Title	**Demonstrate knowledge of aeronautical decision making in an aviation enterprise**		
Level	**4**	**Credits**	**5**

Purpose	This unit standard is intended for roles in an aviation workplace which may include air traffic controllers, aircraft and aeronautical engineers, aircraft cleaners, aircraft loaders, airport workers, avionics technicians and mechanics, flight attendants, flight instructors, ground crew, pilots, and aviation regulators. People credited with this unit standard are able to demonstrate knowledge of: information processing that leads to effective decision making; and the barriers to effective decision making for a selected aviation workplace. They are also able to apply the aeronautical decision-making process to a specific aviation workplace situation.

Classification	Aviation > Aviation - Core

Available grade	Achieved

Guidance Information

1 Resources – may include but are not limited to –
Ewing, R. (2008). *Aviation Medicine and other Human Factors for Pilots*. (6th ed.). Christchurch, NZ: Old Sausage Publishers Limited;
Green, R.G., Muir, H., James, M., Gradwell, D., & Green, R.L. (1996). *Human Factors for Pilots*. (2nd ed.). Aldershot, UK: Ashgate;
Hawkins, F.H., & Orlady, H.W. (Ed.). (1993). *Human Factors in Flight*. (2nd ed.). Aldershot, UK: Ashgate;
Tsang, P.S. & Vidulich, M.A. (Eds.). (2003). *Principles and Practice of Aviation Psychology*. Mahwah, NJ: Lawrence Erlbaum Associates.

2 Definitions
Aeronautical Decision Making (ADM) means a rational process of decision making in aviation environments that is systematic and takes into account relevant mental processes and human emotions. The decision maker has clear objectives, considers the environment in which the decision will be made (situation), generates a list of alternatives (options), evaluates and compares the related risks, makes and then implements the decision, but continues to monitor and review the situation and options.
Aviation workplace means any organisation involved in aviation activities or support activities.

D.E.C.I.D.E. – a model of aeronautical decision making:

- Detect the fact that a change has occurred.
- Estimate the need to counter or react to the change.
- Choose a successful outcome.
- Identify actions that could successfully control the change.
- Do the necessary action to adapt to the change.
- Evaluate the effect of the action.

Hazardous attitudes means the five attitudes or personal motivational predispositions, as developed at the Embry-Riddle Aeronautical University USA, which are risk-taking behaviours that can interfere with effective decision making. The five attitudes are anti-authority, invulnerability, impulsivity, macho, and resignation.

Naturalistic Decision Making (NDM) is a style of intuitive decision making. Naturalistic decision making describes how experienced people make decisions in dynamic, naturalistic environments, under conditions of time pressure, shifting goals, unclear information, and high risk.

Outcomes and performance criteria

Outcome 1

Demonstrate knowledge of information processing that leads to effective decision making in a selected aviation workplace.

Performance criteria

1.1 Information processing during the decision-making process is described in accordance with resources.

Range includes but is not limited to – sensory register, working short-term memory, long-term memory.

1.2 ADM is described in accordance with the D.E.C.I.D.E. model.

1.3 NDM is described and compared with ADM in accordance with resources.

1.4 Factors that have a negative impact on information processing in aviation are described in accordance with resources.

Range must include but is not limited to – alcohol and drug impairment, poor communication, distraction, fatigue, illness, medication, poor nutrition, stress.

Outcome 2

Demonstrate knowledge of the barriers to effective decision making for a selected aviation workplace.

Performance criteria

2.1 Barriers to effective decision making in aviation and how to manage them are described.

Range must include but is not limited to – confirmation bias, entrapment, heuristics, limitations of attention, cue salience, mindset, satisficing.

2.2 Hazardous attitudes in aviation and how to manage them during the decision-making process are described.

Outcome 3

Apply the aeronautical decision-making process to a specific aviation workplace situation.

Performance criteria

3.1 The ADM process is applied to a decision in a specific aviation workplace situation in accordance with the D.E.C.I.D.E. model.

Planned review date	31 December 2025

Status information and last date for assessment for superseded versions

Process	Version	Date	Last Date for Assessment
Registration	1	20 March 2008	31 December 2020
Review	2	26 April 2018	N/A
Rollover and Revision	3	25 May 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.