



Australian Government

AVIY5036 Conduct a 3D instrument landing system instrument approach

Release: 1

AVIY5036 Conduct a 3D instrument landing system instrument approach

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 conduct a 3D instrument approach using instrument landing system (ILS) procedures, in compliance with relevant regulatory requirements of the Civil Aviation Safety Authority and national operating standards.

It includes selecting and preparing for approach, and monitoring aid signal integrity. It also includes conducting initial approach, holding pattern, approach and missed approach procedures.

This unit addresses aviation technical skill requirements (physical, mental and task-management abilities) related to aircraft operational 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

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 Select and prepare for the approach

- 1.1 Current instrument approach and landing (IAL) chart for the ILS approach to be flown is selected
- 1.2 Navigation system validity and receiver autonomous integrity monitoring (RAIM)/space based augmentation system (SBAS) checks are conducted as required
- 1.3 Instrument approach and missed approach procedure is planned and self-briefed or briefed to flight crew as required
- 1.4 Direct entry to the approach is reviewed, briefed to flight crew and evaluated
- 1.5 Entry via holding pattern is reviewed, briefed to flight crew and evaluated
- 1.6 Minimum altitude, lowest safe altitude (LSALT) or minimum safe altitude (MSA) prior to approach entry, is reviewed and briefed to flight crew in relation to tracks, distances, timing and descent limitations
- 1.7 Applicable approach minima for aircraft performance category and runway to be used is selected
- 1.8 Pressure error correction for decision altitude (DA) is selected
- 1.9 Holding or diversion action if visual reference is not established, is reviewed and briefed
- 1.10 Fuel availability and latest divert time is selected as required
- 1.11 Aircraft systems are configured for approach and altimeter is set to appropriate QNH

2 Monitor aid signal integrity

- 2.1 ILS to be used for selected approach is tuned and identified
- 2.2 Warning flags and course deviation indicators (CDI) for localiser (LLZ) and glide slope is monitored throughout the approach to ensure signal integrity
- 2.3 Locator beacons for approach are tuned and identified

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| | 2.4 | Marker beacon/s are tested and monitored for visual and aural indications during approach |
| | 2.5 | Distance measuring equipment (DME) is tuned and identified or global navigation satellite system (GNSS) is configured for ILS approach as required |
| | 2.6 | DME/GNSS is monitored for distance indications during applicable approach |
| 3 Conduct initial approach | 3.1 | Altimeter is set to appropriate QNH |
| | 3.2 | Holding fix is identified and aircraft is manoeuvred to appropriate sector entry position |
| 4 Conduct holding pattern | 4.1 | Holding pattern at or above LSALT or MSA is entered in accordance with specified sector entry |
| | 4.2 | Holding pattern is performed in accordance with instructions in aeronautical information publication (AIP), using the LLZ and any other navigation aids |
| 5 Conduct approach procedure | 5.1 | Aircraft is tracked to initial approach fix using appropriate tracking aids or radar vectors at or above route MSA or LSALT, to intercept the LLZ track |
| | 5.2 | ILS approach is conducted from initial approach fix with tracking by reference to LLZ and descent by reference to glide path |
| | 5.3 | Marker beacons, DME/GNSS or approved alternative fix are used to provide distance indications |
| | 5.4 | Specified altitude check on glide slope is performed |
| | 5.5 | Continued descent on glide slope to the DA is performed in accordance with AIP |
| | 5.6 | Landing runway is identified |
| | 5.7 | Runway or circling approach for a landing is conducted in accordance with AIP after visual reference is established |
| 6 Conduct missed approach procedure | 6.1 | Conditions requiring a missed approach are recognised and missed approach is initiated |
| | 6.2 | Aircraft is manoeuvred to missed approach point (MAPt) |

- 6.3 Missed approach procedure is conducted in accordance with the IAL chart
- 6.4 Obstacle clearance in IMC is maintained

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 AVIY5036A Perform instrument landing system (ILS) instrument approach.

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 AVIY5036 Conduct a 3D instrument landing system instrument approach

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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 and performance criteria 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 aeronautical knowledge
- applying relevant legislation and workplace procedures
- communicating effectively with others
- completing relevant documentation
- determining conditions permitting descent below minima
- determining instrument landing system (ILS) approach procedure applicable minima for aircraft
- 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 prioritise work
- interpreting ILS instrument approach procedure chart
- modifying activities depending 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 systematic scan techniques
- reading, interpreting and following relevant regulations, instructions, procedures, information and signs
- reporting and/or rectifying identified problems promptly, in accordance with regulatory requirements and workplace procedures
- selecting and using required personal protective clothing and equipment conforming to industry and WHS/OHS standards
- setting local or area barometric pressure adjusted for sea level (QNH) at appropriate stages of flight
- 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 and performance criteria and include knowledge of:

- abnormal operations and/or emergency procedures for an ILS approach, including navigation aid failure
- adjustment to baro determined minima for temperature effect
- automation and flight management system (FMS) management for low-visibility operations
- CASR Part 61 Manual of Standards Schedule 3 Aeronautical Knowledge relevant to instrument flight operations
- contaminated runway operations
- emergency procedures
- equipment redundancy during low-visibility operations
- ILS instrument approach procedures and limitations, including the minimum system components required to conduct an approach
- limitations, errors, warnings and messages of a global navigation satellite system (GNSS)
- loss of radio communication during an ILS approach procedure
- low-visibility operations and environmental limitations
- missed approach procedures for an ILS approach
- principles of operation of a GNSS
- procedure for joining the circuit from an ILS approach
- procedures for adjusting controls to optimise equipment operation
- procedures for managing and controlling hazardous situations
- radio procedures for an ILS approach
- relevant sections of national and state or territory regulatory requirements and codes of practice
- relevant WHS/OHS and environmental procedures and regulations
- requirements applicable to pilots and equipment for GNSS operations
- runway markings and lighting
- runway visual range (RVR) versus slant visual range (SVR)
- sector entry join procedures for entering the holding pattern of an ILS approach
- sources of information on differences in equipment and related standard operating and servicing procedures
- steps involved in planning work activities
- temperature effects on altimeter
- tracking tolerance and altitude limitations for flying a published distance measuring

- equipment (DME) arc of an ILS approach procedure
- types of approach lighting systems
- use of and precautions for approach slope 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.

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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