

Glossary of Terms

Acceleration Error

An error induced in the attitude indicator and magnetic compass during acceleration and deceleration. There is also a turning error in the compass.

Accelerator Pump

An additional fuel jet incorporated in a carburettor to pump extra fuel into the air as the throttle is moved forward. It compensates for lag in power response, as air would otherwise start flowing before fuel and thereby weaken the mixture.

Accumulator

A pressurised reservoir used in hydraulic systems to help maintain hydraulic pressure and dampen out pressure surges.

Actuator

A piston-like device in an hydraulic system that converts the fluid pressure into useful mechanical movement.

Aerodynamic Twisting Moment (ATM)

The force on a variable-pitch propeller where the blades tend to move to a higher angle by the aerodynamic force being ahead of the blade feather axis (axis of twist).

After Top Dead Centre (ATDC)

The amount the crankshaft moves after the piston has reached *top dead centre* (TDC), the highest point of its travel, measured in degrees of rotation, e.g. 7 degrees ATDC.

Air Switch

A switch/vane sensitive to dynamic pressure which opens and closes at a preset airspeed and is used to record flight time.

Alternate Static Source

A static source, usually located inside the cockpit, which is used if the main static source becomes blocked. There is usually a correction table for reading the altimeter when the alternate static source is selected.

Alternating Current (AC)

Electric current which is generated in a cyclic movement (pulse) of electrons.

Alternator

Produces electrical power (alternating current) for the aircraft and recharges the battery once the engine is running. Ignition is provided by magnetos independent of the alternator. Battery power is required for engine start and to stimulate the alternator current (exciter coil).

Ammeter

Measures current flow (in amperes – amps).

Aspect Ratio

The ratio of span to average chord of an aerofoil or propeller. More accurately, span squared over wing area for shaped planforms.

Aviation Gasoline (AVGAS)

Fuel for four-stroke piston engines. AVGAS is graded according to octane rating: 100-130 – coloured green and 100 LL (low lead) – coloured blue. 80-87 was a very low rated fuel for low compression engines which is no longer available. Some engines can accept motor vehicle gasoline (MOGAS).

Aviation Turbine Fuel (AVTUR)

The fuel for jet (turbine) powered aircraft (AVTUR) – a form of kerosene. The US designation is JP (Jet Propellant), JP4 or JP5.

Before Top Dead Centre (BTDC)

The angle of the crankshaft before the piston has reached TDC – measured in degrees of crankshaft rotation, e.g. 12 degrees BTDC.

Review 11: Environmental Control

1. External air inlets.
2. By passing hot air over the exhaust system.
3. Selected by the pilot.
4. Carbon monoxide poisoning.
5. Oxygen.
6. Near sea level.
7. Pressurisation systems.
8. Hypoxia, oxygen.
9. Incompatible, spontaneous combustion (fire).

Review 12: Fire Protection Systems

1. False.
2. The insulated bulkhead behind the engine.
3. Continuous-loop and unit-type detectors.
4. Minimise.
5. Photoelectric cells.
6. Either.
7. Must not.
8. Dry powder.
9. Always.
10. An immediate landing.

Review 13: Pressure Instruments

1. Artificial, real.
2. 2°C per 1,000 feet.
3. False (this is a helpful constant used in the lower atmosphere only).
4. True.
5. True.
6. Static and/or dynamic pressure.
7. Static vent.
8. Total pressure.
9. Could.
10. Dynamic.
11. Pitot, static.
12. Static.
13. The airspeed indicator only.
14. No.
15. No.
16. No.
17. Airspeed indicator, altimeter, VSI.
18. No.
19. The same.
20. Yellow or amber.
21. Green.
22. White.
23. Low, white.

24. Low, green.
25. Maximum normal operating, high, green.
26. Will not.
27. Will.
28. 30 feet.
29. Mean sea level.
30. 250 feet.
31. 1,013.2 hPa.
32. Pressure altitude.
33. Area QNH.
34. While on the ground, set aerodrome elevation on the altimeter and read the approximate QNH from the subscale.
35. Lower than.
36. Higher than.
37. Density.
38. True.
39. Pressure.
40. Zero, indicate the altitude at which it became blocked.
41. Underread.
42. Zero, indicate that altitude at which it became blocked.
43. Overread.
44. Underread.
45. Overreading is more dangerous.
46. Alternate static.
47. Pitot heat.
48. Lag.
49. No. Yes, (if the actual density was less than ISA at MSL).

Review 14: Gyroscopic Instruments

1. Rigidity.
2. Precession.
3. Air (vacuum pressure), electricity.
4. Engine, 5 in. Hg (inches of mercury).
5. Horizontal.
6. Must.
7. Must, latitude.
8. Vertical, gravity sensors.
9. Turn indicator.
10. Turn (yaw-rotation about the aircraft vertical axis).
11. Turn and roll.
12. Does not give pitch information.
13. 3° per second, 2 minutes, 120 seconds.

14. 30 seconds.
15. AI, HI, TC (but if the HI is vacuum powered the TC or TI will be electric).
16. True.
17. Horizontal transverse axis.
18. Gravity.
19. Guard against the simultaneous loss of both 'attitude' gyroscopes.
20. The attitude indicator.
21. The attitude indicator.
22. The turn coordinator or turn indicator.
23. Heading indicator. Magnetic compass.
24. Precession.
25. Rigidity

Review 15: Compass Instruments

1. True.
2. Magnetic.
3. Differ from.
4. Magnetic variation.
5. Magnetic.
6. 10° east variation.
7. 11° east isogonal.
8. Isogonals, agonic line.
9. May.
10. Heading.
11. Different.
12. The same.
13. Nearer.
14. Away from.
15. Pivot point.
16. South.
17. Leads. Overshoot (Northerly heading).
18. Lags. Undershoot (Southerly heading).
19. Overshoot north, undershoot south.
20. Deviation card, compass swing.
21. Equator.
22. Stable indication, north-seeking.
23. True.
24. Special sensor coils called the flux valve (or flux gate).
25. AC.
26. AC, static inverter.
27. Magnetic, automatically, magnetic.
28. Synchronisation, annunciator.
29. Slave, flux valve, free.
30. RMI, HSI.

Review 16: Automatic Flight

1. Relieve the pilots workload.
2. Attitude.
3. Wing leveller, roll axis.
4. Stabilisation, inner loop.
5. Control, outer loop.
6. Coupling.
7. Heading hold (or mode).
8. Two.
9. Two.
10. Will.

Review 17: Introduction to RNAV

1. RNAV.
2. Waypoints.
3. ±2 nm.
4. 24, 12, 20,200 km.
5. 4.
6. Availability and continuity of service.
7. 12.5, track, and 95%.
8. Clear/acquisition (C/A), standard positioning service (SPS).
9. Selective availability (S/A).
10. The receiver measuring the period between the time of transmission and the time of reception of the satellite signal.
11. Barometric aiding.
12. Navigation with RAIM, navigation (two and three dimensional) without RAIM, and loss of navigation or DR.
13. By data received from the satellites.
14. By appropriate software modelling in the receiver.
15. ATC must be advised.
16. The relevant and current navigation chart.
17. It remains current for the duration of the flight.
18. Situational awareness.
19. An oblate spheroid.
20. WGS 84.
21. It is a two-way route.
22. True; however, area LSALTs are shown.
23. RNAV system keeps the aircraft within the tracking tolerances for the aids concerned.