

GAWLER MICROLIGHTS

Learning new activities often also requires the learning of new words and terminology or new meanings to words, as is the case in aviation and more particularly in our own special form of aviation, namely that of hang gliding and microlights

During your period of instruction or indeed in general conversation with other pilots, a basic understanding of these words and their meaning will be of great benefit

As a guide we include here a Glossary of Terms to assist in your learning. This list is by no means complete and you are encouraged to add to it as you see fit. If you have any doubt as to the meaning of a term and/or its practical application to you and your flying then please ask your instructor to explain it

GLOSSARY OF TERMS:

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| AGL | Above ground level |
| AMSL (A.S.L.) | Above mean sea level (Above sea level) |
| ASI | Airspeed indicator |
| ADVERSE YAW | The yawing of an aircraft in the opposite direction of the control input (pilot rolls left, aircraft yaws right, for example) |
| AEROTOWING | Towing of a hang glider aloft with a trike or ultralight. |
| AIRFRAME | Metal frame of a hang glider that supports sail. Made up of tubing, cables, plates and bolts. |
| AIRFOIL (AEROFOIL) | Shaped wing section, designed to provide lift. |
| AIRSPEED | Speed at which an aircraft passes through the air |
| ALTIMETER | Instrument that measures altitude. |
| AMBIENT TEMPERA TURE | The outside air, or surrounding air temperature. |
| ANGLE OF ATTACK | The angle between the <i>chord line</i> and the <i>relative air flow</i> . |

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| ANHEDRAL | A downward angling of the wings from the root (centre) to the tips. |
| APPROACH | Planned path an aircraft flies toward landing. |
| ASPECT RATIO | Measure of how long and narrow a wing is. Determined by dividing a wing's span by its average chord. |
| ATTITUDE | The relative position of the aircraft's nose and/or wing compared to horizon |
| BALLAST | Additional weight carried by a pilot |
| BASE LEG | Segment of aircraft's landing approach. Precedes final leg. |
| BATTEN | <i>Formed</i> rib that slips into sail to define airfoil shape. |
| BEST ANGLE OF CLIMB | The speed at which the aircraft climbs at its maximum capability in the shortest distance. |
| BEST RATE OF CLIMB | The speed at which the aircraft climbs at its maximum capability in the shortest time. |
| BEST GLIDE SPEED | Airspeed at which an aircraft achieves best glide. |
| BLUE HOLE | A clear area in an otherwise cloud studded sky. |
| BUNGEE | Elasticised cord used to fasten battens. |
| C.A.S.A. | Civil Aviation Safety Authority |
| C.A.O. | Civil Aviation Order |
| C.A.R. | Civil Aviation Regulation |
| CAMBER | Cross-sectional curvature of an airfoil. |
| Cb | Short for Cumulus-Nimbus. Dangerous anvil shaped thunder cloud. |
| CG | Abbreviation for the Centre of Gravity |

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| CHORD | Distance from leading to trailing edge of a wing. |
| C.H.T. | Cylinder Head Temperature |
| CLOUDBASE | Altitude of cloud bottoms. |
| CLOUDSTREET | Cumulus clouds aligned in ' streets' by wind. |
| CLOUDSUCK | Strong lift below a cloud that may pull a pilot into the cloud. |
| CONVERGENCE | A flowing together of air masses resulting in an upwelling or lift. |
| CONTROL BAR | Triangular A-frame used to control wing. Made up of 2 down tubes and base bar. |
| CONTROLLED AIR SPACE | Airspace under direct control by Air Traffic Controllers. (C. T.A. - Control Area), (C. T.R. - Control Zone) |
| COORDINATION | Blending of pitch and roll inputs to produce smooth turn. |
| CRITICAL ANGLE | The angle of attack at which the aerofoil has developed maximum lift. |
| CROSSBARS | Main aircraft structural members that run between keel and leading edges. |
| Cu | Abbreviation for Cumulus. Puffy white cloud that often indicates thermal lift. |
| DACRON | Trade name. Synthetic material used to make aircraft sails. |
| DIHEDRAL | An angling up of an aircraft' s wings from the root (centre) to the tips. |
| DIVERGENCE | Tendency for aircraft to increase steepness of dive. Indicates dangerous lack of pitch stability. |

DOUBLE SURFACE

Aircraft with upper and lower sail surfaces that enclose airframe to reduce drag and improve performance.

DRAG

The force created by relative airflow on the aircraft. The three major forms of drag are induced drag - a by product of lift, form drag - the drag caused by air resistance of the frontal area of the air. aircraft, and parasite drag - the drag created by items such as undercarriages, antennae, flying wires, bracing wires etc.

DUST DEVIL

A swirl of air created by a thermal in strong conditions that picks up dust .

DYNAMIC STABILITY

The tendency of an aircraft to settle to trim speed when it is pitched rapidly up or down.

E.G. T.

Exhaust Gas Temperature

FINAL

Last leg of a landing approach.

FLARE

Flight pre touchdown when the pilot lessens the angle of descent to allow flight parallel with the runway. (The hold-off follows the flare)

FRONT

Boundary between air masses of different temperature and pressure.

