAFT DICTIONARY

Squadron.—A squadron in the R.A.F. consists of three flights of single-engined machines, or two of multi-engined machines.

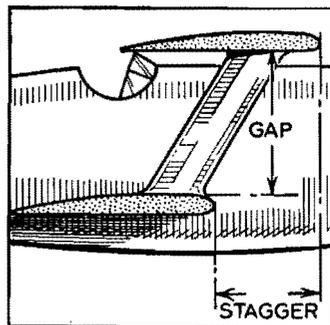
Squall.—A strong wind of short duration, often associated with change of wind direction.

Stability.—The plane's ability to fly level with minimum of attention. There is a marked difference in the stability of various machines, some being capable of being flown "Hands Off" for a considerable time, while others require constant care and vigilance.

Stabiliser.—A fixed horizontal surface, usually fixed just ahead of the elevator, designed to help stability.



STALL.



STAGGER.

Stagger.—If one main plane of a multiplane aeroplane in the flying position be in front of another main plane, they are said to be staggered. The stagger is positive if the uppermost plane be in advance of the plane immediately below it.

Stall.—When an aircraft loses sufficient speed for control or support it is said to be stalled. Often caused by an attempt to climb or zoom at too steep an angle, or for too long a time.

Stalling Speed.—That speed at which an aeroplane or glider just maintains level flight with its wings at their stalling or critical angle.

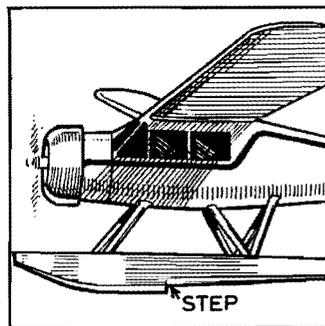
Starboard.—The right-hand side of aircraft as one faces forward.

Starters.—A device for starting an engine by letting compressed air into the cylinders.

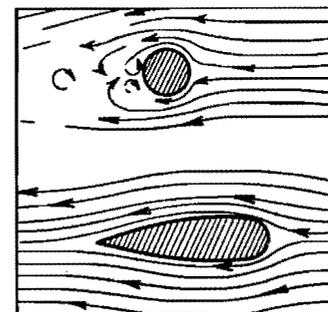
Static-pressure Tube.—A closed tube with perforated sides containing air, the density of which varies only with the surrounding atmosphere. Used as a reference pressure head in an air-speed indicator. (See "Pitot Tube.")

AIRCRAFT DICTIONARY

Stay.—A constructional member of the aircraft, designed to support a pulling strain, usually of wire.



STEP.



STREAMLINES.

Step.—A break in the under-surface of a hull or float of a seaplane to assist its taking off.

Strainer.—(See Turnbuckle.)

Strato-cumulus.—(See Low Clouds.)

Stratosphere.—The outer layer of the atmosphere in which the lapse rate is negligible, starting at about 8 miles above sea-level.

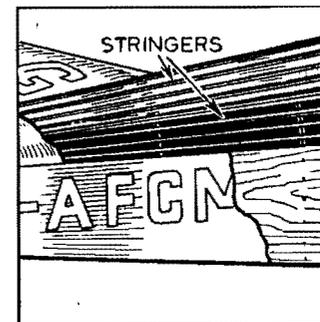
Stratus.—(See Low Clouds.)

Streamline Wires.—Wires forming part of the external structure of an aircraft being of approximately streamlined section.

Streamlining.—Shaping or curvature of body and other parts with a view of reducing air-resistance to a minimum.

Stringer.—Strips of wood attached to ribs and fuselage members, etc., to provide a good contour and maintain correct curvature.

Strut.—(a) The short members which connect the longerons of the fuselage. (b) The upright braces which connect the top and bottom wings of a biplane.



STRINGER.

AIRCRAFT DICTIONARY

Stub Plane.—A projecting portion of a fuselage or hull to which the main portion of the plane is attached. The name is also given to projections from the hull of a flying boat which assist stability on the water.

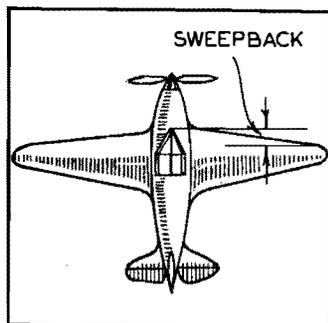
"S" Turn.—A method of losing height, when approaching an aerodrome to land; the machine is manœuvred in a series of S-shaped turns beyond the aerodrome boundary.

