



Australian Government

AVIY0001 Operate aircraft using aircraft flight instruments

Release: 1

AVIY0001 Operate aircraft using aircraft flight instruments

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 operate aircraft using aircraft flight instruments, in compliance with relevant regulatory requirements of the Civil Aviation Safety Authority (CASA) and national operating standards.

It includes establishing serviceability of flight instruments and instrument power sources, operating an aircraft using full instrument procedures and recovering from unusual attitudes using full instrument procedures. It also includes operating an aircraft using limited instrument procedures, recovering from unusual attitudes using limited instrument procedures, re-establishing visual flight, and performing steep turns.

This unit addresses aviation technical skill requirements (physical, mental and task-management abilities) related to aircraft operational duties that complement flight crew non-technical skills, and contributes to safe and effective performance in complex aviation operational environments.

Operations are conducted as part of 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

Y – Aircraft Operation and Traffic Management

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.

1 Establish serviceability of flight instruments and instrument power sources	1.1	Serviceability of flight instrument, pitot/static system and instrument power sources is determined before flight
	1.2	Functional checks of flight and navigational instruments are performed before departure
2 Operate aircraft using full instrument procedures	2.1	Flight instrument and instrument power sources are monitored and pilot cautions, warnings and indications are reacted to in accordance with full instrument procedures
	2.2	Power and attitude are set and maintained by reference to full instrument panel to achieve straight and level performance during normal cruise
	2.3	Power and attitude are set and maintained by reference to full instrument panel to achieve nominated climb performance
	2.4	Power and attitude are set and maintained by reference to full instrument panel to achieve nominated descent performance
	2.5	Power, attitude and bank during climb, descent and straight and level flight are set and maintained by reference to full instrument panel to achieve rate one turns onto a nominated heading
	2.6	Aircraft is balanced and trimmed to maintain nominated aircraft altitude, heading, speed and/or climb/descent performance within flight tolerances
	2.7	Aircraft is levelled at nominated altitude, from climb or descent during straight or turning flight
3 Recover from unusual attitudes using full instrument procedures	3.1	Unusual attitudes and upset situations are recognised and identified
	3.2	Controlled flight is resumed by reference to flight instruments using a full instrument panel
	3.3	Straight and level attitude is achieved without excessive oscillations at the horizon
	3.4	Aircraft is recovered to above lowest safe altitude (LSALT)

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| 4 Operate aircraft using limited instrument procedures | <p>4.1 Flight instrument and instrument power sources are monitored and pilot cautions, warnings and indications are reacted to in accordance with limited instrument procedures</p> <p>4.2 Aircraft is transitioned from full instrument operating procedures to limited instrument operating procedures while maintaining safe flight profiles</p> <p>4.3 Power and attitude are set and maintained by reference to limited instrument panel to achieve straight and level performance during normal cruise</p> <p>4.4 Power and attitude are set and maintained by reference to limited instrument panel to achieve nominated climb performance</p> <p>4.5 Power and attitude are set and maintained by reference to limited instrument panel to achieve nominated descent performance</p> <p>4.6 Power, attitude and bank during climb, descent, straight and level flight are set and maintained by reference to limited instrument panel to achieve rate one turns onto a nominated heading</p> <p>4.7 Aircraft is balanced and trimmed to maintain nominated aircraft altitude, heading, speed and/or climb/descent performance within flight tolerances</p> <p>4.8 Aircraft is levelled at nominated altitude, from climb or descent during straight or turning flight</p> |
| 5 Recover from unusual attitudes using limited instrument procedures | <p>5.1 Unusual attitudes and upset situations are recognised and identified</p> <p>5.2 Controlled flight is resumed by reference to flight instruments using a limited instrument panel</p> <p>5.3 Straight and level attitude is achieved without excessive oscillations at the horizon</p> <p>5.4 Aircraft is recovered to above LSALT</p> |
| 6 Re-establish visual flight | <p>6.1 Aircraft is transitioned from visual flight conditions to instrument flight conditions while aircraft control is maintained</p> <p>6.2 Aircraft is manoeuvred to re-establish visual flight</p> |

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| | 6.3 | Plan is implemented to ensure flight continues within visual meteorological conditions (VMC) |
| 7 Perform steep turns | 7.1 | Power, attitude and bank are set to maintain level flight by reference to full instrument panel that achieves a steep turn |
| | 7.2 | Nominated angle of bank is maintained |
| | 7.3 | Aircraft turn is exited onto nominated heading |
| | 7.4 | Aircraft is balanced and trimmed to maintain nominated aircraft altitude, heading, speed and/or climb/descent performance within flight tolerances |

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.

