



Australian Government

AVIH4001 Navigate aircraft under visual flight rules

Release: 1

AVIH4001 Navigate aircraft under visual flight rules

Modification History

Release 1. This is the first release of this unit of competency in the AVI Aviation Training Package.

Application

This unit involves the skills and knowledge required to navigate an aircraft under visual flight rules (VFR), in compliance with relevant regulatory requirements of the Civil Aviation Safety Authority (CASA) and national operating standards.

It includes preparing navigation documents and flight plan, complying with airspace procedures, and conducting departure procedures. It also includes navigating aircraft en route, navigating at low level and in reduced visibility, and performing lost procedures. It also includes performing diversion procedures, using instrument navigation systems and executing arrival procedures.

This unit addresses aviation technical skill requirements (physical, mental and task-management abilities) related to route planning and navigation duties of flight crew, and contributes to safe and effective performance in complex aviation operational environments.

Operations are conducted as part of recreational, commercial and military aircraft activities across a variety of operational contexts within the Australian aviation industry.

Work is performed independently or under limited supervision within a single-pilot or multi-crew environment.

Licensing, legislative, regulatory or certification requirements are applicable to this unit.

Use for Defence Aviation is to be in accordance with relevant Defence Orders, Instructions, Publications and Regulations.

Pre-requisite Unit

Not applicable.

Competency Field

H – Route Planning and Navigation

Unit Sector

Not applicable.

Elements and Performance Criteria

ELEMENTS

Elements describe the essential outcomes.

PERFORMANCE CRITERIA

Performance criteria describe the performance needed to demonstrate achievement of the element.

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|---|--|
| 1 Prepare navigation documents and flight plan | <p>1.1 Suitable navigation charts for intended flight are selected and prepared</p> <p>1.2 Applicable information is obtained, analysed and applied to produce a flight plan that details tracks, distances, times and fuel requirements to reach a destination</p> <p>1.3 Pre-flight planning is used to minimise in-flight navigational work load</p> <p>1.4 Applicable VFR are applied to current and forecast operating conditions to determine whether planned flight can proceed</p> <p>1.5 Hazards to navigation are marked on charts as required</p> |
| 2 Comply with airspace procedures | <p>2.1 Applicable flight airspace restrictions and dimensions are identified</p> <p>2.2 Air traffic clearances are obtained and compliance with them is maintained</p> <p>2.3 Traffic, terrain and airspace separation criteria is maintained in accordance with VFR</p> |
| 3 Conduct departure procedures | <p>3.1 Pre-flight planning and cockpit organisation is conducted to ensure charts, documentation and navigational equipment are accessible from the control seat</p> <p>3.2 Departure administration and communication is conducted</p> <p>3.3 Track is intercepted within five nautical miles of airfield and departure time is recorded or alternative procedures are applied as required</p> <p>3.4 Orientation is always maintained</p> <p>3.5 Priority is given to controlling aircraft before conducting navigation administration or communication</p> <p>3.6 Lookout is maintained using a systematic scan technique at a rate determined by traffic density, visibility and terrain</p> <p>3.7 Local and published noise abatement requirements and</p> |

curfews are observed

4 Navigate aircraft en route

- 4.1 Planned route is maintained in accordance with VFR
- 4.2 In-flight documentation and communication is completed
- 4.3 Waypoint and/or destination estimated time of arrival (ETA) are checked and revised as required
- 4.4 Search and rescue times (SARTIME) awareness is maintained and revised based on destination ETA calculations
- 4.5 Fuel consumption is monitored and reserves are revised
- 4.6 Pre-descent or navigation turning point checks are executed
- 4.7 Appropriate techniques to obtain a positive navigation fix at suitable intervals are used
- 4.8 Route, en route terrain, en route and destination weather awareness is maintained, and appropriate courses of action are implemented in accordance with changing weather conditions
- 4.9 Lookout is maintained using a systematic scan technique at a rate determined by traffic density, visibility and terrain
- 4.10 Aircraft is configured as required for turbulent, holding and maximum aircraft range, based on environmental and operational conditions
- 4.11 Aircraft systems, fuel and engine warnings, cautions and indicators are monitored to ensure aircraft is operated to achieve flight plan objectives

