



Australian Government

Department of Education, Employment and Workplace Relations

AVIF4001B Manage human factors in aircraft flight

Revision Number: 1

AVIF4001B Manage human factors in aircraft flight

Modification History

Not applicable.

Unit Descriptor

Unit Descriptor

This unit involves the skills, knowledge and attitudes required to manage human factors in aircraft flight including monitoring own performance, recognising errors and managing corrective action, and managing own physiological and psychological condition. Licensing, legislative, regulatory or certification requirements are applicable to this unit.

Application of the Unit

Application of the Unit

Work must be carried out in compliance with the relevant licence and aircraft rating requirements of the Civil Aviation Safety Authority (CASA) and/or ADF; airspace control requirements and Day Visual Flight Rules (Day VFR); Instrument Flight Rules (IFR); and aircraft control principles, regulations, safety codes, protocols and procedures relevant when managing human factors in aircraft flight.

Work involves the management of human factors before and during an aircraft flight as part of commercial and military aircraft activities across a variety of operational contexts within the Australian aviation industry.

Use for ADF Aviation is to be in accordance with relevant Defence Orders and Instructions and applicable CASA compliance.

Work is performed under limited supervision.

This unit is nominally packaged at Certificate IV.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Not applicable.

Employability Skills Information

Employability Skills This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.

Performance criteria describe the required performance needed to demonstrate achievement of the element. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1 Manage personal performance	1.1 Pre- and post-flight personal condition is managed to ensure safe outcome of flight 1.2 Own performance in flight is monitored against workplace standards, procedures and requirements 1.3 Degradation of personal condition and/or limitations are recognised and appropriate strategies are implemented to ensure the safe outcome of a flight
2 Recognise threats and errors, and manage preventative and corrective action	2.1 Relevant environmental or operational threats that are likely to affect the safety of the flight are identified 2.2 Countermeasures to manage threats are developed and implemented 2.3 Flight progress is monitored and assessed to ensure a safe outcome, or actions are modified when a safe outcome is not assured 2.4 Checklists and standard operating procedures are applied to prevent aircraft handling, procedural or communication errors; and committed errors are identified before safety is affected or aircraft enters an undesired aircraft state 2.5 Aircraft systems, flight environment and crewmembers are monitored, and information is collected and analysed to identify potential or actual errors 2.6 Countermeasures are implemented to prevent errors, or action is taken in the time available to correct errors before the aircraft enters an undesired aircraft state

Required Skills and Knowledge

REQUIRED KNOWLEDGE AND SKILLS

This describes the essential knowledge and skills and their level required for this unit.

Required knowledge:

- Relevant sections of Civil Aviation Safety Regulations and Civil Aviation Orders
- In Defence context, relevant Defence Orders and Instructions
- Relevant OH&S procedures and regulations
- Human factors that may influence pilot performance during a flight
- Potential errors that may occur during a flight and procedures for taking appropriate preventative and corrective action
- Strategies for management of fatigue
- Aspects of lifestyle that may adversely influence a pilot's physiological/psychological condition and/or fatigue during a flight
- The adverse effects of alcohol and prescription and non prescription drugs and regulation concerning alcohol and drug use by pilots
- Effects of stress on pilot performance and ways of managing and controlling the various stressors that may impact on a pilot
- Explain how the use of checklists and standard procedures prevents errors
- Explain how prioritising and managing workload can reduce the commission of errors
- Requirements for reporting and documenting any safety incidents and safety critical errors that may have occurred during a flight
- An understanding of principles of threat and error management
- Recognition of undesired aircraft states

Required skills:

- Recognise threats and errors and take appropriate corrective action to avoid an undesired aircraft state
- Manage own physiological and psychological condition
- Manage and control stress before and during a flight
- Maintain compliance with relevant regulatory requirements including the avoidance of alcohol and drugs before and during a flight
- Monitor own performance before and during a flight
- Set priorities and manage workload to ensure safe task completion in the time available
- Manage aspects of lifestyle that may impact upon pilot performance
- Recognise signs of fatigue and apply appropriate fatigue management techniques
- Identify symptoms of deterioration in physiological/psychological condition and recognise signs of error that might endanger the safety of a flight and take appropriate corrective action

REQUIRED KNOWLEDGE AND SKILLS

- Apply relevant air safety practices and regulations
- Communicate effectively with others when managing human factors in aircraft flight
- Read and interpret instructions, regulations, procedures and other information relevant to managing human factors in aircraft flight
- Interpret and follow operational instructions and prioritise work
- Complete documentation related to human factors in aircraft flight
- Operate electronic communication equipment to required protocol
- Work collaboratively with others when managing human factors in aircraft flight
- Adapt appropriately to cultural differences in the workplace, including modes of behaviour and interactions with others
- Promptly report and/or rectify any identified problems that may occur when managing human factors in aircraft flight in accordance with regulatory requirements and workplace procedures
- Implement contingency plans for unexpected events that may arise when managing human factors in aircraft flight
- Apply precautions and required action to minimise, control or eliminate hazards that may exist during the management of human factors in aircraft flight
- Monitor and anticipate operational problems and hazards and take appropriate action
- Monitor work activities in terms of planned schedule
- Modify activities dependent on differing workplace contingencies, situations and environments
- Work systematically with required attention to detail without injury to self or others, or damage to goods or equipment
- Adapt to differences in equipment and operating environment in accordance with standard operating procedures
- Select and use required personal protective equipment conforming to industry and OH&S standards
- Implement OH&S procedures and relevant regulations
- Identify and correctly use equipment required to manage human factors in aircraft flight

Evidence Guide

EVIDENCE GUIDE

The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required knowledge and skills, the range statement and the assessment guidelines for this Training Package.

