



Australian Government

**AVIY5037 Conduct a 2D distance
measuring equipment global navigation
satellite system instrument approach**

Release: 1

AVIY5037 Conduct a 2D distance measuring equipment global navigation satellite 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 2D instrument approach using distance measuring equipment (DME) or global navigation satellite system (GNSS) procedures, in compliance with relevant regulatory requirements of the Civil Aviation Safety Authority and national operating standards.

It includes selecting and preparing for approach, using appropriate tracking aid and distance information, and monitoring aid signal integrity. It also includes conducting 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 approach

- 1.1 Current instrument approach and landing (IAL) chart for the DME/GNSS approach to be flown is selected
- 1.2 Instrument approach and missed approach procedures are planned
- 1.3 Minimum descent altitude (MDA) is determined
- 1.4 Sector entry to approach and holding pattern is selected, reviewed and briefed to flight crew as appropriate
- 1.5 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 and descent limitations
- 1.6 Applicable approach minima for aircraft performance category and runway to be used, is selected
- 1.7 Holding or diversion action if visual reference is not established, is reviewed and briefed
- 1.8 Fuel availability and latest divert time is selected as required
- 1.9 Altimeter is set to appropriate QNH

2 Use appropriate tracking aid and distance information, and monitor aid signal integrity

- 2.1 Distance measuring equipment (DME) is tuned and identified
- 2.2 Reference way-point (WPT) for GNSS to be used for tracking inbound, is selected
- 2.3 Distance indication is checked
- 2.4 Approach aid is monitored throughout approach to ensure signal integrity
- 2.5 DME or GNSS is used to provide distance indications for descent via the distance/altitude steps of the approach
- 2.6 Availability of receiver autonomous integrity monitoring (RAIM) is ensured before descending below LSALT or MSA

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| 3 Conduct approach procedure | 3.1 Initial approach is conducted not below the specified limiting altitude for the distance/altitude descent steps |
| | 3.2 Arrival procedure is conducted while descending on the specified track or sector in accordance with aeronautical information publication (AIP) requirements |
| | 3.3 Landing runway is identified |
| | 3.4 Runway or circling approach for a landing is conducted after visual reference is established |
| 4 Conduct missed approach procedure | 4.1 Conditions requiring a missed approach are recognised and missed approach is initiated |
| | 4.2 Aircraft is manoeuvred to missed approach point (MAPt) |
| | 4.3 Missed approach procedure is conducted in accordance with the IAL chart |
| | 4.4 Obstacle clearance in instrument meteorological 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 AVIY5037A Perform distance measuring equipment (DME) global positioning system (GPS) arrival.

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 AVIY5037 Conduct a 2D distance measuring equipment global navigation satellite system instrument approach

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 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 distance measuring equipment (DME) or global navigation satellite system (GNSS) arrival 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 a DME or GNSS arrival 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 emergencies during a DME or GNSS arrival including:
 - navigation aid failure
 - loss of GNSS receiver autonomous integrity monitoring (RAIM)
 - GNSS RAIM warning
 - disparity between VOR/NDB track and GNSS track indication
- CASR Part 61 Manual of Standards Schedule 3 Aeronautical Knowledge relevant to instrument flight operations
- cause and magnitude of typical GNSS errors
- conditions and limitations for manoeuvring within a DME or GNSS arrival sector
- conditions required to transition to and operate in the mode of operation for a GNSS/non-precision approach (NPA), and associated course deviation indicator (CDI) sensitivity and RAIM protection provided
- DME or GNSS arrival missed approach
- DME or GNSS arrival procedures and limitations in all classes of airspace
- effect of each type of RAIM prediction on operational requirements
- effects of availability or otherwise of barometric altimeter-aiding on RAIM availability and prediction
- effects of satellite unserviceability on reliability of each type of prediction
- emergency procedures
- factors that adversely affect the conduct of a GNSS/NPA, and suitable pilot procedures to minimise such effects
- GNSS operating procedures for navigation tasks
- GNSS operational and serviceability checks
- GNSS system fundamentals and principles of operations
- GNSS warnings and messages
- human factors limitations associated with using GNSS equipment
- loss of radio communication during a DME or GNSS arrival procedure
- minimum obstacle clearance criteria during a DME or GNSS arrival missed approach procedure
- mode of operation required during each segment of a GNSS/NPA

- operating procedures for GNSS equipment that reduce or eliminate errors
- operating procedures that provide safeguards against GNSS navigational errors
- operation of electronic communications equipment
- operational requirements that apply to planning a flight on the basis of conducting a RNAV (GNSS) procedure at the destination
- parameters applicable to RAIM warnings in the en route, terminal and approach modes
- pilot responsibilities when DME or GNSS arrival is conducted outside controlled airspace
- prediction limitations that apply to availability of approach RAIM at the destination or alternate aerodrome
- procedure for joining the circuit from a DME or GNSS arrival
- procedures for adjusting controls to optimise equipment operation
- procedures for managing and controlling hazardous situations
- radio procedures for a DME or GNSS arrival
- relevant sections of national and state/territory regulatory requirements and codes of practice
- relevant WHS/OHS and environmental procedures and regulations
- requirements applicable to pilots and equipment for GNSS operations
- requirements for completing relevant documentation
- sources of information on differences in equipment and related standard operating and servicing procedures
- steps involved in planning work activities
- tracking tolerances, automatic way-point sequencing, CDI sensitivity and RAIM availability parameters for entry, RAIM availability and approach segments.

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.

Links

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