

# SAFETY CHECK Test your aviation knowledge

## VFR OPERATIONS

### 1. "Flight Following" means:

- (a) Provision of an ongoing radar information service (RIS).
- (b) Provision of a radar "snapshot" of present position and significant traffic.
- (c) Search and rescue (SAR) based on position reporting.
- (d) Radar vectoring.

### 2. Where VMC does not exist, ATC may issue a special VFR clearance:

- (a) Only on request by the pilot.
- (b) When conditions are acceptable to ATC whether or not the pilot has requested it.
- (c) If visibility is greater than 1,500 m.
- (d) If visibility is greater than 2,000 m.

### 3. The maximum duration and preferred timing of a test transmission from an ELT is:

- (a) 3 seconds and testing is preferred in the final 5 minutes of each hour.
- (b) 5 seconds and testing is preferred in the first 5 minutes of each hour.
- (c) 3 seconds and testing is preferred in the first 5 minutes of each hour.
- (d) 5 seconds and testing is preferred in the last 5 minutes of each hour.

### 4. An aerodrome weather report for a particular location reads: METAR YMABC 040600Z AUTO 20013KT 9999NDV // NCD 344/09 Q1023 RMK RF00.0/000.0. The

### term NDV indicates that:

- (a) There is no significant variation in the visibility when measured in 4 directions based on the main runway alignment.
- (b) There is no significant variation in visibility in any direction and the reading is taken automatically.
- (c) The visibility is measured automatically and there is no directional variation.
- (d) The visibility is measured automatically but only in one direction.

### 5. In the weather report given in question 5, the term NCD means that:

- (a) There has been no cloud detected anywhere in the vicinity of the airport.
- (b) There has been no cloud detected in the direction of the automatic sensor alignment, but significant cloud may be present in other directions.
- (c) Negligible cloud variations are anticipated throughout the forecast period.
- (d) Negligible cloud variations are measurable in the vicinity of the airport.

### 6. For VFR aircraft in class E airspace the following is true:

- (a) Continuous two-way communications is not required and separation from other aircraft is provided.
- (b) Continuous two-way communications is not required and

separation from other aircraft is not provided.

- (c) Continuous two-way communications is required and separation from other aircraft is provided.

- (d) Continuous two-way communications is required and separation from other aircraft is not provided.

### 7. In a NAIPS SARTIME flight notification an endurance of 3 hours and 36 minutes should be entered as:

- (a) 0336.
- (b) 216.
- (c) 3.6.
- (d) 336.



YMML/MEL  
MELBOURNE INTL

ATIS	
114.1	132.7
LOC IMS 109.7	Fin Ap 161

MISSED APCH: Track 1  
Alt Set: hPa Rwy  
1. DME REQUIRED (LOC or  
procedure off STAR prior  
ML VOR.

BOL NDB HOLDING

37-30  
2102'

1643' 160° 10'  
1591'

144-40

LOC (GS out)	ML DME ALTITUDE 4000'	11.5
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R-352 NDB  
D12.0 ML