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| Aircraft must include one or more of the following: | <ul style="list-style-type: none">• fixed wing• helicopter• other commercial or military aircraft |
| Unusual attitudes and upset situations must include: | <ul style="list-style-type: none">• high and low-nose attitudes• unbalanced flight• various power settings• various aircraft configurations• varying angles of bank |

Unit Mapping Information

This unit replaces but is not equivalent to:

- AVIY5020A Conduct full instrument panel manoeuvres
- AVIY5021A Conduct limited instrument panel manoeuvres.

Links

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=4725260a-0af3-4daf-912b-ef1c2f3e5816>

Assessment Requirements for AVIY0001 Operate aircraft using aircraft flight instruments

Modification History

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Performance Evidence

Evidence required to demonstrate competence in this unit must be relevant to and satisfy all of the requirements of the elements, performance criteria and range of conditions on at least one occasion and include:

- adapting to differences in equipment and operating environment in accordance with standard operating procedures
- applying precautions and required action to minimise, control or eliminate identified hazards
- applying relevant legislation and workplace procedures
- communicating effectively with others
- compensating for secondary effects of controls
- completing relevant documentation
- controlling aircraft by reference to artificial horizon and gyro compass
- identifying and correctly using relevant equipment
- implementing contingency plans
- implementing work health and safety (WHS)/occupational health and safety (OHS) procedures and relevant regulations
- interpreting and following operational instructions and prioritising work
- maintaining compliance with regulatory requirements
- maintaining orientation under simulated instrument flight conditions
- modifying activities dependent on workplace contingencies, situations and environments
- monitoring and anticipating operational problems and hazards and taking appropriate action
- monitoring work activities in terms of planned schedule
- operating electronic communications equipment to required protocol
- performing manoeuvres and procedures solely by use of instrument panel:
 - full instrument panel procedures
 - limited instrument panel procedures
- reading, interpreting and following relevant regulations, instructions, procedures, information and signs
- reporting or rectifying identified problems promptly by referring to instrument panel
- selecting and using required personal protective equipment conforming to industry and WHS/OHS standards
- setting local or area barometric pressure adjusted for sea level (QNH) at appropriate stages of flight

- using instrument scan techniques applicable to flight condition
- working collaboratively with others
- working systematically with required attention to detail without injury to self or others, or damage to goods or equipment.

Knowledge Evidence

Evidence required to demonstrate competence in this unit must be relevant to and satisfy all of the requirements of the elements, performance criteria and range of conditions and include knowledge of:

- anti-icing and de-icing controls and switches fitted to aircraft type
- attitude and power requirements to achieve specified flight profiles
- CASR Part 61 Manual of Standards Schedule 3 Aeronautical Knowledge relevant to instrument flight operations
- flight instrument performance tolerances for instrument meteorological condition (IMC) flights
- functions and effects of all aircraft controls
- hazards that exist when controlling an aircraft by reference to instrument panel and related risk control processes
- human factors applicable to instrument panel operating procedures:
 - full instrument panel
 - limited instrument panel
- in a Defence context, relevant Defence Orders and Instructions
- instrument panel failure cautions, warning and indication systems, and appropriate response techniques
- instrument panel scan techniques
- meteorological conditions impacting instrument flight procedures
- operation of flight instruments and pitot/static system
- operation, function and limitations of flight instruments and instrument power sources
- performance instrument indications and power requirements to achieve specified flight profiles
- pitot, airframe and carburettor icing and prevention/removal procedures
- principles of aerodynamics
- problems that may occur when controlling an aircraft by reference to full instrument panel and action that should be taken in each case
- relevant sections of Civil Aviation Safety Regulations and Civil Aviation Orders
- relevant WHS/OHS and environmental procedures and regulations
- safety risks associated with application of large or rapid control inputs in more than one axis simultaneously
- scan techniques appropriate to fitted flight instruments and phase of flight:

- with attitude and stabilised heading indicators
- without attitude and stabilised heading indicators.

Assessment Conditions

As a minimum, assessors must satisfy applicable regulatory requirements, which include requirements in the *Standards for Registered Training Organisations* current at the time of assessment.

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Assessment processes and techniques must be appropriate to the language, literacy and numeracy requirements of the work being performed and the needs of the candidate.

Assessment must occur in workplace operational situations. Where this is not appropriate, assessment must occur in simulated workplace operational situations that reflect workplace conditions.

Performance must be assessed in one or more of the following:

- single engine aircraft
- multi engine aircraft
- synthetic training device approved by appropriate authority.

Resources for assessment must include access to:

- a range of relevant exercises, case studies and/or simulations
- acceptable means of simulation assessment
- applicable documentation including workplace procedures, regulations, codes of practice and operation manuals
- relevant materials, tools, equipment and personal protective equipment currently used in industry.

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