Critical aspects for assessment and evidence required to demonstrate competency in this unit

- The evidence required to demonstrate competency in this unit must be relevant to and satisfy all of the requirements of the elements and performance criteria of this unit and include demonstration of applying:
 - the underpinning knowledge and skills
 - relevant legislation and workplace procedures
 - other relevant aspects of the range statement

Context of and specific resources for assessment

- Performance is demonstrated consistently over a period of time and in a suitable range of contexts
- Resources for assessment include:
 - a range of relevant exercises, case studies and/or other simulated practical and knowledge assessment, and/or
 - access to an appropriate range of relevant operational situations in the workplace
 - In both real and simulated environments, access is required to:
 - relevant and appropriate materials and equipment, and
 - applicable documentation including workplace procedures, regulations, codes of practice and operation manuals

Method of assessment

- Assessment of this unit must be undertaken by a registered training organisation
- As a minimum, assessment of knowledge must be conducted through appropriate written/oral tests
- Practical assessment must occur:
 - through activities in an appropriately simulated environment at the registered training organisation, and/or
 - in an appropriate range of situations in the workplace

Range Statement

RANGE STATEMENT

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance.

Tasks may be undertaken in:	• variable weather conditions in accordance with Day Visual Flight Rules • VMC with simulated IMC • IMC
Performance may be demonstrated in:	• single engine aircraft • multi engine aircraft • synthetic training device approved by the appropriate authority • variable air traffic conditions • variable flight situations • abnormal situations • classes of airspace as designated by the Civil Aviation Safety Authority
Aircraft may include:	• fixed wing • helicopter • commercial balloons • other commercial or military aircraft
Crew may include:	• single pilot • multi crew
Instruments may be:	• fitted flight instruments • head up displays
Limitations may be imposed by:	• local noise abatement requirements and curfews • airspace endorsements
Classes of airspace may be:	• as designated by the regulator • restricted and danger areas • military control zones • Air Defence Identification Zones
Deterioration of physiological condition may result from such causes as:	• physical illness • injury • disease • fatigue • lack of oxygen due to cabin depressurisation or problems with air supply • deep vein thrombosis (DVT) and other potential physiological hazards of air flight
Deterioration of psychological	• mental illness

RANGE STATEMENT

condition may result from such causes as:

- grief
- trauma
- interpersonal conflict
- overwork
- anxiety
- uncontrolled stress
- secondary effects of illness, disease or injury

Causes of stress may include:

- emergency situations
- poor planning and prioritisation of tasks
- interpersonal conflict
- fear and anxiety
- lack of sufficient knowledge to adequately manage flight tasks and contingencies
- inability to carry out simultaneous multiple tasks
- time pressures
- weather conditions
- unfamiliar environments/situations
- illness

Types of errors may include:

- incorrect heading
- incorrect speed
- incorrect altitude
- incorrect rotation of aircraft
- incorrect rate of descent
- incorrect power relative to maintain speed and altitude
- incorrect bank in turn
- incorrect bank in descending turn
- incorrect approach speed
- incorrect turn onto nominal heading
- climb outside of allowable tolerances
- stalling of aircraft
- ballooning and bouncing upon landing
- excessive deviation from centerline during take-off or landing
- navigation errors
- misinterpretation of communications
- non compliance with instructions

Dependent on the type of organisation concerned and the local terminology used, workplace procedures may include:

- company procedures
- enterprise procedures
- organisational procedures
- established procedures

RANGE STATEMENT

Information/documents may include:

- relevant sections of Civil Aviation Safety Regulations and Civil Aviation Orders pertaining to human factors and their effect on pilot performance
- civil Aviation Safety Regulations concerning limitations on drug and alcohol use by pilots
- in Defence context, relevant Defence Orders and Instructions
- Manual of Standards - Pilot Licensing (MOS-PL)
- Flight Manual/Pilot's Operating Handbook (POH)
- Aeronautical Information Publication (AIP)
- relevant sections of the Civil Aviation Advisory Publications (CAAP)
- performance charts
- operations manuals
- approved checklists
- workplace procedures and instructions and job specification
- induction and training materials
- conditions of service, legislation and industrial agreements including workplace agreements and awards

Applicable regulations and legislation may include:

- relevant Civil Aviation Safety Regulations and Civil Aviation Orders pertaining to human factors and their effect on pilot performance
- in Defence context, relevant Defence Orders and Instructions
- relevant state/territory OH&S legislation
- relevant regulations limiting the use of drugs and alcohol by pilots
- relevant Australian Standards

Performance includes tolerances specified in either of:

- relevant licence and aircraft rating requirements of the Civil Aviation Safety Authority (CASA) such as:
 - Day VFR Syllabus
 - Manual of Standards
- relevant Defence documentation such as:
 - Defence Orders and Instructions
 - approved curricula and training documentation

Unit Sector(s)

Not applicable.

Competency field

Competency Field F - Safety Management