



Australian Government

Assessment Requirements for AVIH0004 Implement instrument flight rules planning procedures

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 knowledge of:
 - climb and descent tables and charts
 - constant mach flight planning tables and charts
 - long range cruise charts and tables
- applying knowledge standard extended twin-engine operations (ETOPS) considerations
- applying published instrument flight rules (IFR) procedures
- applying precautions and required action to minimise, control or eliminate identified hazards
- applying relevant legislation and workplace procedures
- calculating altimeter corrections from authorised sources, true altitude above mean sea level and height above terrain for a range of pressure altitudes and temperatures, and using standard atmosphere tables
- calculating flight time and fuel with varying fuel quantities to determine cost of carriage
- calculating minimum fuel and flight time, including taxi fuel, optimum altitude, use of charts, reserve fuel and critical point (CP) fuel
- calculating minimum fuel to destination to include distant alternates, and using destination as the alternate
- communicating effectively with others
- completing relevant documentation
- decoding aviation weather reports, including observing, trending and analysing simultaneous reports and conditions
- determining aircraft limits and maximum payloads
- determining conversion angles, convergency applications, plotting relative true north and grid north using Mercator, lambert conformal and polar stereographic charts
- determining operational requirements
- estimating winds and temperatures at flight levels corresponding to upper-air charts and at intermediate flight levels
- examining surface and upper-air charts in mid-latitude and tropical regions

- examining synoptic and aeronautical prognostic charts to determine movement and time evolution
- examining typical charts and forecasts for flight planning to decode aerodrome and trend type landing forecasts
- identifying and briefing aeronautical climatology of a specific route
- identifying and correctly using relevant equipment
- identifying and selecting suitable navigation aids/systems
- implementing contingency plans
- implementing work health and safety (WHS)/occupational health and safety (OHS) procedures and relevant regulations
- inspecting and identifying actual and forecast charts for pressure patterns on surface and upper-air charts, and identifying pressure gradients
- interpreting and following operational instructions and prioritising work
- interpreting instrument flight charts
- interpreting instrument meteorological condition (IMC) forecasts
- interpreting tropopause and maximum winds charts
- interpreting weather observations plotted on standard format synoptic charts
- making flight notifications
- making proficient operational decisions
- 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
- obtaining and using current operational documents
- operating electronic communications equipment to required protocol
- performing calculations for a given true track, true airspeed (TAS) and distance to CP in zero wind, tailwind and beam wind
- performing calculations for a given true track, TAS and endurance, distance to point of no return (PNR) in zero wind, tailwind and beam wind, establish maximum PNR, return to departure airport and alternate airport all engines and one engine inoperative
- reading, interpreting and following relevant regulations, instructions, procedures, information and signs
- reporting and/or rectifying problems, faults or malfunctions promptly, in accordance workplace procedures
- reviewing aircraft performance and cruise control procedures and variations using aircraft flight manual graphs
- selecting and using required personal protective clothing and equipment conforming to industry and WHS/OHS standards
- 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:

- aerodrome and en route holding procedures
- aircraft documents pouch:
 - certificate of airworthiness
 - certificate of registration
 - aircraft radio licence
 - fuel supplier carnet
 - emergency en route charts
 - sabotage checklist
- aircraft fuel planning including holding, alternate, fixed reserve and usage rates
- aircraft library:
 - aircraft operating manual
 - section of operating manual applicable to flight crew
 - aeronautical information publications
 - aircraft journey logbook
- airspace requirements and procedures under IFR conditions
- CP and point of no return
- customs and immigration forms:
 - general declaration forms
 - passenger manifest
 - crew manifest
- ETOPS:
 - adequate airport
 - suitable airport
 - auxiliary power unit
 - ETOPS configuration
 - extended range operations
 - extended range entry point
 - fail-safe
 - inflight shutdown
 - airworthiness
 - 60 minute operation
 - 120 minute operation
 - 180 minute operation
 - minimum equipment list
 - weather

- fuel
- operational practices and procedures
- flight planning
- one engine inoperative performance
- all engines operating performance
- drift down
- cruise altitude, and coverage at 10,000 feet
- holding
- altitude capability
- missed approach
- en route alternate airport requirements
- minima
- precision and non-precision approaches
- fuel and oil supply
- non-standard atmospheric conditions
- factors affecting en route performance, range and endurance
- gross error checking requirements:
 - flight designator
 - aircraft registration
 - minimum fuel
 - maximum permissible take-off mass
 - taxi fuel
 - alternate/s
 - fuel over destination
 - wind component and temperature
 - route
 - name of dispatcher
- ground and space-based navigation systems and infrastructure
 - ground based systems
 - space based systems
 - global navigation satellite system (GNSS) operating procedure errors
 - continuous descent final approach (CDFA) techniques
- how to determine currency of operational documents
- icing conditions and hazards
- IFR cruising levels, selection and hazards
- IFR route planning requirements
- in an Australian Defence Force (ADF) context, relevant Defence Orders and Instructions
- instrument flight documentation requirements
- instrument flight procedures:
 - flight instrument operations, errors and limitations