Supercharger.—A device which forces a greater weight of charge into the cylinder than would be induced by normal intake under the reduced pressure at altitude. Normally situated between carburetter and induction chambers.

Surface Friction Drag.—That drag component caused by the resistance to the movement of a fluid over the surface of a body.

Sutton Harness.—The straps used by a pilot to keep himself in position in his seat when performing aerobatics.

Sweepback.—When the main planes of an aerodyne are inclined backwards, making an angle of less than 90° with the longitudinal axis.



SWEEPBACK.

T

Tachometer.—An instrument to indicate the revolutions per minute (usually termed R.P.M.) generated by the engine. A sudden drop in the R.P.M. indicates engine trouble.

Tail Assembly.—Also known as "tail-unit" and "empennage." The group of surfaces at the rear of the fuselage comprising fin, rudder, stabiliser and elevator.

Tail Booms.—Main longitudinal spars which give attachment to the tail unit of an aerodyne that has no fuselage.

Tail Float.—A water-tight body situated below the tail unit of a seaplane.

Tail-heaviness.—A state of static balance in which an aircraft in the air shows a tendency to raise its nose.

AIRCRAFT DICTIONARY

Tail-heavy.—When aircraft is inclined to drop towards earth, tail first.

Tail Plane.—A horizontal surface which forms part of the tail unit of an aeroplane and assists in maintaining longitudinal stability in flight.

Tail-setting Angle.—The acute angle between the chord line of the main plane and the chord line of the tail plane.

Tail-skid.—The projecting wooden skid, usually metal shod, which keeps the tail assembly off the ground when plane is at rest.

Tail Slide.—The backward movement of a plane immediately following a stall and before actual spin commences.

Take-off.—The act of leaving the earth (land or water), as performed by an aeroplane. This is prefaced by a short run except in the case of helicopters.

Tare Weight.—The weight of an aircraft in flying order, with water in the radiators but no crew, fuel, oil, dischargeable weight or payload.

Tarmac.—The tar, or macadam, frontage to the landing area of an aerodrome.

Taxi.—The movement of an aircraft on the ground or water under its own power, before or after taking off.

Terminal Nose Dive.—A dive at terminal velocity.

Terminal Velocity.—The maximum velocity attainable by an aircraft at the optimum angle to the horizontal, the power plant and airscrew operating under specified conditions being referred to Standard Atmosphere.

Thermometer.—An instrument for indicating temperature. May read in the scales of Centigrade, Fahrenheit or Absolute.

Three-point Landing.—A perfect landing in which the two wheels and the tail skid touch the ground simultaneously.

Thrust.—That force exerted by the component of the resultant air force on an airscrew along the thrust.

Thrust Line.—An imaginary line drawn through the axis of rotation of the airscrew.

Thrust Line.—An imaginary line coincident with the prolongation of the airscrew shaft.

Torque.—The force which tends to revolve an aircraft sideways or round its longitudinal axis.

Townend Ring.—A ring of metal fitted round a radial engine as a means of streamlining. It also serves the purpose of assisting cooling by deflecting air on to the engine.

AIRCRAFT DICTIONARY

Tracer.—A phosphorous-loaded bullet whose course through the air can be seen by day or at night.

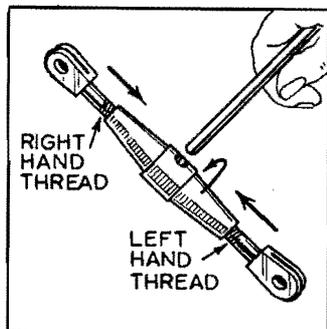
Track.—The course taken by the projection of the centre of gravity of an aircraft on to the earth's surface.

Track Angle.—The angle at any instant between the track and a meridian.

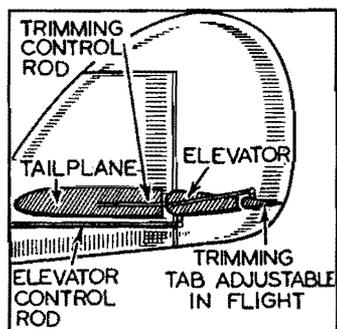
Tractor Aeroplane.—An aeroplane deriving its thrust from an airscrew(s) situated in front of the main planes.

