Title	**Demonstrate knowledge of aircraft gas turbine powerplant maintenance practices**		
Level	**4**	**Credits**	**10**

Purpose	This is a knowledge-based unit standard for people pursuing standards in the aircraft powerplant maintenance domain. People credited with this unit standard are able to demonstrate knowledge of: aircraft propeller maintenance practices; aircraft gas turbine engine maintenance practices; aircraft auxiliary power unit maintenance practices; and aircraft gearbox and transmission maintenance practices.

Classification	Aeronautical Engineering > Aircraft Powerplant Maintenance

Available grade	Achieved

Guidance Information

1 All tasks must be carried out in accordance with the standards required by the aircraft or equipment manufacturer.

2 Standard practices referred to are those in the aviation industry, examples include Great Britain – Civil Aviation Authority, CAP 562: *Civil Aircraft Airworthiness Information and Procedures* (CAAIP) (London: TSO) and United States – Federal Aviation Administration, Advisory Circular 43.13-1B, *Acceptable Methods, Techniques, and Practices – Aircraft Inspection and Repair* (US Department of Transportation).

3 The scope of the system that this standard relates to is described in the applicable chapters of ATA iSpec 2200.

Outcomes and performance criteria

Outcome 1

Demonstrate knowledge of aircraft propeller maintenance practices.

Range fixed and variable pitch propellers.

Performance criteria

1.1 Propellers are described in terms of type, function, construction, and operating principles.

1.2 Propeller systems are described in terms of purpose, function, and operating principles.

Range controlling, braking, indicating, de-icing.

1.3 Propeller system components are described in terms of purpose, function, location, and operating principles.

1.4 Maintenance of propellers is described in terms of standard practices.

Range propellers include – propeller assemblies, propeller systems, propeller system components;
maintenance includes – inspection, troubleshooting, removal, installation, balancing, adjustment, testing; disassembly and reassembly of propellers for shipping.

1.5 Safety precautions are described in terms of their application to propeller and propeller system maintenance activities.

Outcome 2

Demonstrate knowledge of aircraft gas turbine engine maintenance practices.

Performance criteria

2.1 Gas turbine engines are described in terms of their construction, function, and operating principles.

2.2 Gas turbine engine systems are described in terms of purpose, function, and operating principles.

Range fuel, lubrication, fire protection, ignition, starting, engine controls, engine indicating, power restoration, thrust reverser.

2.3 Gas turbine engine system components are described in terms of purpose, function, and operating principles.

2.4 Maintenance of gas turbine engines is described in terms of standard practices.

Range gas turbine engines include – engine assemblies, engine systems, engine system components;
maintenance includes – inspection, troubleshooting, component removal and installation, adjustment, and testing.

2.5 Safety precautions for gas turbine engine maintenance activities are described in terms of standard practices.

Outcome 3

Demonstrate knowledge of aircraft auxiliary power unit maintenance practices.

Performance criteria

3.1 Auxiliary power units are described in terms of their purpose, function, construction, and operating principles.

3.2 Auxiliary power unit systems are described in terms of purpose, function, and operating principles.

Range fuel, lubrication, fire protection, ignition, starting, engine controls, engine indicating.

3.3 Auxiliary power unit system components are described in terms of purpose, function, and operating principles.

3.4 Maintenance of auxiliary power units and auxiliary power unit systems is described in terms of standard practices.

Range inspection, troubleshooting, component removal and installation, adjustment, testing.

3.5 Safety precautions for auxiliary power unit and auxiliary power unit system maintenance activities are described in terms of standard practices.

Outcome 4

Demonstrate knowledge of aircraft gearbox and transmission maintenance practices.

Performance criteria

4.1 Gearboxes and transmissions are described in terms of their purpose, construction, and operating principles.

4.2 Maintenance of gearboxes and transmissions is described in terms of standard practices.

Range for engine assemblies, engine systems, and engine system components;
maintenance includes – inspection, troubleshooting, component removal and installation, adjustment, and testing.

4.3 Safety precautions for gearbox and transmission maintenance activities are described in terms of standard practices.

Replacement information	This unit standard and unit standard 28142 replaced unit standard 7241.

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	18 June 2014	31 December 2021
Review	2	26 March 2020	N/A
Rollover and Revision	3	30 May 2024	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.