



Australian Government

AVIW0005 Determine meteorological factors for remote pilot aircraft operations

Release: 1

AVIW0005 Determine meteorological factors for remote pilot aircraft operations

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 determine meteorological factors for remote pilot aircraft systems (RPAS) beyond visual line of sight (BVLOS) in compliance with the relevant regulatory requirements of the Civil Aviation Safety Authority (CASA) and national operating standards

It includes determining aircraft meets requirements for BVLOS flight, obtaining and using current operational documents, preparing aircraft systems and monitoring during operations. It also includes determining operational requirements and programming navigation systems.

This unit addresses aviation technical skill requirements (physical, mental and task-management abilities) related to route planning and navigation duties of flight crew 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.

Pre-requisite Unit

Not applicable.

Competency Field

H – Route Planning and Navigation

Unit Sector

Not applicable.

Elements and Performance Criteria

ELEMENTS

Elements describe the essential outcomes.

1 Obtain and use current operational meteorological documents

2 Determine aircraft meets requirements for BVLOS operations

3 Monitor operations

PERFORMANCE CRITERIA

Performance criteria describe the performance needed to demonstrate achievement of the element.

- | | |
|------------|--|
| 1.1 | Operational meteorological documents applicable to flight are obtained and checked for currency |
| 1.2 | Applicable information contained in documents for flight planning and management is interpreted and applied |
| 2.1 | Aircraft requirements for BVLOS operations are determined and meet identified conditions |
| 2.2 | Flight and navigation instruments, minimum electrical lighting, navigation equipment and any other requirements fitted to aircraft are checked to ensure they are suitable and acceptable for BVLOS operations |
| 2.3 | Duration of flight is determined |
| 2.4 | Total fuel/power requirements are calculated to ensure sufficient flight duration for the task |
| 3.1 | Operationally useful weather observations are gathered accurately |
| 3.2 | Issues with weather observations are identified and reported accurately to relevant personnel |
| 3.3 | Meteorological environment is monitored during operations |

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

No equivalent unit.

Links

AVI Training Package Companion Volume Implementation Guide available on VET Net: -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=4725260a-0af3-4daf-912b-ef1c2f3e5816>

Assessment Requirements for AVIW0005 Determine meteorological factors for remote pilot aircraft operations

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 (SOPs)
- applying altimetry procedures to all stages of an instrument flight
- applying published instrument flight rules (IFR) procedures
- applying precautions and required action to minimise, control or eliminate identified hazards
- applying relevant aeronautical knowledge
- applying relevant legislation and workplace procedures
- calculating fuel/power requirements
- communicating effectively with others
- completing relevant documentation
- identifying and correctly using relevant equipment
- implementing contingency plans
- implementing work health and safety (WHS) procedures and relevant regulations
- interpreting instrument meteorological conditions (IMC) forecasts
- 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
- reading, interpreting and following relevant regulations, instructions, procedures, information and signs
- reporting and/or rectifying problems, faults or malfunctions promptly in accordance with workplace procedures
- selecting and using required personal protective equipment (PPE) conforming to industry and WHS standards
- selecting suitable navigation aids/systems
- 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 fuel planning, including holding, alternate, fixed reserve and usage rates
- aircraft transponder operation
- airspace requirements and procedures under BVLOS conditions
- Civil Aviation Safety Regulation (CASR) Part 101 Manual of Standards (MOS) Aeronautical Knowledge relevant to BVLOS flight operations
- continuous descent final approach (CDFA) techniques
- critical point (CP) and point of no return (PNR)
- how to determine currency of operational documents
- factors affecting en route performance, range and endurance
- general operational information relevant to BVLOS remote pilots, including:
 - privileges and limitations
 - documentation
 - procedures, radio telephony and charts
 - meteorology
 - operational planning requirements
- ground and space navigation systems and infrastructure, including:
 - principles of operation, indications and limitations of ground-based navigation aids
 - altitude and time of day
 - pilot navigation tolerances
 - global navigation satellite system (GNSS), including:
 - operating procedure errors
 - mode selection
 - data entry
 - data validation and checking, including independent cross-checking procedures
 - automation induced complacency
 - non-standardisation of GNSS receiver units
 - human information processing
 - situational awareness
- human factors relevant to BVLOS remote pilots, including physiological factors
- icing conditions and hazards
- IFR cruising levels, selection and hazards
- BVLOS route planning requirements
- instrument flight documentation requirements
- BVLOS flight procedures, including:
 - 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
- pilot responsibilities
- altimeter accuracy and variations due temperature
- flight plan validity
- pilot obligations
- missed approach requirements
- alternate aerodrome weather minima
- aircraft separation standards
- lowest safe altitude (LSALT), including:
 - calculate route LSALT not specified in aeronautical information publications (AIP)
 - missed approach minimum obstacle clearance
 - minimum obstacle clearance provided by minimum circling altitude
 - track establishment after launch
 - 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 BVLOS flight, including:
 - weather phenomena:
 - frontal weather
 - tropical cyclones
 - dust devils
 - thunderstorms
 - jet streams
 - fog
 - meteorological information requirements
 - interpreting forecasts to determine operational requirements
 - air temperature lapse rates
 - predicting probability of meteorological conditions:
 - airframe icing
 - hail
 - micro-bursts and wind shear
 - turbulence, including clear air turbulence (CAT)
 - weather information services
 - pilot reporting obligations
 - altimeter query nautical height (QNH) sources required for BVLOS operations
 - meteorological minimas