- radio communication phraseology
- lost communications procedures
- air traffic service requirements
- instrument chart symbology and information
- reporting requirements
- 2D/3D instrument approach operations
- altimeter accuracy and variations due temperature
- flight plan validity
- search and rescue times (SARTIME) and pilot obligations
- missed approach requirements
- alternate aerodrome weather minima
- aircraft separation standards
- pilot activated lighting (PAL)
- runway visual approach slope lighting system operation and limitations
- pilot responsibilities
- aircraft transponder operation
- limitations on use of radar on ground
- lowest safe altitude (LSALT):
 - calculate route LSALT not specified in aeronautical information publication (AIP)
 - missed approach minimum obstacle clearance
 - minimum obstacle clearance provided by minimum circling altitude
 - track establishment after take-off
 - establish aircraft above LSALT requirements
 - descent below LSALT or minimum safety altitude requirements by day/night/night visual flight rules (NVFR)
- meteorological considerations for an IFR flight:
 - atmosphere, composition and structure
 - International Standard Atmosphere (ISA)
 - atmospheric temperature and humidity
 - units of measurement
 - mechanisms
 - actual atmospheric heating
 - temperature at the earth's surface
 - atmospheric humidity
 - adiabatic processes
 - atmospheric stability
 - vertical distribution of temperature (lapse rate)
 - atmospheric pressures
 - variation to pressure height
 - constant pressure charts

- pressure-wind relationships
- horizontal forces acting on the air
- winds near the earth surface
- winds in the free atmosphere
- types of atmospheric turbulence
- mountain waves (rotors)
- formation of clouds and precipitation and processes involved
- motion in cloud formation and precipitation
- formation of types of precipitation
- thunderstorms
- aircraft icing
- visibility and runway visual range (RVR)/slant visual range (SVR)
- components of aerodrome operating minima (visibility and RVR)
- causes of reduced visibility
- fog types
- volcanic ash
- surface observations
- upper air observations
- observations from satellites
- station model
- air masses and fronts
- frontal depressions and characteristics
- other types of pressure systems
- climatology
- tropical weather
- aeronautical meteorological reports
- weather reporting services
- analysis of surface and upper-air charts
- synoptic charts in the topics
- prognostic charts
- aeronautical forecasts
- role of international meteorological services
- meteorological communications
- navigation requirements:
 - position and distance
 - measurement of distance
 - time and time zones
 - true, magnetic and compass directions
 - gyro heading and grid direction

- chart projections (all types)
- International Civil Aviation Organization (ICAO) chart requirements
- charts used by a typical operator
- measurement of true airspeed by airspeed indicator
- measurement of true airspeed by other means
- track and ground speed
- use of slide rules and scientific calculators
- measure of aircraft altitude
- PNR
- CP (equal time point)
- general determination of aircraft position
- introduction to radio navigation
- ground based radar and direction-finding
- relative bearings including aircraft ADF
- VOR/DME-type radio navigation
- instrument landing system (ILS)
- navigation procedures
- position fixing requirements
- aircraft performance categories and operational implications
- waypoints, symbology and pilot requirements
- visual circling by day or night
- pressure error correction (PEC)
- aerodrome operating minima (AOM)
- decision altitude (DA)
- normal segment gradient
- tracking tolerances
- speed limitations and restrictions
- operational planning requirements:
 - flight planning
 - alternate aerodrome requirements
 - holding fuel requirements
 - NVFR operational requirements
 - planned/alternate destination weather conditions below minima
 - receiver autonomous integrity monitoring (RAIM) prediction implications
- performance based navigation (PBN):
 - PBN principles
 - area navigation (RNAV) required navigation performance (RNP) capability
 - core components
 - navigation system performance requirements

- performance monitoring and alerting
- RNP specifications and system requirements
- RNP navigation system errors
- RNP leg types
- RNP leg transitions
- RNP navigation authorisation requirements
- GNSS receiver requirements for RNP APCH operations
- GNSS receiver mode conditions and actions for RNP APCH
- RNP instrument approach requirements
- augmented and non-augmented approaches
- interpret IAP charts for minima information and operational restrictions
- validity and accuracy of QNH for RNP APCH types
- RNP approach differentiation
- Space based augmentation systems (SBAS)
- APV Baro-VNAV instrument approach charts
- vertical guidance information and operational considerations
- Baro-VNAV vertical guidance principles
- practical uses of critical points (CP)
- privileges and limitations conferred by an instrument rating
- reduced vertical separation minima (RVSM) operations
 - range of flight levels within Australian airspace
 - operational requirements
 - aircraft altimeter accuracy requirements
 - vertical height tolerances
 - procedures and standard communication phraseology
 - altimetry system failures
- relevant WHS/OHS and environmental procedures and regulations
- relevant sections of Civil Aviation Safety Regulations (CASRs) and Civil Aviation Orders for IFR and planning requirements
- requirements for an alternate aerodrome
- use of a navigational computer.

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>