Trade Winds.—Persistent winds in the region of 30° latitude N. and S. to the Equator, being north-easterly in the Northern Hemisphere and south-easterly in the Southern.

Trailing Edge.—The rear edge of an aeroplane's wing.



TURNBUCKLE OR STRAINER.



TRIMMING TAB.

Trimming Tab.—A small tab attached to the trailing edge of a lifting or control surface by which minor rigging errors and structural irregularities dangerous at high speeds may be counteracted. May be adjusted on the ground or in the air.

Triplane.—An aircraft with three wings placed one above the other.

Tropopause.—The boundary between the troposphere and stratosphere.

Troposphere.—The inner layer of the atmosphere.

True Course.—The angle between the longitudinal axis of an aircraft and a true meridian, measured clockwise from the latter.

Turbulent Flow.—The irregular motion of a fluid.

AIRCRAFT DICTIONARY

Turnbuckle.—(Same as **Strainer**.) A device with a nut at each end, taking screws of opposite threads, one left-hand and the other right-hand. Used to tighten or slacken wire stays.

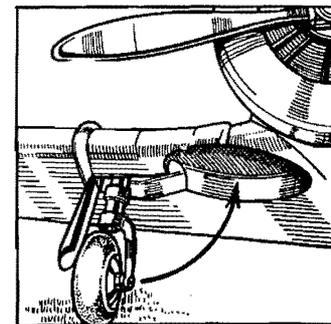
Turn Indicator.—An instrument for indicating the deviation to port or starboard of an aircraft.

Turret.—An enclosed cockpit primarily intended for the use of a gunner(s).

U

Undercarriage.—A portion of the alighting gear, consisting of the main wheels, skids or floats and attendant struts, etc. May be retractable.

Useful load.—The gross weight minus the tare weight.



RETRACTABLE UNDERCARRIAGE.

V

Vaporiser.—Part of high-altitude flying equipment which vaporises liquid oxygen for the pilot's consumption.

Variable-pitch Airscrew.—An airscrew having helical blades whose angle to the thrust axis may be varied whilst in rotation.

Veering.—A wind change in a clockwise direction.

Velocity.—A vector quantity involving both speed and direction.

Viscosity.—The internal friction of a fluid, being the opposite of fluidity.

Visibility.—The maximum distance at which objects can be distinguished.

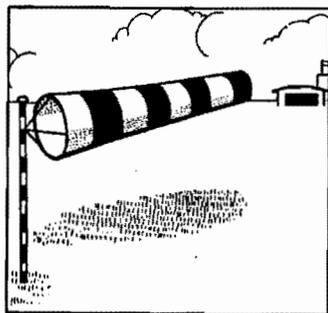
Vortex.—In hydrodynamics, a portion of fluid in rotational motion.

AIRCRAFT DICTIONARY

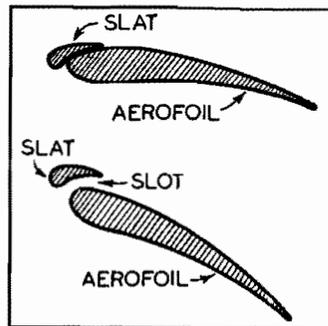
W

Wash-in.—Denotes an increasing angle of incidence towards the wing-tip.

Wedge.—A high-pressure region, usually shown Y-shaped by isobars, situated between two depressions.



WIND SOCK.



WING SLOTS.

Wind Sock.—A fabric tube suspended on an aerodrome to denote the direction of the wind. The same as wind-lane.

Wing Loading.—The gross weight of an aeroplane per unit area of the main plane (including ailerons).

Wing Skid.—A small skid, or runner, under the wing tip to prevent damage in case of violent contact with the ground on landing.

Wing Slots.—A safety device, invented by Handley Page, and consisting of hinged sections in the leading edge of the wing. These open automatically and prevent "stalling."

Wires.—Wires which transfer the drag of the wings to the fuselage.

Write-off.—To crash an aeroplane beyond repair.

Z

Zoom.—To cause an aircraft to climb for a short period, at a much steeper angle than is normal. Effected by giving the engine full throttle and pulling the nose up abruptly. If continued too long will lead to a stall. The zoom is an essential part of the manœuvre known as "looping-the-loop."

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