Australian Government

Department of Education, Employment and Workplace Relations

AVIY5022B Manage traffic flow

Revision Number: 1

AVIY5022B Manage traffic flow

Modification History

Not applicable.

Unit Descriptor

Unit Descriptor	This unit involves the skills and knowledge required to work as part of a team and to conduct traffic sequencing and regulate traffic flow. This includes providing major delaying actions and minor flow adjustments to achieve the necessary spacing and order, and responding to changing conditions. Licensing, legislative, regulatory or certification requirements are applicable to this unit.

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Application of the Unit

Application of the Unit

This unit has application for air traffic control operators. In addition to separating airspace users, a safe, efficient and regular traffic flow is required to enable the effective use of aerodrome terminal facilities such as runways and taxiways.

Work must be carried out in compliance with the relevant air traffic services regulatory requirements of the Civil Aviation Safety Authority and national operating standards.

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

Work is performed under various levels of supervision dependent on workplace context, and in a team environment.

Traffic flow is managed using automated systems or by manual determination. If automated systems are used, human reasoning should be applied to ensure safety and the most suitable flow of traffic particularly in times of adverse weather and/or emergency and abnormal flight operations.

The controller must demonstrate an ability to establish traffic sequences, regulate traffic flow, and regulate workload in situations involving medium to high levels of traffic volume and complexity, and in adverse weather.

This unit of competency is packaged at Diploma level.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Not applicable.

Employability Skills Information

Employability Skills

This unit contains employability skills.

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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.

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Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1 Establish traffic sequence	1.1 Traffic order is established in accordance with runway mode and airspace configuration
	1.2 Automated and/or manually determined traffic sequence is observed and monitored and adjustments to traffic flow are made accordingly
	1.3 Traffic flow is adjusted in accordance with standard operating procedure when airways facilities are reduced and/or systems are in degraded mode
	1.4 Scan is maintained in area of jurisdiction at a rate determined by environmental factors
2 Provide major delaying actions	2.1 Aircraft are held in published holding patterns in accordance with standard operating procedure
	2.2 Aircraft are held outside published holding patterns in accordance with standard operating procedure
	2.3 Air traffic clearances are withheld or instructions are imposed to achieve the necessary delay
	2.4 Limits are imposed on air traffic clearances when necessary
	2.5 Major delaying actions are cancelled or relaxed when able and instructions are issued for onwards flight
3 Provide minor flow adjustments	3.1 Aircraft speeds are varied in accordance with standard operating procedure and control techniques to achieve the necessary traffic flow
	3.2 Aircraft route, track and/or heading is adjusted in accordance with standard operating procedure and control techniques to achieve the necessary traffic flow
	3.3 Conditions are imposed on air traffic clearances when necessary
	3.4 Minor flow adjustments are cancelled or relaxed when able
4 Regulate traffic flow	4.1 Instructions issued to regulate traffic flow always maintain safety
	4.2 Acceptable traffic flow for the given situation is achieved
5 Respond to changing conditions	5.1 Action in response to changing conditions always maintains safety
	5.2 Action to respond to changing conditions is completed in a satisfactory timeframe

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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
- Relevant OH&S and environmental procedures and regulations
- Principles of air traffic control
- Aircraft holding patterns published on charts and maps including sector entries
- Non-published aircraft holding techniques
- Air traffic clearances to hold, delay, limit and continue flight
- Methods used to adjust route, track, heading and speed of aircraft
- Conditional air traffic clearance
- Aircraft sequencing and spacing techniques and practices
- Techniques to adjust the flow of aircraft traffic during reduced facilities or when using degraded systems
- Aircraft performance characteristics and considerations while holding; varying the routing, tracking and heading of aircraft; and considerations while varying the speed of aircraft during climb, cruise and descent
- Airspace and route structures for holding and flow including feeder fixes
- Peak capacity for runway configurations including landing and departure rates; slot allocation; and factors affecting capacity including capped rates
- Systems and tools used for air traffic flow management including the Central Traffic Management System, Maestro and slot allocation
- Roles and responsibilities for managing the air traffic flow
- Aerodrome runway combinations and traffic requirements
- Capacity modelling for arriving traffic only, and arriving and departing traffic
- Airspace, route structures and procedures used to assist strategic air traffic flow management
- Sector/traffic hot spots
- Area of radar coverage
- Airspace geography and topography
- Classification and special use airspace
- Weather forecasting and aerodrome weather observations
- Relevant sections of the air traffic services procedures manual and local instructions
- Safety hazards and risks that exist when managing air traffic and related risk control procedures and precautions
- Problems that may occur when managing air traffic and appropriate action that should be taken in each case

