

Title	Demonstrate knowledge of, and apply, principles of human performance in air traffic services		
Level	5	Credits	12

Purpose	<p>People credited with this unit standard are able to: demonstrate knowledge of the concepts and principles involved in aviation human performance as they relate to air traffic services; demonstrate knowledge of information processing and decision-making in the context of an ultra safe industry; demonstrate knowledge of situational awareness in an air traffic services environment; demonstrate knowledge of principles of, and the threats to, effective communication in air traffic services; describe the causes of stress, symptoms of personal stress, and stress management techniques for air traffic services; demonstrate knowledge of the principal theories behind Threat and Error Management and apply skill-based tools as countermeasures; explain principles of effective teamwork in an air traffic services environment; and explain the impact of the physical environment on human performance in an air traffic services environment.</p>
----------------	--

Classification	Aviation > Air Traffic Services
-----------------------	---------------------------------

Available grade	Achieved
------------------------	----------

Guidance Information

- 1 The Civil Aviation Act 1990 and Civil Aviation Rule Part 65 detail the legislative requirements in relation to this unit standard. This unit standard is aligned to the Civil Aviation Act 1990, Civil Aviation Rule Part 65, which reflects International Civil Aviation Organisation (ICAO) Standards and Recommended Practices as adopted by New Zealand. This unit standard is also aligned to the associated Civil Aviation Advisory Circular (AC) 65 series containing the syllabus for Air Traffic Services Personnel Licences and Ratings, and Part 65.103(a)(5)(iv), Part 65.303(a)(2), and Part 65.203(a)(4)(iv). Information relating to Civil Aviation Authority of New Zealand (CAA of NZ) Rules can be obtained from the CAA of NZ website on <http://www.caa.govt.nz/>.
- 2 Evidence presented for assessment against this unit standard must be in accordance with standard industry texts.

- 3 *Standard industry texts* include but are not limited to:
State approved documentation,
air traffic services (ATS) provider exposition,
aerodrome emergency plans,
published aviation training manuals or textbooks (including electronic resources).
- 4 Resource
Reason, J, (1991), *Human Error*, Cambridge University Press.
- 5 Definitions
Human performance refers to human performance and human limitations both in the air and on the ground. It encompasses the medical, psychological, and ergonomic aspects and is aligned to CAA of NZ terminology.
The *SHEL model* means: Software/Hardware/Environment/Liveware.
Ultra safe industry refers to the concept formulated and discussed by Prof. James Reason.

Outcomes and performance criteria

Outcome 1

Demonstrate knowledge of the concepts and principles involved in aviation human performance as they relate to air traffic services.

Performance criteria

- 1.1 The term 'human performance', including underlying principles, is explained.
- 1.2 Human factor conceptual models are described in terms of their imitations and advantages.
- Range may include but is not limited to – SHEL model, Reason's model.

Outcome 2

Demonstrate knowledge of information processing and decision-making in the context of an ultra safe industry.

Performance criteria

- 2.1 Information processing is explained.
- Range explanation should include – perception processes, basic physiology of sensors, attention, memory, barriers to information gathering and pattern recognition.
- 2.2 Decision-making is explained and applied.
- 2.3 Threats to decision-making are identified and mitigated using examples.

Outcome 3

Demonstrate knowledge of situational awareness in an air traffic services environment.

Performance criteria

3.1 Situational awareness is defined, and explained in accordance with industry texts and standards.

Range may include but is not limited to – airspace, weather, terrain, pilotage, flight processing system, aircraft performance, interpersonal factors.

Outcome 4

Demonstrate knowledge of principles of, and the threats to, effective communication in air traffic services.

Performance criteria

4.1 Perception in communication and the process of communication in an air traffic services environment are explained.

4.2 Effective communication principles are described.

Range questioning, active listening, understanding, delivery.

4.3 Barriers to communication in air traffic services are described in terms of the SHELL model.

Outcome 5

Describe the causes of stress, symptoms of personal stress, and stress management techniques for air traffic services.

Performance criteria

5.1 The causes and effects of stress are described.

Range physiological, emotional, environmental.

5.2 Sources of personal stress are identified and described.

5.3 Practical approaches for reducing stress are identified.

Range may include but is not limited to – time management, problem solving, talking to others, learning assertiveness skills, personal development training, balanced diet, relaxation techniques, daily physical exercise, breathing exercises.

Outcome 6

Demonstrate knowledge of the principal theories behind Threat and Error Management and apply skill-based tools as countermeasures.

Performance criteria

- 6.1 Threat and Error Management is defined and described.
- 6.2 Countermeasures based on Threat and Error Management models are described.
- Range decision-making models, Team Resource Management, avoidance trapping and mitigating error, information processing influenced by cognitive processes.
- 6.3 Threat and Error Management, both within a team environment and individually, is applied to recognised incidents and accidents.

Outcome 7

Explain principles of effective teamwork in an air traffic services environment.

Performance criteria

- 7.1 Teamwork in an air traffic services environment is defined and described.
- Range may include but not is limited to – team communication, group meeting structure, group formation steps, opportunity to contribute, preparation, listening skills, accepting responsibility, meeting deadlines, carrying out actions, achieving outcomes, record keeping, behaviour norms.
- 7.2 The need for Team Resource Management countermeasures to become an integral part of operating practice is explained using examples.

Outcome 8

Explain the impact of the physical environment on human performance in an air traffic services environment.

Performance criteria

- 8.1 Ergonomics in an air traffic services environment is defined and described.
- 8.2 Measures to control the impact of the physical environment on human performance are explained.
- Range may include but is not limited to – noise, illumination, climate and temperature.

Replacement information	This unit standard replaced unit standard 23465.
--------------------------------	--

Planned review date	31 December 2027
----------------------------	------------------

Status information and last date for assessment for superseded versions

Process	Version	Date	Last Date for Assessment
Registration	1	21 November 2013	31 December 2026
Review	2	30 March 2023	N/A

Consent and Moderation Requirements (CMR) reference	0028
--	------

This CMR can be accessed at <http://www.nzqa.govt.nz/framework/search/index.do>.

Comments on this unit standard

Please contact Ringa Hora Services Workforce Development Council qualifications@ringahora.nz if you wish to suggest changes to the content of this unit standard.