

Field Engineering and Technology**Review of *Aeronautical Engineering* unit standards**

Subfield	Domain	ID
Aeronautical Engineering	Aircraft Mechanical Maintenance	3926-3928, 7243, 7244, 20632, 20633
	Aircraft Mechanical Repair and Overhaul	3931, 3934, 3935, 3937-3942, 7242
	Aircraft Painting	4012-4015
	Aircraft Powerplant Maintenance	3401, 3404, 3407, 3411, 3413, 7241
	Aircraft Powerplant Repair and Overhaul	3402, 3414-3422, 3424, 7240, 20635-20637, 23160-23164
	Aircraft Servicing	3901-3904, 3906-3909, 3911-3915, 3917, 3929, 3930, 20629-20631, 20634, 23165-23167
	Aircraft Structures	4026, 4032, 4033, 4067-4073, 4075-4083, 23653
	Helicopter Maintenance	4050, 4060-4064, 22888, 22889
	Helicopter Repair and Overhaul	4053-4059, 17668, 17669

ServiceIQ has completed the review of the unit standards listed above.

Date new versions published

June 2014

Planned review date

December 2018

Summary

This is part two of the second stage of a review of all unit standards in the *Aeronautical Engineering* subfield. The review was undertaken in consultation with the aeronautical engineering industry as part of a scheduled review. Aircraft technology has become more sophisticated, and certain skills were not covered by existing unit standards. New unit standards were developed to cover these skills.

Main changes

- Outcomes, evidence requirements, range statements, explanatory notes and some titles were updated to reflect the needs of the aeronautical engineering industry and in line with international regulatory requirements.
- Standards 28136 and 28142 replaced standard 7241.
- Standards 28137 and 28143 replaced standard 7240.
- Standard 28138 was developed to fill a specialist area.
- Levels were changed to better reflect the content of the unit standards.
- Credits were changed to better reflect the time taken for learning and assessment.
- Standard setting body details were updated following the merging of the Aviation, Tourism and Travel Training Organisation and ServiceIQ.

The last date for assessment of superseded versions of these standards is 31 December

2016. Results will not be accepted where the assessment date is after the last date for assessment of the superseded version of the standard.

Category C unit standards will expire at the end of December 2018

Impact on existing organisations with consent to assess

Current consent for			Consent extended to		
Nature of consent	Classification or ID	Level	Nature of consent	Classification or ID	Level
Standard	7240	3	Standard	28137, 28143	4

Impact on Consent and Moderation Requirements (CMR)

None.

Impact on registered qualifications

Key to type of impact	
Affected	The qualification lists a reviewed classification (domain or subfield) in an elective set The qualification lists a standard that has changes to level or credits The qualification lists a C or D category standard
Not materially affected	The qualification lists a standard that has a new title The qualification lists a standard that has a new classification

The following ServiceIQ qualifications are impacted by the outcome of this review and will be updated when they are reviewed as part of the Targeted Review of Qualifications process. The standards that generated the status *Affected* are listed in **bold**.

Ref	Qualification Title	ID
0171	National Certificate in Aircraft Servicing	3901-3903, 3906-3909, 3911-3915, 3929, 3930, 4062, 20629-20631, 20633, 20634
0381	National Certificate in Aeronautical Engineering (Related Technology)	3906, 3907, 4072, 4078, 7240-7242
0742	National Certificate in Aeronautical Engineering (Aircraft Manufacture)	3901, 3903, 3908, 3911, 4012, 4026, 4032, 4033, 4067-4070, 4072, 4073, 4078-4080, 4081, 4083, 20633, 20634
1366	National Certificate in Aeronautical Engineering (Gas Turbine Overhaul)	3402, 3407 , 3411 3413, 3415, 3417-3419, 3421, 3422, 7240, 7241 , 20636, 20637, 23160-23164

Detailed list of unit standards – classification, title, level, and credits

All changes are in **bold**.

Key to review category	
A	Dates changed, but no other changes are made - the new version of the standard carries the same ID and a new version number
B	Changes made, but the overall outcome remains the same - the new version of the standard carries the same ID and a new version number
C	Major changes that necessitate the registration of a replacement standard with a new ID
D	Standard will expire and not be replaced

Engineering and Technology > Aeronautical Engineering > Aircraft Mechanical Maintenance

ID	Title	Level	Credit	Review Category
3926	Maintain aircraft in storage	3 4	6	B
3927	Maintain aircraft water and waste systems	4	8	B
3928	Maintain aircraft windows	3 4	4	B
7243	Demonstrate knowledge of aircraft mechanical system maintenance practices	3 4	12 15	B
7244	Demonstrate knowledge of electrical and electronic applications to aircraft mechanical systems	3	11 10	B
20632	Trestle or shore an aircraft	3 4	2 4	B
20633	Defuel aircraft	3 4	2 4	B

Engineering and Technology > Aeronautical Engineering > Aircraft Mechanical Repair and Overhaul