- navigation requirements, including:
 - position fixing requirements
 - aircraft performance categories and operational implications
 - waypoints, symbology and pilot requirements:
 - initial approach fix
 - final approach fix
 - visual circling by day or night
 - pressure error correction (PEC)
 - aerodrome operating minima (AOM)
 - decision altitude (DA)
 - normal segment gradient
 - tracking tolerances:
 - controlled area (CTA) avoidance
 - ground-based navigation aids
 - navigation aids not available
 - notification requirements
 - order of precision of navigation aids/systems
 - speed limitations and restrictions:
 - operations below 10,000 feet above mean sea level (AMSL)
 - during holding procedures
 - during approach procedures
 - issued by air traffic services and when cancelled
- NVFR operational requirements
- operational planning requirements, including:
 - flight planning:
 - route limitations
 - aircraft performance
 - forecast freezing levels
 - cruising altitude/level performance tables
 - alternate aerodrome requirements:
 - weather
 - navigation aids
 - approach procedures
 - lighting
 - availability of weather reports
 - divert time
 - holding fuel requirements
 - GNSS receiver requirements for BVLOS APCH operations
 - GNSS receiver mode conditions and actions for BVLOS APCH
 - augmented and non-augmented approaches

- IAP charts for minima information and operational restrictions
- space-based augmentation systems (SBAS)
- APV Baro-VNAV instrument approach charts
- vertical guidance information and operational considerations
- Baro-VNAV vertical guidance principles
- pilot responsibilities, including:
 - standard instrument departure (SID)
 - standard terminal arrival route (STAR)
 - noise abatement
 - missed approach
 - holding pattern and entry
- planned/alternate destination weather conditions below minima
- privileges and limitations conferred by an instrument rating
- receiver autonomous integrity monitoring (RAIM) prediction implications
- reduced vertical separation minima (RVSM) operations, including:
 - 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 and environmental procedures and regulations
- relevant sections of Civil Aviation Safety Regulations (CASRs) for BVLOS planning requirements
- requirements for an alternate aerodrome
- use of a navigational computer.

Assessment Conditions

Assessors must hold credentials specified within the Standards for Registered Training Organisations current at the time of assessment.

Assessment must satisfy the Principles of Assessment and Rules of Evidence and all regulatory requirements included within the Standards for Registered Training Organisations current at the time of assessment.

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

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.

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 PPE currently used in industry.

Links

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