



Australian Government

AVIY0040 Apply aeronautical knowledge to aviation operations

Release: 1

AVIY0040 Apply aeronautical knowledge to aviation 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 apply aeronautical knowledge to aviation operations in compliance with relevant regulatory requirements of the Civil Aviation Safety Authority (CASA) and national operating standards.

It includes utilising aviation terminology, demonstrating knowledge of basic aircraft power plants and systems, and applying aerodynamic theory. It also includes applying knowledge of aviation navigation charts, aircraft operations, and performance and planning factors.

This unit addresses aviation technical skill requirements (physical, mental and task-management abilities) related to aircraft operational duties of flight crew and contributes to safe and effective performance in complex aviation operational environments.

Operations are conducted as part of recreational, 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

Y – Aircraft Operation 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.

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| 1 Utilise aviation terminology | 1.1 Standard aeronautical terminology and phraseology is used to explain aviation operations |
| | 1.2 Flight direction is correctly explained using accepted units of measure and direction |
| | 1.3 Flight speed, distance and velocity terms are correctly outlined |
| | 1.4 Aviation units of measure are utilised during aviation operations |
| 2 Apply knowledge of basic aircraft power plants and systems | 2.1 Piston engine aircraft operating principles are explained |
| | 2.2 Operator knowledge of aviation fuels and oils usage is applied |
| | 2.3 Engine handling techniques and operating limitations are implemented |
| | 2.4 Aircraft system component malfunctions/failures and associated system warnings, cautions and indications are correctly outlined |
| | 2.5 Aircraft flight instruments are identified and their purpose explained |
| 3 Apply basic aerodynamic theory | 3.1 Basic aircraft operational states are explained in terms of kinetic and potential energy terms |
| | 3.2 Standard aerodynamic terminology and phraseology is used to describe aviation operations |
| | 3.3 Wake turbulence and associated aircraft operational effects are explained |
| | 3.4 Thrust stream turbulence, including jet blast and rotor downwash hazards to flight operations, are identified |
| 4 Apply knowledge of aviation navigation charts | 4.1 Visual chart types and major chart features displayed are explained |
| | 4.2 Controlled airspace (CTA), prohibited, restricted and danger (PRD) areas are identified on appropriate visual |

	charts
	4.3 Appropriate PRD data is determined and extracted for use in aviation navigation planning
	4.4 Runway information and operational limitations data is extracted from en route supplements for use in aviation navigation planning
5 Apply knowledge of aircraft operations, performance and planning	5.1 Aircraft airworthiness requirements and certification documentation are identified and correctly compiled
	5.2 Aircraft take-off and landing performance data is extracted from authorised sources and is correctly used during aircraft performance planning
	5.3 Aircraft weight and balance planning factors are correctly outlined and used during aircraft loading calculations

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

This unit replaces and is equivalent to AVIY0008 Apply aeronautical knowledge to aviation operations.

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 AVIY0040 Apply aeronautical knowledge to aviation operations

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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:

- applying basic aerodynamic theory
- applying knowledge of aircraft operations, performance and planning
- applying knowledge of aviation navigation charts
- applying knowledge of basic aircraft power plants and systems
- applying relevant aeronautical knowledge
- reading, interpreting and following relevant regulations, instructions, procedures, information and signs
- utilising aviation terminology.

Knowledge Evidence

Evidence required to demonstrate competence in this unit must be relevant to and satisfy all of the requirements of the elements, performance criteria and range of conditions and include knowledge of:

- aircraft operations, performance and planning
- basic aerodynamic theory
- aviation navigation charts
- aviation terminology
- basic aircraft power plants and systems
- Civil Aviation Safety Regulation (CASR) Part 61 Manual of Standards (MOS) Schedule 3 Aeronautical Knowledge relevant to aeroplane or helicopter operations
- general flight planning and performance, including:
 - density height
 - take-off and landing performance
 - climb, cruise and descent performance
 - weight and balance
 - loading limitations and terminology
 - speed limitations and terminology
 - en route supplement information relevant to day visual flight rules VFR operations

- flight plan preparation, including:
 - flight planning
 - equi-time point (ETP)
 - point of no return (PNR)
 - diversions.

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 personal protective equipment (PPE) currently used in industry.

Links

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