ID	Title	Level	Credit	Review Category
3931	Repair and/or overhaul aircraft oxygen system components	4	25	B
3934	Repair and/or overhaul aircraft liquid oxygen system components	4	25	B
3935	Repair and/or overhaul aircraft mechanical ice and rain protection system components	4	10	B
3937	Repair and/or overhaul aircraft mechanical air conditioning and pressurisation components	4	15	B
3938	Repair and/or overhaul aircraft fuel distribution system components	4	15	B
3939	Repair and/or overhaul aircraft landing gear system components	4	15	B
3940	Repair and/or overhaul aircraft pneumatic power supply system components	4	15	B
3941	Repair and/or overhaul aircraft water and waste system components	4	10	B
3942	Repair aircraft flexible fuel tanks Repair aircraft flexible fuel tank components	4	10	B

ID	Title	Level	Credit	Review Category
7242	Demonstrate knowledge of aircraft mechanical component repair and overhaul practices	3 4	8 10	B

Engineering and Technology > Aeronautical Engineering > Aircraft Painting

ID	Title	Level	Credit	Review Category
4012	Apply aeronautical decals	3 4	2 4	B
4013	Remove coating systems from aeronautical components by plastic media blasting Remove coatings from aircraft, aircraft components and aeronautical components by plastic media blasting	4	15 20	B
4014	Apply coating systems to aircraft and aeronautical equipment Apply coating systems by spraying method to aircraft, aircraft components and aeronautical equipment	4	25 35	B
4015	Remove coatings from aeronautical components using chemical paint removers Remove coatings from aircraft, aircraft components and aeronautical components by chemical paint removers	3 4	12 15	B

Engineering and Technology > Aeronautical Engineering > Aircraft Powerplant Maintenance

ID	Title	Level	Credit	Review Category
3401	Assemble aircraft propellers after shipment	4	3	B
3404	Maintain aircraft gas turbine auxiliary power units	4	15	B
3407	Maintain aircraft fire protection systems	4	4 5	B
3411	Maintain aircraft gas turbine engine power augmentation or restoration systems	4	4	B
3413	Maintain aircraft gas turbine powerplants	4	20	B
7241	Demonstrate knowledge of aircraft powerplant maintenance practices	3	6	C
28136	Demonstrate knowledge of aircraft gas turbine powerplant maintenance practices	4	10	
28142	Demonstrate knowledge of aircraft reciprocating powerplant maintenance practices	4	8	

Engineering and Technology > Aeronautical Engineering > Aircraft Powerplant Repair and Overhaul

ID	Title	Level	Credit	Review Category
3402	Balance aeronautical rotating assemblies	3	4	B

ID	Title	Level	Credit	Review Category
3414	Repair and/or overhaul aircraft fixed pitch propeller assemblies	4	12	B
3415	Repair and/or overhaul aircraft gas turbine engine fuel system components	4	12	B
3416	Repair and/or overhaul aircraft reciprocating engine fuel system components	4	12	B
3417	Repair and/or overhaul aircraft gas turbine engine fuel control units	4	12	B
3418	Repair and/or overhaul aircraft gearboxes and transmissions	4	15	B
3419	Repair and/or overhaul aircraft engine lubrication system components	4	8	B
3420	Repair and/or overhaul aircraft reciprocating engines	4	25	B
3421	Repair and/or overhaul aircraft gas turbine engine power augmentation or restoration system components	4	4	B
3422	Repair and/or overhaul aircraft gas turbine engine thrust reverser system components	4	4	B
3424	Repair and/or overhaul aircraft variable pitch propeller assemblies	4	20	B
7240	Demonstrate knowledge of aircraft powerplant repair and overhaul practices	3	6	C
28137	Demonstrate knowledge of aircraft gas turbine powerplant repair and overhaul practices	4	5	
28143	Demonstrate knowledge of aircraft reciprocating powerplant repair and overhaul practices	4	5	
20635	Test aircraft reciprocating powerplants on a test bed	5	6	B
20636	Test aircraft turbo-prop or turbo-shaft powerplants on a test bed	5	24	B
20637	Test aircraft turbo-fan or turbo-jet powerplants on a test bed	5	20	B
23160	Install, operate and remove aircraft powerplants from a test bed Install, operate, and remove aircraft powerplants from a test bed	4	8	B
23161	Repair and/or overhaul aircraft gas turbine compressor sections	4	20	B
23162	Repair and/or overhaul aircraft gas turbine combustion sections	4	20	B
23163	Repair and/or overhaul aircraft powerplant turbine sections	4	20	B
23164	Disassemble and assemble aircraft gas turbine engines	4	15	B

