



Australian Government

AVIF0016 Manage network data links

Release: 1

AVIF0016 Manage network data links

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 set up and monitor networks and data links with unmanned aircraft systems beyond visual line of sight (BVLOS) in compliance with relevant regulatory requirements of the Civil Aviation Safety Authority (CASA) and international aviation operating standards.

It includes maintaining aviation communication and data links, managing routine and emergency airborne situations.

This unit addresses aviation technical skill requirements (physical, mental and task-management abilities) related to aircraft operational duties of flight dispatch and flight operations support personnel, 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 as a single operator or within a team environment.

Licensing, legislative, regulatory or certification requirements are applicable to this unit.

Pre-requisite Unit

Not applicable.

Competency Field

Y – Aircraft Operations and Traffic Management

Unit Sector

Not applicable.

Elements and Performance Criteria

ELEMENTS

PERFORMANCE CRITERIA

Elements describe the essential outcomes.

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

- | | |
|---|--|
| 1 Set up aviation networks and data links | 1.1 The extent of the network to be set up is determined from flight plan and/or in consultation with appropriate persons.

1.2 Data network links are set up using a range of appropriate transmitting and receiving methods and protocols

1.3 Consideration is given to the technical factors that will have an impact on the network connections

1.4 Risk management strategies are determined with relevant team members where available |
| 2 Maintain aviation networks and data links | 2.1 Data network links are monitored and maintained throughout flight support activities using a range of appropriate transmitting and receiving methods and protocols

2.2 Voice and data communication links with emergency response agencies are monitored and maintained throughout flight using a range of appropriate transmitting and receiving methods and protocols

2.3 Aircraft position information and reports are routinely monitored and data communication links within flight support monitoring systems updated

2.4 Aircraft communication links are continuously monitored and appropriate voice and data communication failure response plans are implemented |
| 3 Manage unanticipated airborne situations | 3.1 Unanticipated severe weather penetration effects are evaluated against flight plan and amendments are made

3.2 High terrain transit performance calculations and effects on flight performance are addressed |
| 4 Manage contingencies with networks beyond visual line of sight | 4.1 Overdue position reports are responded to in accordance with regulatory and workplace requirements

4.2 Overdue at destination response actions are implemented in accordance with regulatory and workplace requirements |

- 4.3 Contingency plans for aircraft power exhaustion are implemented and coordination with emergency response agencies is maintained
- 4.5 Unlawful interference with aviation and aircraft flight safety is identified and managed in accordance with regulatory and workplace requirements
- 4.6 Emergency landing procedures are implemented during aircraft emergency situations
- 4.7 Coordination and liaison with retrieval crew is maintained during aircraft emergency situations

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 AVIF0016 Manage network data links

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 in accordance with standard operating procedures (SOPs)
- applying precautions and required actions to minimise, control or eliminate identified hazards
- applying relevant legislation and workplace procedures
- communicating and negotiating effectively with others
- completing documentation related to work activities
- identifying and correctly using flight support equipment, processes and procedures
- implementing and managing contingency plans for unanticipated and routine airborne situations, including:
 - aircraft power variations
 - aircraft performance
 - effects of flight diversion over different terrain
 - unanticipated meteorological conditions
- implementing and managing contingency plans for unanticipated and emergency airborne situations, including:
 - overdue position report
 - overdue at destination
 - fuel/power exhaustion
 - inability to communicate with aircraft
 - continuing to operate in unsafe conditions
 - loss of power
 - ditching/emergency landing
 - government/air traffic control (ATC) coordination and notification
 - unlawful interference with aviation
- interpreting and following operational instructions and prioritising work
- maintaining aviation communications and data links, including:
 - data communications:
 - transmission control protocol (TCP)/internet protocol (IP)

- high frequency (HF)
- satellite
- voice communications:
 - mobile telephony
 - very high frequency (VHF)
 - ultra-high frequency (UHF)
 - HF
 - radio over IP (ROIP)
 - satellite
- modifying activities depending on differing operational dispatch contingencies, risk situations and environments
- monitoring flight performance, including:
 - power availability
 - en route weather, including winds
 - aircraft performance, including the limitations imposed by minimum equipment list (MEL) restrictions
 - perishable cargo
- operating electronic communications equipment to required protocol
- reading, interpreting and following relevant regulations, instructions, procedures, information and signs
- reporting and documenting unlawful interference with aviation
- reporting and/or rectifying identified problems promptly in accordance with regulatory requirements and workplace procedures
- selecting and using required personal protective equipment (PPE) conforming to industry and work health and safety (WHS) standards
- taking action to manage unlawful interference with aviation
- working collaboratively with others when managing disruptive and unlawful behaviour within aviation operating environments
- 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:

- aeronautical mobile service, including:
 - VHF band frequency utilisation
 - phonetic alphabet
 - standard words
 - call signs
 - abbreviations

- communications
- priorities:
 - distress
 - urgency
 - traffic
- practical operations
- automated aeronautical service, including:
 - telecommunications service
 - flight weather (VOLMET)
 - VHF
 - HF
 - automatic terminal information service (ATIS)
- applying relevant aeronautical knowledge to flight monitoring services
- aviation risk management processes
- contingency planning considerations for unanticipated and routine airborne situations, including:
 - aircraft power consumption variations
 - aircraft performance calculations and variations
 - effects of flight diversion over different terrain
 - unanticipated meteorological conditions, including icing conditions
- contingency planning considerations for unanticipated and emergency airborne situations, including:
 - overdue position report
 - overdue at destination
 - power exhaustion
 - inability to communicate with aircraft
 - continuing to operate in unsafe conditions
 - ditching/emergency landing
- elementary radio theory, including:
 - amplitude
 - frequency
 - period
 - wavelength
 - electromagnetic wave
 - sound wave
 - electromagnetic spectrum
 - radio spectrum:
 - very low frequency (VLF)
 - low frequency (LF)
 - medium frequency (MF)

- HF
- VHF
- UHF
- propagation of radio waves
- skip distance and hops
- D, E, and F layers
- aerials:
 - polar diagrams
 - Figure 8
 - cardioid
- modulation:
 - AM
 - FM
 - sidebands: SSB and DSB
- elementary radio transmit/receive (TX/RX)
- en route weather changes, including:
 - winds
 - weather re-routes
- fatigue risk management processes
- flight equipment failures, including:
 - effect on performance:
 - potential for diversion
 - effect on subsequent flights
 - availability of maintenance at diversion location:
 - effect on other systems
 - emergency potential
- flight monitoring resources - position reports:
 - company radio:
 - Aeronautical Radio Incorporated (ARINC) reports
 - commercial radio net reports
 - aircraft situation display (ASD)
 - departure station reports
 - destination station reports
 - air traffic control (ATC) reports
 - satellite communications (SATCOM)
- flight watch requirements, including:
 - aircraft position fixes and reporting requirements
 - en route weather and wind monitoring
 - estimated time of arrival (ETA) calculations
 - fuel/battery power performance calculations for routine and emergency airborne

situations

- identification of methods and procedures for managing unlawful interference with aviation as a flight dispatcher
- relevant state/territory regulations and requirements
- relevant WHS and environmental protection procedures and guidelines
- risks and hazards when monitoring flight performance and related actions to control the risk.

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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