



Australian Government

Department of Education, Employment and Workplace Relations

AVIY4005B Execute advanced aeroplane manoeuvres and procedures

Revision Number: 1

AVIY4005B Execute advanced aeroplane manoeuvres and procedures

Modification History

Not applicable.

Unit Descriptor

Unit Descriptor

This unit involves the skills and knowledge required to control the aeroplane in a range of situations by the application of advanced manoeuvres and procedures, including turning an aeroplane steeply, sideslipping the aeroplane and executing short take-offs and landings. 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 when executing advanced aeroplane manoeuvres and procedures.

Operations are conducted as part of commercial or 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 Turn aeroplane steeply	1.1 Flightpath is cleared before and during turn 1.2 Level turn of nominated bank angle is achieved without altitude change to nominated heading 1.3 Descending turn of nominated bank angle is achieved to a nominated heading 1.4 Awareness of higher stall speed in turns is demonstrated 1.5 Aeroplane operating limits are not exceeded
2 Sideslip aeroplane	2.1 Yaw is induced to achieve increased rate of descent while maintaining track and airspeed 2.2 Recovery from sideslip is achieved and aeroplane is returned to balanced flight 2.3 Flightpath is cleared before and during manoeuvre 2.4 Glide speed is maintained
3 Execute short take-off	3.1 Take-off performance is calculated in accordance with performance chart 3.2 Pre-take-off, line-up and after take-off checks are performed in accordance with approved checklist and regulatory requirements 3.3 Aeroplane is lined up to enable use of maximum runway length 3.4 Short take-off technique is applied in accordance with Flight Manual/POH requirements 3.5 Separation with other traffic is maintained 3.6 Appropriate allowance is made for surface and wind conditions
4 Execute short landing	4.1 Landing performance is calculated in accordance with performance chart 4.2 Aeroplane is landed at nominated touchdown point using techniques and procedures in accordance with Flight Manual/POH requirements 4.3 Separation with other traffic is maintained 4.4 Appropriate allowance is made for surface and wind conditions 4.5 After landing checks are performed in accordance with approved checklist and regulatory requirements

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 Regulations and Orders
- In Defence context, relevant Defence Orders and Instructions
- Relevant OH&S and environmental procedures and regulations
- Principles of aerodynamics
- Functions and effects of all aeroplane controls
- Procedures for turning an aeroplane steeply
- Procedures for sideslipping an aeroplane
- Procedures for short take-offs and landings
- The increased stalling speed in a steep turn
- The increased induced drag during a steep turn
- The effects of a sideslip on aeroplane performance
- The effects of sideslipping on aeroplane on fuel, pitot and flap systems
- Take-off and landing performance chart calculations
- Ground hazards associated with minimum ground roll operations
- The effects of g forces
- The effects of maximum rate and minimum radius turns
- Application of pre-manoeuve checks in accordance with regulatory requirements and manufacturers procedures
- Procedures and techniques for turning of an aeroplane steeply
- Procedures and techniques for sideslipping of an aeroplane
- Procedures and techniques for short take-offs and landings
- Windsock and other indicators that are used to determine wind velocity
- Local and published noise abatement requirements and curfews

Required skills:

- Recognise flight situations which may require advanced manoeuvres and procedures, and apply the necessary techniques
- Compensate for the secondary effects of controls
- Conduct a steep turn
- Sideslip an aeroplane
- Complete short take-offs and landings
- Monitoring functions of fuel systems

REQUIRED KNOWLEDGE AND SKILLS

- Maintain compliance with regulatory requirements
- Select and use relevant equipment during the execution of advanced aeroplane manoeuvres and procedures
- Use instruments to monitor aeroplane performance
- Communicate effectively with others when executing advanced aeroplane manoeuvres and procedures
- Read and interpret instructions, regulations, procedures and other information relevant to the execution of advanced aeroplane manoeuvres and procedures
- Interpret and follow operational instructions and prioritise workload
- Complete documentation related to advanced aeroplane manoeuvres and procedures
- Operate electronic communication equipment to required protocol
- Work collaboratively with others when executing advanced aeroplane manoeuvres and procedures
- 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 executing advanced aeroplane manoeuvres and procedures in accordance with regulatory requirements and workplace procedures
- Implement contingency plans for unexpected events that may arise when executing advanced aeroplane manoeuvres and procedures
- Apply precautions and required action to minimise, control or eliminate hazards that may exist during advanced aeroplane manoeuvres and procedures
- 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
- Pre-maneuvre checks are performed in accordance with regulatory requirements and manufacturers procedures
- Identify and correctly use equipment required to conduct advanced aeroplane manoeuvres and procedures

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.

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|---|---|
| Tasks may be undertaken in: | <ul style="list-style-type: none">• variable weather conditions in accordance with Day Visual Flight Rules |
| Performance may be demonstrated in: | <ul style="list-style-type: none">• 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: | <ul style="list-style-type: none">• 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• a suitable means of simulating instrument flight conditions |
| Aeroplane may include: | <ul style="list-style-type: none">• fixed wing• other commercial or military aircraft |
| Crew may include: | <ul style="list-style-type: none">• single pilot• multi crew |
| Instruments may be: | <ul style="list-style-type: none">• fitted flight instruments• head up displays |
| Limitations may be imposed by: | <ul style="list-style-type: none">• local noise abatement requirements and curfews |
| Classes of airspace may be: | <ul style="list-style-type: none">• as designated by the regulator• restricted and danger areas• military control zones• Air Defence Identification Zones |
| Advanced procedures may include: | <ul style="list-style-type: none">• turning an aeroplane steeply• sideslipping the aeroplane• executing short take-offs• executing short landings |
| Runways may include: | <ul style="list-style-type: none">• sealed• gravel• grass |
| Steep turns may include: | <ul style="list-style-type: none">• collision avoidance• max-rate |

RANGE STATEMENT

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 including Day Visual Flight Rules (Day VFR)
- in ADF 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)
- 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
- in ADF context, 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
 - 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