

<b>Title</b>	<b>Demonstrate knowledge of human performance in aeronautical engineering</b>		
<b>Level</b>	<b>3</b>	<b>Credits</b>	<b>5</b>

<b>Purpose</b>	<p>This is an entry level skills unit standard for people entering the aeronautical engineering industry.</p> <p>People credited with this unit standard are able to describe: the role of human factors in aeronautical engineering accidents and incidents; physical and mental factors that affect human performance in aircraft maintenance work; social psychological issues that affect human performance in aircraft maintenance work; the effect of the work environment on human performance; and the causes and mitigation of human error in aircraft maintenance.</p>
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<b>Classification</b>	Aeronautical Engineering > Aeronautical Engineering - Core
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<b>Available grade</b>	Achieved
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### Guidance Information

Texts referred to or applicable to this unit standard include –  
 Prof James Reason, *Human Error* (Cambridge: Cambridge University Press, 1990);  
 The European Aviation Safety Agency publication CAP 716.

### Outcomes and performance criteria

#### Outcome 1

Describe the role of human factors in aeronautical engineering accidents and incidents.

#### Performance criteria

- 1.1 The influence of human error on aviation accidents and incidents is described in terms of history, growth and significance.
- 1.2 Accidents and incidents attributable to human error are described with reference to accident report findings.
- 1.3 Root causes of accidents and incidents are identified with reference to accident reports.

**Outcome 2**

Describe physical and mental factors that affect human performance in aircraft maintenance work.

**Performance criteria**

- 2.1 Human eyes and ears are described in terms of their major parts and functions.
- 2.2 The human brain is described in terms of its response to stimuli and processing of data.
- 2.3 Human medical conditions are described in terms of their effect on people's ability to perform aircraft maintenance tasks.
- 2.4 Physical and mental factors are described in terms of their effect on the ability to perform aircraft maintenance tasks.

**Outcome 3**

Describe social psychological issues that affect human performance in aircraft maintenance work.

**Performance criteria**

- 3.1 Factors effecting how humans' function within a group are described in terms of performance at work.
- 3.2 The term 'dirty dozen' is described in terms of industry texts and its relevance to aircraft maintenance work.
- 3.3 Principles of communication are described in terms of their importance and effect on aircraft maintenance activities.

**Outcome 4**

Describe the effect of the work environment on human performance.

**Performance criteria**

- 4.1 Work environment is described in terms of its effect on human performance.
- 4.2 The nature of work tasks is described in terms of its effect on human performance.
- 4.3 Organisational structure is described in terms of its effect on human performance.

**Outcome 5**

Describe the causes and mitigation of human error in aircraft maintenance.

**Performance criteria**

- 5.1 Murphy's law is described in terms of its applicability to aircraft maintenance tasks.
- 5.2 Human error models are described in terms of their use in aeronautical engineering.
- 5.3 Defence mechanisms used in aircraft maintenance are described in terms of the human error models used in aviation.

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<b>Planned review date</b>	31 December 2027
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**Last date for assessment for superseded versions**

Process	Version	Date	Last Date for Assessment
Registration	1	19 September 2013	31 December 2021
Review	2	26 March 2020	N/A
Rollover and Revision	3	26 April 2024	N/A

<b>Consent and Moderation Requirements (CMR) reference</b>	0028
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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](mailto:qualifications@ringahora.nz) if you wish to suggest changes to the content of this unit standard.