5 Navigate at low level and in reduced visibility

- 5.1 Compliance with VFR is maintained during navigation at low level or in reduced visibility
- 5.2 Pre-descent and/or navigation turning point checks are executed in accordance with regulatory requirements
- 5.3 Planned route is maintained in accordance with regulatory requirements and procedures
- 5.4 In-flight documentation is completed
- 5.5 Waypoint and/or destination ETA are checked and revised as required

- 5.6 Aircraft is operated and configured to maintain minimum height above ground level (AGL) and terrain separation and remaining within visual meteorological conditions (VMC)
- 5.7 Route, en route terrain, en route and destination weather awareness is maintained, and appropriate courses of action are implemented in accordance with changing weather conditions
- 5.8 Lookout is maintained using a systematic scan technique at a rate determined by traffic density, visibility and terrain
- 5.9 Hazards and threats to low flying navigation are identified and risk controls are implemented
- 5.10 Effects of wind velocity, false horizons, rising ground, adverse environmental conditions, and mountainous terrain are managed, and contingency actions are planned as required
- 5.11 Aircraft is configured as required for reduced visibility and low cloud base environmental and operational conditions
- 5.12 Situational awareness is maintained at all times
- 6 Perform lost procedure**
 - 6.1 Positional uncertainty is identified and recognised
 - 6.2 Position is fixed and new track to destination attainable within limits of fuel and daylight is determined using recognised methods
 - 6.3 Track to destination is re-established or replanned with consideration of fuel usage and reserves
 - 6.4 Waypoint and/or destination ETA are checked and revised as required
 - 6.5 Radio, navigation aids, transponder and air traffic control (ATC) services are used for assistance
 - 6.6 A timely precautionary search and landing is planned for possible circumstances of being lost or having no fuel or no light
- 7 Perform diversion procedure**
 - 7.1 Requirement to perform diversion procedure is identified and a timely decision is made
 - 7.2 Alternate acceptable aerodrome/destination is identified

- 7.3 New route is determined and established
- 7.4 Waypoint and/or destination ETA are checked and revised as required
- 7.5 Flight plan is revised considering operational information, weather, terrain, airspace and fuel available
- 7.6 Air traffic service is advised of action where possible and compliance with airspace procedures is maintained
- 7.7 SARTIME awareness is maintained and revised based on diversion destination ETA calculations and is cancelled on arrival
- 8 Use instrument navigation systems**
 - 8.1 Navigation systems are initialised and system validity checks are conducted as required
 - 8.2 Receiver autonomous integrity monitoring (RAIM) checks are conducted as required
 - 8.3 Navigation aids and systems are utilised to confirm position, track and navigation information
 - 8.4 Flight plan is selected, loaded, checked and activated in aircraft navigation system
 - 8.5 Navigation systems are operated in accordance with operating instructions and procedures
 - 8.6 ATC radar is used for position information and tracking assistance as required
 - 8.7 Waypoints and position fixes are confirmed using instrument navigation systems
 - 8.8 Integrity of navigation aid/systems information is monitored and maintained
- 9 Execute arrival procedures**
 - 9.1 Arrival aerodrome, meteorological conditions and local traffic information is obtained and applied to arrival procedure plan
 - 9.2 Radio communications are established and maintained
 - 9.3 Aerodrome landing direction and arrival procedure suitability are determined
 - 9.4 Descent point is calculated

- 9.5 Arrival and circuit procedures are conducted at destination aerodrome
- 9.6 Lookout is maintained during arrival procedure using a systematic scan technique at a rate determined by traffic density, visibility and terrain
- 9.7 Aerodrome markings, lights, signals and indicators are interpreted, applied and adhered to
- 9.8 Local and published noise abatement requirements and curfews are observed
- 9.9 SARTIME awareness is maintained and revised based on diversion destination ETA calculations and cancelled upon arrival

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Range of Conditions

Range is restricted to essential operating conditions and any other variables essential to the work environment.

Unit Mapping Information

This unit replaces and is equivalent to AVIH4001B Navigate aircraft – VFR.

Links

Companion Volume implementation guides are found in VETNet -
<https://vetnet.education.gov.au/Pages/TrainingDocs.aspx?q=4725260a-0af3-4daf-912b-ef1c2f3e5816>