



**Australian Government**

**Department of Education, Employment and Workplace Relations**

# **AVIY4002B Take off aeroplane**

**Revision Number: 1**

## AVIY4002B Take off aeroplane

### Modification History

Not applicable.

### Unit Descriptor

#### Unit Descriptor

This unit involves the skills and knowledge required to perform an aeroplane take-off, including completing pre-take-off checks, take-off procedures, after take-off checks and a rejected take-off. 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); and aircraft control principles, regulations, safety codes, protocols and procedures relevant to aeroplane take-off.

Operations are conducted 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

<b>ELEMENT</b>	<b>PERFORMANCE CRITERIA</b>
<b>1 Carry out pre-take-off procedures</b>	<ul style="list-style-type: none"><li>1.1 Pre-take-off briefing is completed</li><li>1.2 Approved pre-take-off and line up checklists are completed in accordance with Flight Manual/POH or company operations manual</li><li>1.3 Aeroplane is lined up in the centre of the runway in take-off direction</li><li>1.4 Air Traffic Control clearances are obtained where applicable</li></ul>
<b>2 Take off aeroplane</b>	<ul style="list-style-type: none"><li>2.1 Take-off power is applied, aeroplane is maintained aligned with centre of runway with wings maintained level and rotated at manufacturers recommended speed to achieve planned climb performance</li><li>2.2 Aeroplane is configured for nominated climb profile, and tracking on centreline of runway is maintained</li><li>2.3 Lookout is maintained using a systematic scan technique at a rate determined by traffic density, visibility and terrain</li><li>2.4 Separation with all circuit traffic is maintained</li><li>2.5 Radiotelephone listening watch is maintained</li><li>2.6 Local and published noise abatement requirements and curfews are observed</li><li>2.7 After take-off checks are performed in accordance with approved checklist</li></ul>
<b>3 Perform rejected take-off</b>	<ul style="list-style-type: none"><li>3.1 Rejected take-off requirement is identified</li><li>3.2 Power is reduced smoothly and promptly</li><li>3.3 Braking devices are activated</li><li>3.4 Control is maintained to bring the aeroplane to a safe stop</li><li>3.5 Associated procedures and/or checklists are initiated and completed</li></ul>

## 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 ADF context, relevant Defence Orders and Instructions
- Calculation of crosswind components
- Relevant OH&S and environmental procedures and regulations
- Principles of aerodynamics
- Purpose and functions of aeroplane systems
- Functions and effects of all aeroplane controls
- All pre-take-off and after take-off checks
- Aeroplane take-off performance
- Air traffic requirements
- Factors affecting take-off distance and initial climb performance
- Procedures for the use of take-off performance charts
- Factors affecting directional control of the aeroplane
- Problems that may occur when taking off an aeroplane and appropriate action that should be taken in each case
- Manufacturers specifications relating to the operation of aeroplane
- Obstacle clearance requirements

#### Required skills:

- Apply take-off procedures in accordance with regulatory requirements
- Compensate for the secondary effects of controls
- Interpret windsock indications
- Comply with air traffic instructions and regulatory requirements
- Maintain awareness of the circuit traffic situation
- Manage take-off emergencies
- Identify surface conditions, obstructions, other crossing traffic on runways and taxiways, or other hazards that might hinder a safe take-off
- Communicate effectively with others when taking off an aeroplane
- Read and interpret instructions, regulations, procedures and other information relevant to taking off an aeroplane
- Interpret and follow operational instructions and prioritise work
- Complete documentation related to taking off an aeroplane

## REQUIRED KNOWLEDGE AND SKILLS

- Operate electronic communication equipment to required protocol
- Work collaboratively with others when taking off an aeroplane
- 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 taking off an aeroplane in accordance with regulatory requirements and workplace procedures
- Implement contingency plans for unexpected events that may arise when taking off an aeroplane
- Apply precautions and required action to minimise, control or eliminate hazards that may exist when taking off an aeroplane
- 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 when taking off an aeroplane

# 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
- Performance may be demonstrated in:
- single engine aeroplane
  - multi engine aeroplane
  - variable air traffic conditions
  - variable flight situations
  - abnormal situations
  - classes of airspace as designated by the Civil Aviation Safety Authority
- Performance may be demonstrated on an aeroplane with:
- fully functioning dual controls
  - an electronic intercom system
  - dual control brakes
  - (if propeller-driven) a constant speed propeller
  - a cruise speed of at least 120 kts TAS at cruise power
- Aeroplane may include:
- fixed wing
  - 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
- Classes of airspace may be:
- as designated by the regulator
  - restricted and danger areas
  - military control zones
  - Air Defence Identification Zones
- Runways may include:
- sealed
  - gravel
  - grass
- Take-off must include:
- normal
  - crosswind
- Pre-take-off briefings may include:
- departure procedures
  - actions in the event of non-normal or emergency situations
- Air Traffic Control clearances may include:
- line-up
  - take-off



## RANGE STATEMENT

- Braking devices may include:

  - departure
  - wheel brakes
  - spoilers
  - prop fine/reverse
  - thrust reverse
  - other drag devices
- Rejected take-off requirement may include:

  - aeroplane malfunction
  - flight strip obstruction
  - ATC direction
  - aeroplane performance
- Dependent on the type of organisation concerned and the local terminology used, workplace procedures may include:

  - company procedures
  - enterprise procedures
  - organisational procedures
  - established procedures
  - standard operating procedures
- Information/documents may include:

  - relevant sections of Civil Aviation Safety Regulations and Civil Aviation Orders pertaining to taking off an aeroplane, including Day Visual Flight Rules (Day VFR)
  - in Defence context, relevant Defence Orders and Instructions
  - Flight Manual/Pilot's Operating Handbook (POH)
  - Manual of Standards - Pilot Licensing (MOS-PL)
  - Aeronautical Information Publication (AIP)
  - En Route Supplement Australia (ERSA)
  - take-off reference charts
  - approved operators 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
  - relevant Defence Orders and Instructions
  - relevant state/territory OH&S legislation
  - relevant state/territory environmental protection legislation
  - 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

**RANGE STATEMENT**

- 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**

Y - Aircraft Operation and Traffic Management