G.FORCE

Gravity force. G forces can be more than one gravity in turns and other accelerations.

GLIDE RATIO

Angle at which aircraft descends through air. Determined by how much lift and drag a particular wing produces.

GROUND EFFECT

Tendency of an aircraft to glide farther when flying close to the ground.

GROUND SPEED

Speed at which aircraft passes over ground.

H.G.F.A.

Hang Gliding Federation of Australia.

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| HEADING | Direction aircraft is heading, alignment of the fore-aft axis in relation to a geographical datum. |
| HOLD-OFF | The period of flight pre-touchdown in which the pilot progressively increases the angle of attack of the wings in order to land at the lowest possible speed. The flare precedes the hold off. |
| HYPOXIA | Lowered oxygen in the bloodstream (due to altitude effects <i>in our case</i>). |
| INDUCED DRAG | Drag caused as result of the wings producing lift and thereby disturbing the airflow. |
| INVERSION | Weather condition in which warm air is trapped aloft, inhibiting thermal development. |
| KEEL | Main structural tube that runs along sail at centre chord of wing. |
| KINGPOST | Vertical strut on top of aircraft that supports negative rigging and luff line systems. |
| LAPSE RATE | Rate at which the air cools with altitude change. |
| LATERAL AXIS | An imaginary line drawn through the centre of gravity from wing tip to wing tip, at right angles to the longitudinal axis. |
| LEADING EDGE | Front edge of the wing. |
| LIFT | The sum of the aerodynamic forces perpendicular to the flight path of a wing. |
| LIFT | Rising air . |
| LIFT TO DRAG RATIO | Amount of lift and drag produced by a wing. Determines an aircraft' s glide ratio. |

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| LOGBOOK | Book that records a pilot' s flights. Documents experience and accomplishments. |
| LONGITUDINAL AXIS | An imaginary line drawn from the nose of the aircraft to the trailing edge of the rudder, through the centre of gravity, at right angles to the lateral axis. |
| LOW INERTIA TYPE | An aircraft with weak tendencies to resist displacement from its flight path. Inertia is the tendency of a body to continue to travel in a straight line in space until an external force is applied. |
| LUFF LINES | Lines running from kingpost to trailing edge. Aid to dive recovery. |
| MINIMUM SINK SPEED | Speed at which aircraft descends most slowly through the air. Often abbreviated as ' min. sink' . |
| MYLAR | Trade name. Smooth plastic material used as stiffener in hang glider sails. |
| NICOPRESS | Oval metal slug used to clamp cables. (swage) |
| NOSE ANGLE | Angle of leading edges to each other when viewed from above or below. |
| NOSEPLATE | Metal plate at junction of keel and leading edges. |
| NYLOC | Nut with elastic nylon insert that prevents it from unthreading by accident. |
| PARASITIC DRAG | That part of drag caused by solids disrupting the air flow. Parasitic drag plus induced drag equals total drag on an aircraft. |
| PITCH | Nose up or down attitude. Movement about the lateral axis. |
| PITOT TUBE | A tube pointing directly into the air flow to measure dynamic pressure and thus air speed. |

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| PUSHERPROPELLER | An engine/propeller configuration in which the propeller is mounted behind the engine. |
| RELATIVE AIRFLOW | R.A.F. The airflow created by the movement of an aircraft through the atmosphere. |
| REFLEX BRIDLES | Thin cables running from the kingpost to a sail' s trailing edge whose purpose is to hold reflex in the sail (simulating up elevator on an airplane) in low or negative angle of attack situations in order to provide pitch stability. (luff lines) |
| RIDGE LIFT | Lift created by upward deflection of wind striking a ridge. |
| ROLL | Banking or unbanking movement. Roll about the fore/aft axis. |
| ROOT | Centre section of wing. |
| ROTOR | Swirling air downwind of an obstacle. |
| SAFETY PIN | Pin fastened through end of bolt to prevent nut from falling off. |
| Sc | Stratocumulus (cloud) |
| SINK | Descending air . |
| SLIP | Uncoordinated turn that results in high airspeed and sink rate. |
| SOARING | Staying aloft by finding and manoeuvring within rising air. |
| SPAN | As in ' wingspan' . Distance ofn wing tip to wingtip. |
| SPIRAL STABILITY (OR INSTABILITY) | Tendency of an aircraft to hold or depart from a given bank angle during a turn. |
| SPIRAL DIVE | High speed slip that causes aircraft to descend rapidly. |

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| St | Stratus (cloud) |
| STALL | Loss of lift due to critical angle being exceeded. (Angle of Attack too high) |
| SWEEP | Angling of wings so that tips are behind nose when seen from above or below. Aids pitch and yaw stability |
| THRUST | The force which opposes drag, created by a propeller driven by an engine. Power = thrust x velocity. |
| THERMAL | Rising column or bubble of warm air . |
| THUNDERSTORM | Overdeveloped thermal lift that results in large, fast cloud build-up with possible lightning, precipitation, strong winds and turbulence. |
| TIP | End of wing. |
| TRAILING EDGE | Rear edge of wing. |
| TRIM | The angle of attack or bar position that a stable aircraft settles on hands off Hopefully this is between stall speed and best glide speed. |
| TUMBLING | The action of an aircraft flipping head over keels. |
| TURBULENCE | Random or organized (as in rotor) movement of the air. |
| UNDERSURFACE | Bottom surface of an aircraft' s sail. |
| V.N.E. | Velocity Never to be Exceeded. This is the design maximum speed to which the airframe has been stressed and beyond which airframe failure can occur. |
| V.S.I. | Vertical Speed Indicator. |
| VORTEX | Contrail of swirling air created at wing tip by differential pressure above and below wing as an aircraft flies. Source of wake turbulence. |

WAKE TURBULENCE

Turbulence created by an aircraft's passage through the air.