3000'  
from  
STAR

Gnd speed-Kts	7
GS	3.00" 3

MAP at MM

STRAIGHT  
ILS  
DA(H) 640' (20

FULL	HIREL out
------	-----------

A	
B	
C	0.8 km 1.2 km
D	

NS OPS 4

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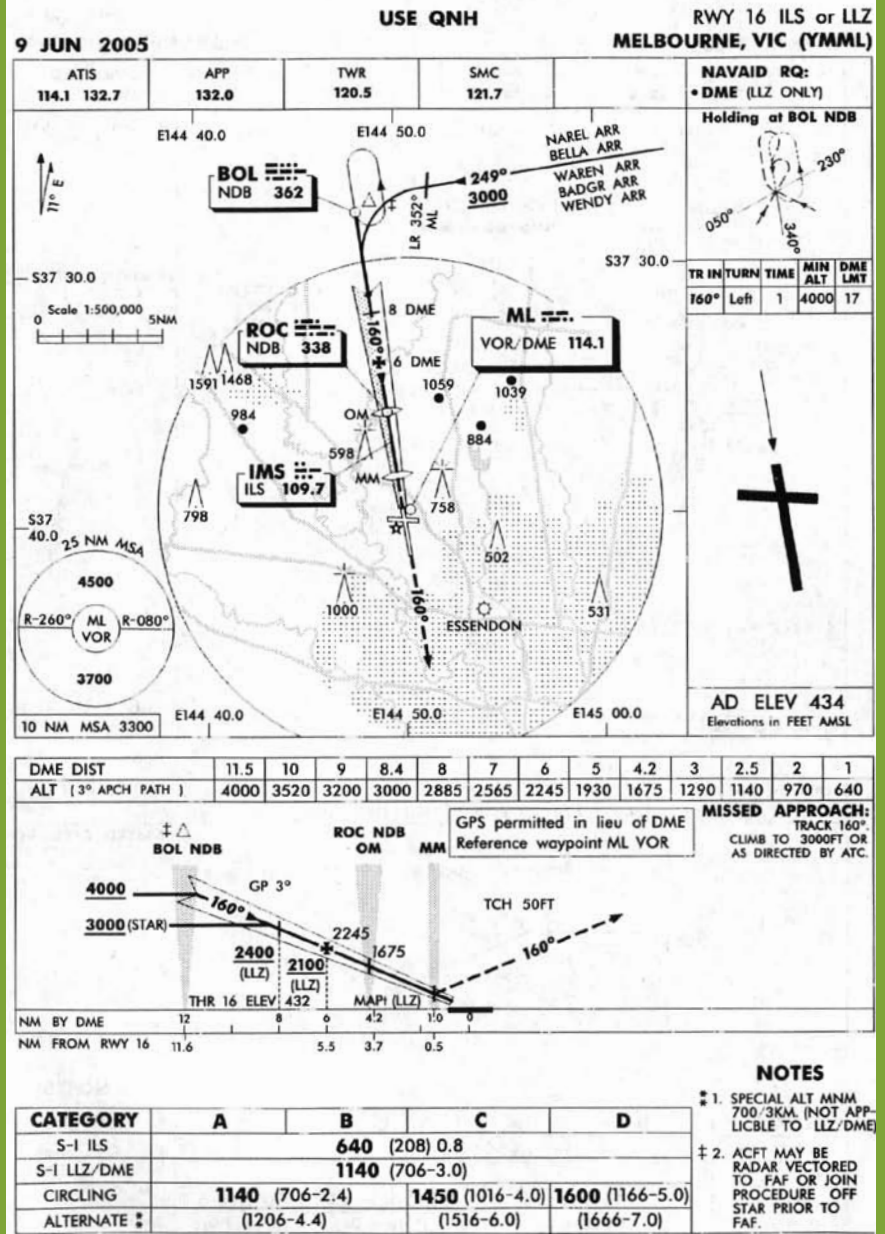
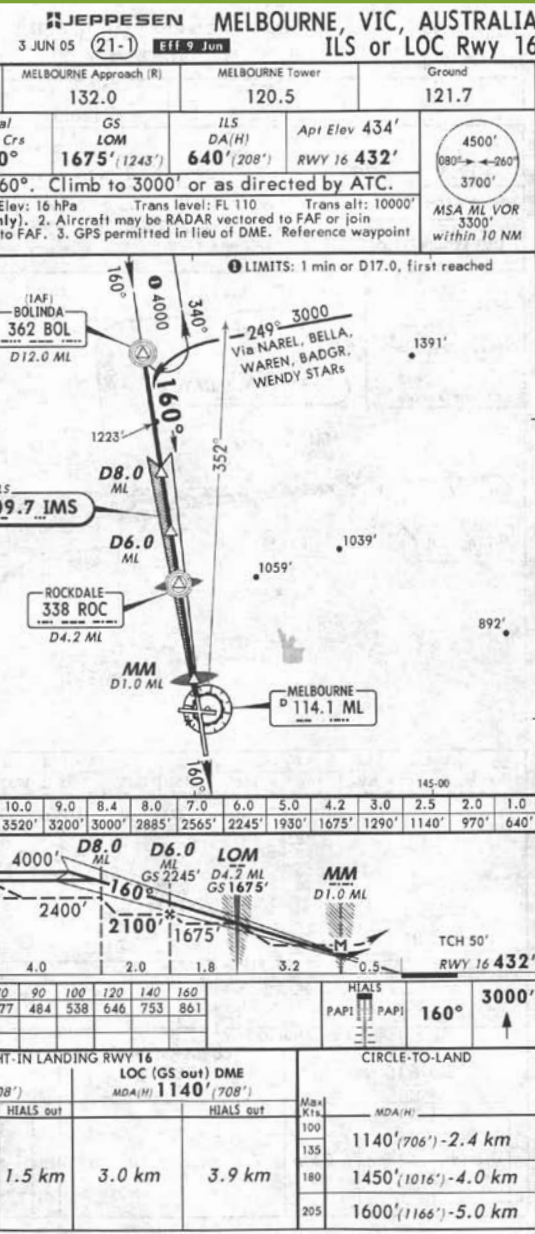
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IFR OPERATIONS

