

Title	Demonstrate knowledge of materials and hardware for aeronautical engineering (EASA 147 Maintenance)		
Level	5	Credits	30

Purpose	<p>This knowledge-based unit standard is one of a series intended for people under training to gain authorisation to certify, to European Aviation Safety Agency (EASA) standards, the release to service of aircraft or aeronautical components following maintenance or repair.</p> <p>People credited with this unit standard are able to demonstrate knowledge of materials and hardware for aeronautical engineering (EASA 147 Maintenance).</p>
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Classification	Aeronautical Engineering > Aeronautical Maintenance Certification
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Available grade	Achieved
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Guidance Information

- 1 This unit standard is aligned with the European Aviation Safety Agency Examination Standard for *Module 6 Materials and Hardware* and will be evidenced by meeting these requirements. This can be located through the EASA website at <http://www.easa.europa.eu>.
- 2 *Knowledge* – will be in the context of aeronautical maintenance as defined by European Commission Regulation (EU) No 1321/2014 as follows: ‘A detailed knowledge of the theoretical and practical aspects of the subject and a capacity to combine and apply the separate elements of knowledge in a logical and comprehensive manner’; will include making judgements regarding the scope, processes, and quality of maintenance for release to service certification; and will be in accordance with industry texts as defined by the candidate’s workplace or enterprise.
- 3 *Industry texts* include but are not limited to –
published aeronautical training manuals or text books;
enterprise exposition;
manufacturer publications;
government and local body legislation;
airworthiness or regulatory authority requirements.

Outcomes and performance criteria

Outcome 1

Demonstrate knowledge of materials and hardware for aeronautical engineering (EASA 147 Maintenance).

Performance criteria

- 1.1 Aircraft materials are described and their applications are explained.
- Range may include but is not limited to – ferrous materials, non-ferrous materials, composite non-metallic materials, corrosion.
- 1.2 Aircraft fasteners are described and their applications are explained.
- Range may include but is not limited to – screw threads, bolts, nuts, studs, locking devices, aircraft rivets.
- 1.3 Pipes and unions are described and their applications are explained.
- Range may include but is not limited to – rigid and flexible pipes, standard unions.
- 1.4 Springs and bearings are described and their applications are explained.
- Range springs may include but are not limited to – types, materials, characteristics, applications;
bearings may include but are not limited to – purpose, loads, material, construction, types, applications.
- 1.5 Transmissions are described and their operations are explained.
- Range may include but is not limited to – gear types and applications; gear ratios, gear systems, driven and driving gears, idler gears, mesh pattern; belts, pulleys, chains, sprockets.
- 1.6 Control cables are described and their applications are explained.
- Range may include but is not limited to – types of cable, end fittings, turnbuckles, compensation drives, pulleys, cable system components, Bowden cables, aircraft flexible control systems.
- 1.7 Electrical cables and connectors are described and their applications are explained.
- Range may include but is not limited to – cable types, cable construction, cable characteristics; high tension cables, coaxial cables; crimping; connector types may include but are not limited to – pins, plugs, sockets, insulators, current rating, voltage rating, coupling, identification codes.

Planned review date	31 December 2027
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Status information and last date for assessment for superseded versions

Process	Version	Date	Last Date for Assessment
Registration	1	16 August 2012	31 December 2020
Review	2	28 September 2017	31 December 2024
Review	3	27 October 2022	N/A

Consent and Moderation Requirements (CMR) reference	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 if you wish to suggest changes to the content of this unit standard.