WASHOUT

A lowering of the angle of attack of a wing as it progresses from root to tip.
A twisting of the wing.

WIND GRADIENT

Slowing of air next to ground caused by surface friction. Can be very noticeable in the last 30'-50' .

WIND SHADOW

Zone of still air behind obstacles such as trees, buildings or other obstructions.

WIND SOCK

Tubular wind indicator made of fabric and mounted on pole.

WING LOADING

Ratio of wing area to weight carried in flight. Determined by dividing total wing area by the combined weight of pilot, aircraft and all gear that will be carried in flight.

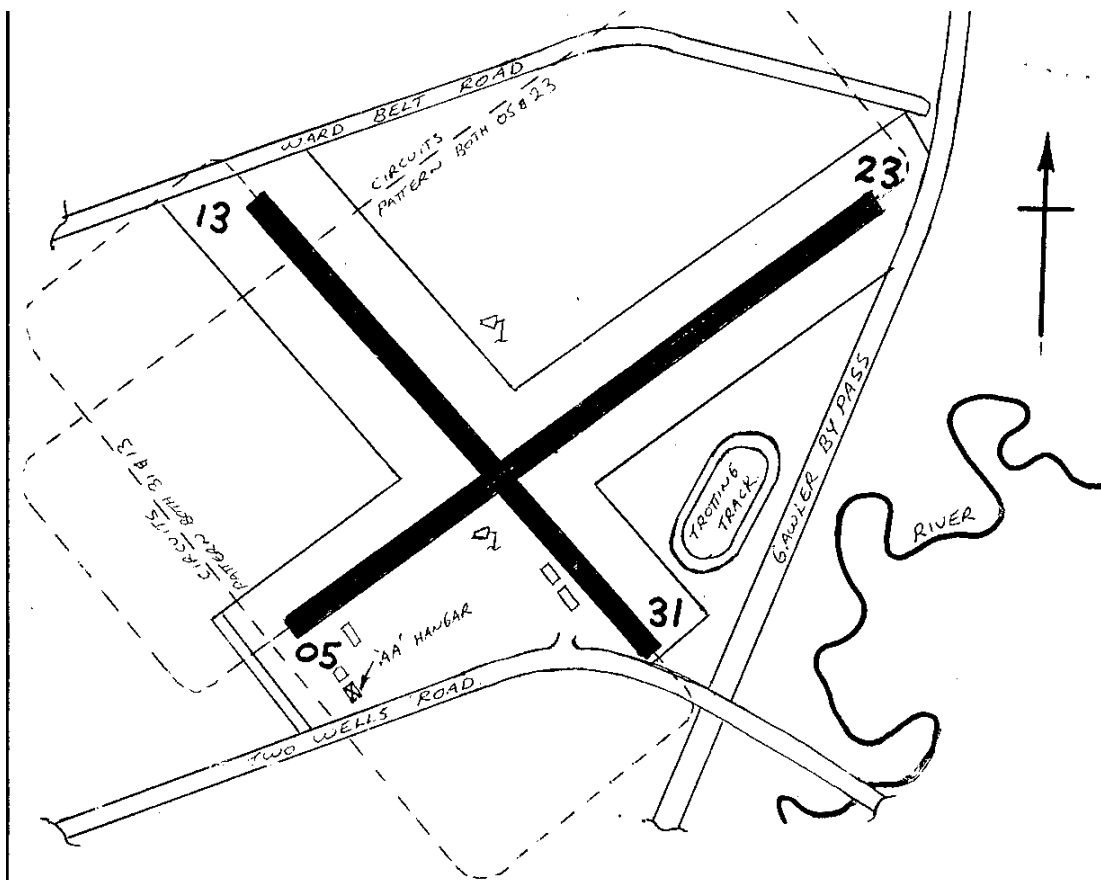
YAW

Movement about the vertical axis.



GAWLER MICROLIGHTS

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GAWLER AIRFIELD (YGAW)

Height -167 ft AMSL Var 8 E Lat.- 34 36.1'S Long. - 138 43'E

Area Frequency AD 122.4 Adelaide Soaring Club Freq. 122.5

Runways 31 & 05 are Left hand Circuits, 13 & 23 are Right Circuits

Inbound and Circuit Calls on Club Freq. 122.5 (monitored by Club)

A.S.C. Club "Pie Cart" Van is Parked at beginning of active runway when Gliders are operating.

All Trikes should use the same Runway as the Gliders, when possible, or make a Radio Call to make your intentions clear.