



Australian Government

AVIY5024 Operate aircraft in the traffic pattern at night

Release: 1

AVIY5024 Operate aircraft in the traffic pattern at night

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 application of skills and knowledge required to operate an aircraft in the traffic pattern at night, in compliance with relevant regulatory requirements of the Civil Aviation Safety Authority and national operating standards.

It includes controlling aircraft on the ground, activating pilot activated lighting (PAL) and taking off at night. It also includes managing emergency situations at night, performing a go-around, and landing at night, with and without the use of aircraft landing lights.

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.

Use for Defence Aviation is to be in accordance with relevant Defence Orders, Instructions, Publications and Regulations.

Pre-requisite Unit

Not applicable.

Competency Field

Y – Aircraft Operation and Traffic Management

Unit Sector

Not applicable.

Elements and Performance Criteria

ELEMENTS

Elements describe the essential outcomes.

PERFORMANCE CRITERIA

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

1 Control aircraft on the ground	1.1	Instrument and cockpit lighting are adjusted to an appropriate level for taxiing
	1.2	Air traffic control (ATC) instructions and manoeuvres of an aircraft on the ground at night within the approved movement area as defined by aerodrome ground lighting, are complied with
	1.3	Aircraft lighting to identify obstructions, other aircraft, and taxiway and runway limits is used as required
	1.4	Aircraft is taxied at a speed that allows for an adequate lookout to be maintained to avoid obstructions
2 Activate pilot activated lighting	2.1	Appropriate radiotelephone frequency is utilised to activate PAL system when within radio range
	2.2	PAL system is activated using appropriate transmit sequence
	2.3	Wind indicator lighting is monitored to determine end of activation period
3 Take off at night	3.1	Aircraft is lined up correctly in centre of runway in take-off direction
	3.2	Line up checks appropriate to night take-off are completed
	3.3	Take-off by reference to flare path/runway lighting and aircraft instruments is executed
	3.4	Aircraft is rotated at manufacturer recommended speed
	3.5	Aircraft control and climb attitude is completed solely by reference to instruments
	3.6	Alignment with runway by visual reference and lookout is established and maintained
	3.7	Post-departure checks are performed at a safe height after take-off
4 Manage emergency situations at night	4.1	Control of aircraft flight path is maintained during implementation of emergency response procedures

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| | 4.2 | Emergency situation is managed in accordance with the aircraft flight manual (AFM), pilot's operating handbook (POH) and aeronautical information publication (AIP) |
| | 4.3 | Electrical lighting and power sources are monitored |
| | 4.4 | Electrical lighting and power source emergency procedures are implemented as required |
| 5 Perform a go-around | 5.1 | Need to conduct a go-around is recognised |
| | 5.2 | Go-around is performed from any point on base and final approach legs |
| 6 Land at night, with and without the use of aircraft landing lights | 6.1 | Circuit entry and pattern are performed with reference to runway environment |
| | 6.2 | Safe altitude is maintained by reference to aircraft instruments and runway lighting |
| | 6.3 | Aircraft is safely landed at night with and without landing lights |
| | 6.4 | After landing checks are performed |

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 is equivalent to AVIY5024A Operate aircraft in the traffic pattern at night.

Links

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=4725260a-0af3-4daf-912b-ef1c2f3e5816>

Assessment Requirements for AVIY5024 Operate aircraft in the traffic pattern at night

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 and operating environment in accordance with standard operating procedures
- applying precautions and required action to minimise, control or eliminate identified hazards
- applying relevant aeronautical knowledge
- applying relevant legislation and workplace procedures
- communicating effectively with others
- completing relevant documentation
- identifying and correctly using equipment required while operating an aircraft in the traffic pattern at night
- implementing contingency plans
- implementing work health and safety (WHS)/occupational health and safety (OHS) procedures and relevant regulations
- interpreting and following operational instructions and prioritise work
- modifying activities depending on workplace contingencies, situations and environments
- monitoring and anticipating operational problems and hazards and taking appropriate action
- monitoring work activities in terms of planned schedule
- operating electronic communications equipment to required protocol
- reading, interpreting and following relevant regulations, instructions, procedures, information and signs
- reporting and/or rectifying identified problems promptly, in accordance with regulatory requirements and workplace procedures
- selecting and using required personal protective clothing and equipment conforming to industry and WHS/OHS standards
- setting local or area barometric pressure adjusted for sea level (QNH) at appropriate stages of flight
- utilising fault finding for system failures
- utilising secondary lighting and power sources
- working collaboratively with others
- 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:

- CASR Part 61 Manual of Standards Schedule 3 Aeronautical Knowledge relevant to night visual flight operations
- causes that may aggravate vestibular disorientation:
 - somatogravic illusions
 - somatogyral illusions and ‘graveyard spiral’
 - coriolis effect
 - leans
- circumstances that aggravate vestibular disorientation and how to overcome them
- colours and patterns of aerodrome lighting:
 - permanent threshold light
 - runway threshold identifications lights
 - displaced threshold lighting
 - runway edge lighting
 - runway end lighting
 - runway centreline lighting
 - obstacle lighting
- communications equipment checks
- conditions and causes under which the following visual illusions may occur:
 - false horizons
 - visual-cue illusions
 - relative motion illusions
 - flicker effect
 - black hole illusion
 - autokinesis
- electrical system management as recommended in the applicable aircraft flight manual (AFM)/pilot’s operating handbook (POH)
- fuel tank capacity and range
- human factors and physiological limitations for conducting operations at night
- identification of aerodromes with standby power
- light signals used in the circuit area at night
- method of activating an aerodrome frequency response unit (AFRU) with PAL options
- method of activating pilot activated lighting (PAL)
- night circuit procedures

- night visual flight rules (NVFR) legislation:
 - privileges and limitations of the rating
 - minimum NVFR aircraft equipment requirements
 - ALA/HLS dimension and lighting requirements
- NVFR operations:
 - principles of operations, limitations and errors for the radio navigation systems used
 - flight planning/notification requirements, including lower safe altitude (LSALT), weather, fuel and lighting
 - requirements for departure and descent for clearance from terrain
 - alternate aerodrome planning requirements
 - operation of PAL
 - air traffic control (ATC) procedures relevant to NVFR operations
- operation and use of a visual approach slope indicator (VASI) and pilot approach path indicator (PAPI) system
- PAL system warning indications that lights are about to be extinguished
- procedures for operating electronic communications equipment
- requirements for completing relevant documentation
- time that PAL remains illuminated
- vestibular systems, namely the semicircular canals and otoliths, in helping the pilot maintain orientation.

Assessment Conditions

As a minimum, assessors must satisfy applicable regulatory requirements, which include requirements in the *Standards for Registered Training Organisations* current at the time of assessment.

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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.

Assessment must occur in workplace operational situations. Where this is not appropriate, assessment must occur in simulated workplace operational situations that reflect workplace conditions.

For aircraft in the helicopter category, taking off at night requires the following additional assessment:

- accelerating helicopter in take-off direction on a prescribed track
- recognising and controlling translational lift
- executing take-off by reference to flare path/runway lighting or helicopter landing site (HLS)

lighting and aircraft instruments

- applying climb power and adjusting aircraft attitude to maintain climb speed appropriate to obstacle clearance requirements
- aligning helicopter landing gear with planned take-off direction until point at which balanced flight is required
- retracting undercarriage at a safe height and airspeed
- trimming and balancing helicopter.

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 currently used in industry.

Links

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