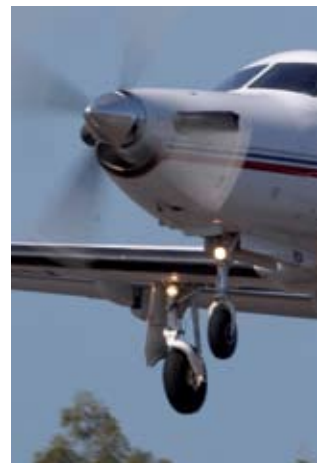


Questions 1 to 8 refer to the Melbourne runway 16 ILS Approach plates shown, both dated June 9, 2005. Describe how Airservices Australia and Jeppesen present the information on their respective approach plates.

- How can you determine whether GPS can be used in lieu of DME?
- Where is the timing/DME limit of the holding pattern

- at Bolinda shown?
- How is the initial approach fix (IAF) portrayed?
- How are localizer minima – both MDA and visibility – portrayed?
- How is full ILS visibility portrayed?
- Where are the alternate minima information found?
- How is MSA detail shown?
- How is altitude restriction detail shown?

- Questions 9 and 10 do not relate to the approach plates shown.
- How can the MDA and ALTN MNM be modified knowing the actual QNH?
  - With reference to the GPS/RNAV approach plates, where is the altitude information contained for descent, if any, between the IAF and the IF?





CASA library

1. **When comparing two spark plugs approved for the same piston engine, the plug with the longer distance between the tip of the internal insulator and the metal body of the plug is:**
  - (a) The hotter plug and more able to tolerate lead or carbon deposits.
  - (b) The hotter plug and less able to tolerate lead or carbon deposits.
  - (c) The colder plug and more able to tolerate lead or carbon deposits.
  - (d) The colder plug and less able to tolerate lead or carbon deposits.
2. **A fuel octane rating of 100/130 means that the fuel has an octane rating of:**
  - (a) 100 at rich mixture and 130 at lean.
  - (b) 100 at lean mixture and 130 at rich.
  - (c) 100 and a vapour pressure of 130.
  - (d) 130 and a vapour pressure of 100.
3. **A two stage centrifugal electric fuel pump on a piston engine aircraft is usually switched for starting to the:**
  - (a) High-speed position.
  - (b) Low-speed position.
  - (c) Off position.
  - (d) High-speed position if flooding occurs.
4. **Microorganisms in turbine fuel:**
  - (a) Are seldom found because the fuel is too toxic.
  - (b) Are frequently found but do not have any significance.
  - (c) Can cause the formation of impurities – with serious safety implications.
5. **Conduction is started in a silicon controlled rectifier by a:**
  - (a) Positive potential applied slowly to the anode.
  - (b) Negative potential supplied slowly to the cathode.
  - (c) Negative pulse to the gate.
  - (d) Positive pulse to the gate.
6. **As distinct from a turn and slip indicator, a turn coordinator responds to:**
  - (a) The rate of bank and the rate of yaw.
  - (b) The angle of bank and the rate of yaw.
  - (c) Movement about the lateral axis.
  - (d) The rate of movement about the lateral axis.
7. **One horse power is equivalent to:**
  - (a) 746 amps.
  - (b) 415 watts.
  - (c) 746 watts.
  - (d) 415 kilowatt-hours.
8. **A clipping or snubber diode connected across a coil of a DC contactor or relay is connected with the:**
  - (a) anode to the positive side of the coil.
  - (b) anode to the negative side of the coil.
  - (c) cathode to the negative side of the coil.
  - (d) gate to the positive side of the coil.
9. **The amount of acetylene gas stored in a cylinder is determined by:**
  - (a) the pressure on the downstream side of the regulator.
  - (b) the pressure on the upstream side of the regulator.
  - (c) the volume of the cylinder.
  - (d) by weighing the cylinder.

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## WHAT'S THE MESSAGE?