Engineering and Technology > Aeronautical Engineering > Aircraft Servicing

ID	Title	Level	Credit	Review Category
3901	Clean aircraft exterior surfaces	3 4	2 4	B
3902	Clean the gas path of aircraft gas turbine engines	3 4	2	B
3903	Clean aircraft interiors	3 4	2	B
3904	Compensate aircraft compasses	4	2	B
3906	Service fixed wing aircraft	3 4	4 6	B
3907	Carry out aircraft ground handling	3 4	4	B
3908	Replenish aircraft undercarriage oleos (shock struts)	3 4	2	B
3909	Replenish aircraft engine power augmentation or restoration systems	3 4	2	B
3911	Replenish aircraft hydraulic systems	3 4	2	B
3912	Replenish aircraft de-icing systems	3 4	2	B
3913	Replenish aircraft liquid oxygen systems	3 4	2	B
3914	Replenish aircraft gaseous oxygen systems	3 4	2	B
3915	Replenish aircraft pneumatic systems	3 4	2	B
3917	Transport aircraft	4	4	B
3929	Prepare aircraft for storage	3 4	8	B
3930	Remove aircraft from storage and prepare for service	3 4	4	B
20629	Replenish aircraft potable water systems	3 4	1 2	B
20630	Service aircraft toilet systems	3 4	2	B
20631	Lift and lower an aircraft	3 4	2 4	B
20634	Refuel aircraft	3 4	2 4	B
23165	Ground run propeller driven aircraft engines up to 300 horsepower (hp) or equivalent Ground run propeller driven aircraft engines up to 300 horsepower or equivalent	4	5	B
23166	Ground run propeller driven aircraft engines over 300 horsepower (hp) or equivalent Ground run propeller driven aircraft engines over 300 horsepower or equivalent	5	10	B
23167	Ground run turbo-jet or turbo-fan aircraft engines	5	10	B

Engineering and Technology > Aeronautical Engineering > Aircraft Structures

ID	Title	Level	Credit	Review Category
4026	Repair and fabricate aeronautical component parts by brazing and soldering	4	6	B
4032	Shape aeronautical component parts by punching	3 4	3	B
4033	Form aeronautical sheet metals by rolling	3 4	3	B
4067	Balance aircraft flight control surfaces	3 4	10	B
4068	Form aeronautical sheet aluminium alloys by slapping and beating	3 4	6	B
4069	Cold work holes in aeronautical aluminium alloys	3 4	4	B
4070	Shape aeronautical sheet metals by cutting	4	5 6	B
4071	Apply and/or repair aircraft external fabric coverings Apply and/or repair external fabric coverings over aircraft structures	4	15	B
4072	Fold aeronautical sheet metals	4	3 8	B
4073	Heat treat aeronautical metals and components	4	15	B
4075	Repair and/or modify aircraft metal structure Repair and/or modify an aircraft metal structure	4	15 20	B
4076	Repair and fabricate aeronautical wooden structural components	4	10 15	B
4077	Rig aircraft flying bracing wires	3 4	4	B
4078	Assemble aircraft metal components using fasteners	4	12	B
4079	Form aeronautical sheet metal items by rubber pressing	4	15	B
4080	Assemble aeronautical metal components by bonding	4	10	B
4081	Form aeronautical sheet metals by shrinking and stretching	3 4	8	B
4082	Repair aircraft plastic transparencies	4	10	B
4083	Form aeronautical sheet metals by wheeling	3 4	8	B
23653	Fabricate and repair aeronautical components by welding	4	42	B

Engineering and Technology > Aeronautical Engineering > Helicopter Maintenance

ID	Title	Level	Credit	Review Category
4050	Maintain helicopter belt-drive systems	4	4	B
4060	Maintain helicopter rescue winches	4	8	B
4061	Assemble and statically balance helicopter rotors	4	4	B

ID	Title	Level	Credit	Review Category
4062	Service a helicopter	3 4	4 6	B
4063	Track and dynamically balance helicopter main rotors	4	8 10	B
4064	Track and dynamically balance helicopter tail rotors	4	6 8	B
22888	Ground run helicopters	5	10	B
22889	Maintain helicopter emergency floatation systems	4	4 6	B
28138	Maintain helicopter gearboxes and/or transmissions	4	15	New

Engineering and Technology > Aeronautical Engineering > Helicopter Repair and Overhaul

ID	Title	Level	Credit	Review Category
4053	Repair and/or overhaul helicopter belt-drive components	4	4	B
4054	Repair and/or overhaul helicopter engine cooling fan assemblies	4	4	B
4055	Repair and/or overhaul helicopter driveshaft assemblies	4	4	B
4056	Repair and/or overhaul helicopter rotor free-wheel units	4	4	B
4057	Repair and/or overhaul helicopter rotor hubs	4	12 15	B
4058	Repair helicopter composite rotor blades	4	8 10	B
4059	Repair helicopter metal rotor blades	4	8 10	B
17668	Repair and/or overhaul helicopter rescue hoists	4	12	B
17669	Repair and/or overhaul helicopter cargo suspension hooks	4	4	B