Australian Government

Assessment Requirements for AVIH5017 Navigate aircraft under instrument flight rules

Release: 1

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Modification History

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

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 air safety practices and regulations
- applying altimetry procedures to all stages of an instrument flight
- applying operational requirements that apply to planning a flight on the basis of conducting an area navigation (RNAV) global navigation satellite system (GNSS) procedure at the destination
- applying relevant aeronautical knowledge
- applying turbulence penetration techniques
- communicating effectively with others
- completing relevant documentation
- determining time made good (TMG), ground speed (GS), estimated time of arrival (ETA), time and distance to waypoint (WPT), wind velocity (WV) in flight
- identifying and correctly using equipment required when navigating an aircraft under IFR
- implementing aviation risk management processes to minimise, control or eliminate identified hazards
- implementing contingency plans
- implementing work health and safety (WHS)/occupational health and safety (OHS) procedures and relevant regulations
- interpreting typical GNSS navigational displays including latitude/longitude (Lat/Long), distance and bearing to waypoint, course deviation indications (CDI)
- maintaining interception and maintenance of GNSS defined tracks
- modifying activities depending on workplace contingencies, situations and environments
- monitoring work activities in terms of planned schedule
- operating electronic communications equipment to required protocol
- performing non-directional beacon (NDB) approaches:
    - calculating heading to steer to intercept a new or original track to or from an NDB
    - calculating heading to steer to intercept desired inbound track before reaching an NDB
    - calculating relative bearing that will indicate desired track to or from an NDB has been

intercepted, given the intercept heading
    - calculating track to and from an NDB, given heading and relative bearings
    - determining NDB station passage, abeam NDB station, NDB bearing the aircraft is on, tracking error and/or drift experienced, from automatic direction finder (ADF) relative bearing indications
    - fixing position, given relative bearing indications utilising two NDB stations
- performing VHF omni directional radio range (VOR) approaches:
    - calculating heading to steer to intercept a new or original track to or from a VOR
    - determining off-track distance experienced from VOR and DME cockpit indications
    - determining scalloping, VOR station passage, abeam VOR station, VOR radial the aircraft is on, tracking error and/or drift experienced, from VOR cockpit indications
    - fixing position, given cockpit instrument indications utilising two VOR stations
    - fixing position, given instrument indications utilising combinations of VOR, NDB and DME
- performing IFR navigational functions within the parameters of authorised regulations, orders and operations manual procedures
- predicting availability of approach receiver autonomous integrity monitoring (RAIM) at destination or alternate aerodrome and limitations that apply to the prediction
- reading, interpreting and following relevant regulations, instructions, procedures, information and signs
- recognising and taking appropriate action for GNSS warnings
- recognising significant variances from forecast meteorological conditions and taking appropriate actions, including issuing an air report (AIREP) and messages
- reporting and/or rectifying problems, faults or malfunctions promptly, in accordance with workplace procedures
- selecting and using required personal protective clothing and equipment conforming to industry and WHS/OHS standards
- sourcing and interpreting aviation weather forecast products and services appropriate to flight planning and navigation procedures
- 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:

- air traffic control (ATC) rules and procedures:
  - abnormal operations and/or emergency procedures in control area (CTA), control zone (CTR), Class G airspace and at non-controlled aerodromes
  - airways clearance requirements for entering, operating in and departing CTA and CTR, including what details to provide to ATC, and what details to expect from ATC
  - airways clearance requirements for operating in all classes of airspace, including lead time required for flight plan submission, contents, clearance void time, and read back requirement
  - ATC requirements for a change of level in CTA, including in an emergency
  - controlled area protection
  - departure, climb, transition to cruise (levelling out), cruise, change of levels, descent and visual approach procedures, day and night, in CTA and CTR
  - departure, climb, transition to cruise (levelling out), cruise, change of levels, descent, and arrival procedures in Class G airspace and at non-controlled aerodromes
  - loss of radio communication procedures in CTA, CTR, Class G airspace and at non-controlled aerodromes
  - maximum permissible time interval is between ATC transmissions during radar vectoring
  - radar emergency procedures, including loss of radio communication, radar failure, transponder emergency codes, and aircraft emergencies
  - radar services that are provided by ATC
  - radar vectoring procedures, including radio procedures and phraseologies
  - radio procedures in CTA, CTR, Class G airspace and at non-controlled aerodromes
  - requirements and procedure for a diversion to an alternate aerodrome
  - separation provisions between IFR flights, and IFR and VFR flights in the various classes of CTA
  - separation provisions between IFR flights, and IFR and VFR flights in GAAP CTR
  - visual approach procedures, day and night, in Class G airspace and at non-controlled aerodromes, including landing manoeuvres, cancellation of search and rescue alerting (SARWATCH), and operation of VHF aerodrome lighting (PAL)
- GNSS:
  - effect of availability or otherwise of baro-aiding on RAIM availability and prediction
  - effect of each type of RAIM prediction operational requirements
  - effect of satellite unserviceability on the reliability of each type of prediction
  - factors that may adversely affect the conduct of a GNSS/NPA and explain suitable pilot procedures to minimise such effects
  - GNSS operating procedures for typical navigational tasks using a specific type of aircraft equipment
  - GNSS operating procedures that provide safeguards against navigational errors and loss of situational awareness
  - GNSS operational and serviceability checks
  - human factor limitations associated with using GNSS equipment
  - indications of waypoint passage

- methods of position fixing using a GNSS system
- mode of operation required during each segment of a GNSS/NPA, conditions required to transition to and operate in that mode, and associated CDI sensitivity and RAIM protection provided
- operating procedures for GNSS equipment that reduce or eliminate errors due to any of these factors
- 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
- parameters applicable to tracking tolerances, automatic waypoint sequencing, CDI sensitivity and RAIM availability
- principles of operation, performance limitations and errors of a GNSS system
- requirements applicable to pilots and equipment for GNSS operations

- NDB:
  - effects of coastal refraction, night error, thunderstorms, mountainous areas, types of terrain and altitude of aircraft on NDB indications or range
  - methods of selecting and using most appropriate NDB for tracking during navigation
  - NDB tracking techniques, procedures and limitations
  - procedures for sector entry and holding using NDB
- VOR:
  - procedures for sector entry and holding using VOR
  - VOR instrument settings required to provide command indications when flying on given tracks both to and from VOR
  - VOR tracking techniques, procedures and limitations.

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

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