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REQUIRED KNOWLEDGE AND SKILLS

Required skills:

- Communicate effectively with others when managing traffic flow
- Actively listen when managing traffic flow
- Read and interpret instructions, regulations, procedures and other information relevant to managing traffic flow
- Interpret and follow operational instructions and prioritise work
- Perceive incoming information associated with strategic, tactical, geographic, spatial, system and environment components of a complex system
- Comprehend incoming information and develop the current airspace and flight path model
- Complete documentation related to managing traffic flow
- Provide leadership and work collaboratively with others when managing traffic flow
- Communicate in a team by exchanging information through assigning responsibility, acknowledgment, inquiring, and by recognising and noting facts that create team rapport and enhance team outputs
- 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 traffic flow in accordance with regulatory requirements and workplace procedures
- Demonstrate temperament reflecting a calm, composed and cooperative characteristic and emotional response under challenging situations
- Make decisions related to the prioritising of tasks and the projection of and planning for traffic and environmental events
- Conduct aeronautical decision making
- Project and develop future airspace and flight path scenarios
- Maintain a strategic traffic management goal for the jurisdiction airspace
- Adhere to procedures through a series of steps followed in a regular definite order or a traditional or established way of doing things when this is required
- Implement contingency plans for unexpected events that may arise when managing traffic flow
- Judge and form an opinion or evaluate situations by discerning and comparing information
- React to some form of treatment or stressful situation by a considered and measured response in a timely fashion
- Apply precautions and required action to minimise, control or eliminate hazards that may exist when managing traffic flow
- 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

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REQUIRED KNOWLEDGE AND SKILLS

damage to goods or equipment

- Adapt to differences in equipment, systems and operating environment in accordance with standard operating procedures
- Be receptive to training for the skills, knowledge, or experiences acquired or gained over a career
- Implement OH&S procedures and relevant regulations
- Interpret airspace charts, maps and approach to land procedures associated with aircraft holding and flow procedures
- Formulate and issue onwards airways clearances, conditional clearances and clearance limits
- Maintain surveillance of airspaces and scanning techniques at the Human-machine Interface (HMI)
- Adjust the routing and tracking of aircraft
- Vary the heading of aircraft
- Vary the speed of aircraft and related speed control data
- Conduct the holding of aircraft and onwards processing
- Identify and use system tools and information to facilitate flow management
- Carry out runway mode change and consequent flow management
- Advise aircraft of delays by issuing set course time, stack departure time, estimated approach time and/or estimated time of landing
- Be confident but not complacent or reliant on automation and technology, and readily apply human reasoning to airspace and flight path scenarios
- Allocate attention according to demand and constantly switch between: managing the Human-machine Interface or equipment use; managing communications; and managing traffic

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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

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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.

Operations may be conducted:	• by day or night • in variable weather conditions
Performance may be demonstrated in:	• simulated situations • an operational air traffic control workplace
Air Traffic Flow Management (ATFM) is established:	• to support ATC in ensuring an optimum flow of air traffic to, from, through or within defined areas during times when demand or expected demand exceeds the capacity of the system. Managing the traffic flow in this unit of competency is part of a control service and is not a discrete ATFM service
Systems and tools include:	• Maestro flow management system • Central Traffic Management System (CTMS) • slot allocation system • capped capacity • capacity modelling and international benchmarking • en route airspace design, feeder fixes and terminal area route structure • airline - ATS agreed capacity as a key performance indicator
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 • regulatory standards and recommended practices
Information/documents may include:	• training curricula and syllabi • Civil Aviation Safety Authority (CASA) regulations and Manuals of Standards (MOS) • Local Instructions (LI) and Temporary Local Instructions (TLI) • equipment manufacturers specifications and instructions • Manual of Air Traffic Services (MATS) • Aeronautical Information Publication (AIP) • workplace procedures, instructions • Training Standards Manual (TSM) • ICAO Document 4444, ATM/501, Procedures for Air Navigation Services, Air Traffic Management

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RANGE STATEMENT

	• occupational specification for air traffic controllers • industrial certified agreements and awards • training and assessment records • operator s handbook and system manuals • documented learning and assessment strategies
Applicable regulations and legislation may include:	• International Civil Aviation Organization (ICAO) Standards and Recommended Practices (SARP) • Cvil Aviation Safety Regulations (CASR) and Manuals of Standards (MOS) • relevant Defence Orders and Instructions • Airservices Act (Cth) 1995 • OH&S Legislation (state and federal) • Civil Aviation Act (Cth) 1988 and the Civil Aviation Amendment Act 1995

Unit Sector(s)

Not applicable.

Competency field

Competency Field Y - Aircraft Operation and Traffic Management

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