Last issue's winning caption:  
**"I don't care if you fit rocket engines...this hanger will never fly!"**  
 Col Bergman, Aroona QLD



Write an amusing caption of up to 25 words for a chance to win \$100.  
 Send your entry to: Flight Safety Australia, GPO Box 2005, Canberra ACT 2601  
 or email to: fsa@casa.gov.au by 15 November 2005.

## QUIZ ANSWERS

## VFR

- (a) The RIS is ongoing GEN 2.2–8 and GEN 3.3 2.16.
- (a) A special VFR clearance must be requested by the pilot ENR 1.2 1.2.1.
- (b) VFR Flight Guide page 327. GEN 3.6 para 8.4.
- (d) Significant variations may occur in other directions to the alignment of the single automatic sensor AIP GEN 3.5 12.13.1 and 12.13.2.
- (b) The cloud sensor only looks in one direction; significant variation in cloud may occur in other directions. AIP GEN 3.5 12.13.
- (d) ENR 1.4–9 and ENR 1.4 2.1.4.
- (a) Only hmmm format is acceptable; Airservices website. AIP ENR 1.10, appendix 1. item 19.

## IFR OPS

- Airservices:* Contained in a "data box" alongside the profile diagram.  
*Jeppesen:* A note is given above the "plan" diagram.
- Airservices:* Contained within the holding pattern data box below the sector entry diagram.  
*Jeppesen:* The number 1 inside the holding pattern diagram on the plan view.
- Airservices:* The symbol Δ on both plan and profile views.

- Jeppesen:* The abbreviation (IAF) on the plan view.
- Airservices:* Data box at the bottom of the plate, using the abbreviation "LLZ". Note: The visibility increase (900m usually) must be known from AIP ENR 1.5–31 para 5.4.  
*Jeppesen:* Data box at the bottom of the plate, using the abbreviation "LOC (GS out)" and the 900 m increase is shown under "HIALS out".
  - Airservices:* Data box at the bottom of the plate, giving 0.8 km (CAT 1) or 1.2 km if not CAT 1 (usually). Note: The visibility increase to 1.5 km (generally) without HIAL must be known from AIP ENR 1.5–33 Para 8.1.  
*Jeppesen:* Data box at the bottom of the plate, using the headings "Full", "HIRL OUT" and "HIALS OUT".
  - Airservices:* Contained in the data box at the bottom of the plate, using ★★ to portray SPECIAL "ALTN MNM".  
*Jeppesen:* Contained on a separate page, headed "Airport" using the term "For filing as alternate".
  - Airservices:* The 25 nm MSA circle is shown alongside the plan view with a small data box below showing the 10 nm MSA (if applicable).  
*Jeppesen:* The 25 nm circle is shown at the top right of the plate with details about

- the 10 nm MSA below this (if applicable).
- Airservices:* Shown on both plan and profile diagrams – for example 3000 meaning "not below 3000".  
*Jeppesen:* Shown by presenting the altitude on plan and profile diagrams at the appropriate portion of the approach.
  - Airservices:* The minima boxes are "shaded" meaning that if the actual QNH is known then subtract 100 ft from the minima.  
*Jeppesen:* Two columns are used in the minima boxes, headed "Forecast QNH" and "Actual QNH".
  - Airservices:* The profile diagram starts at each of the IAFs with the corresponding altitude given between IAF and IF.  
*Jeppesen:* The profile diagram starts at the IF (an important difference) with altitude given on PLAN diagram and alongside IF on profile diagram.

## MAINTENANCE

- (a) The longer heat conducting path from the firing area to the gasket area means that the insulator runs hotter.
- (b) The lower figure is the lean octane rating.
- (b) The low-speed position is recommended in the POH.
- (c) Byproducts include sludge, emulsified fuel and corrosive compounds.
- (d) Conduction is initiated by a positive pulse to the gate; some devices will also conduct if the anode-to-cathode voltage is applied quickly.
- (a) The turn and slip indicator responds to the rate of yaw only, but the gybal axis of the turn coordinator is inclined to the aircraft longitudinal axis and therefore the instrument responds also to the rate of roll.
- (c) Under SI units all power, including electrical power is expressed in watts.
- (b) The diode conducts on the reverse EMF when the coil has been de-energised.
- (d) The acetylene is dissolved in acetone within the cylinder; pressure varies with temperature and is not a reliable indicator of gas quantity.