

SKILLS FRAMEWORK FOR AEROSPACE				
SKILLS MAP - Senior Quality Engineer (Aircraft Engine / Component Maintenance)				
Sector	Aerospace			
Track	Aircraft Engine / Component Maintenance			
Occupation	Quality Control/Assurance Engineer			
Job Role	Senior Quality Engineer (Aircraft Engine / Component Maintenance)			
Job Role Description	<p>The Senior Quality Engineer (Aircraft Engine / Component Maintenance) develops the organisation's quality management system (QMS) prescribing quality assurance, quality control and inspection standards for aircraft engine and component maintenance. He/She leads internal and external quality audits, impact analyses and quality investigations to drive conformance of maintenance tasks to procedures and standards prescribed by original equipment manufacturers (OEM), regulatory authorities and own organisation. He recommends corrective and preventive actions for quality issues in engine components. He defines first article inspection (FAI) requirements for conformance of engine to design specifications and customer requirements. He may be authorised by the company to certify engines and components for release to service. He reviews updates to the technical library and Maintenance Organisation Exposition and validates alternative processes, tools and inspection technologies.</p> <p>He reviews compliance of maintenance works with airworthiness and legislative requirements, while proposing enhancements to the organisation's standard operating procedures (SOPs), and safety, health and quality systems. He proactively contributes to the development of lean and sustainability practices, and conducts research and digital innovation in targeted areas for continuous process improvements. As a team leader, he appraises staff performance and conducts coaching and mentoring for quality personnel.</p> <p>He possesses a quality, safety and risk compliance mindset, and employs critical reasoning, analytical thinking and problem-solving skills to identify discrepancies, resolve problems and mitigate potential quality risks in maintenance activities.</p>			
Critical Work Functions and Key Tasks / Performance Expectations	Critical Work Functions	Key Tasks	Performance Expectations (For legislated / regulated occupations)*	
	Contribute to engine and component maintenance, repair and overhaul (MRO)	Manage impact analysis and quality investigations on engine parts and components	<ul style="list-style-type: none"> In accordance with: <ul style="list-style-type: none"> International Civil Aviation Organisation (ICAO) legislation Air Navigation Order (ANO) Singapore Airworthiness Requirements (SAR) Workplace Safety and Health (WSH) Act Environmental standards Aerospace quality management system standards ISO, AN, MS, NAS and MIL standards Air Transport Association of America (ATA) standards Special process standards <p>*Performance Expectations are non-exhaustive and subject to prevailing regulations</p>	
		Recommend corrective and preventive actions for quality issues in engine and components		
		Review updates to technical library and Maintenance Organisation Exposition for engine and component maintenance		
	Administer quality control	Develop quality assurance, quality control and inspection standards for engine and engine component maintenance		
		Define first article inspection (FAI) requirements to ensure conformance of engine and component to design specifications		
		Lead internal, external and vendor audits to ensure compliance with original equipment manufacturer (OEM) and organisation procedures		
	Conform to management system requirements	Validate alternative processes, tools and new inspection technologies		
		Propose enhancements to standard operating procedures (SOPs) for quality operations		
		Review compliance with corporate governance policies and legislative requirements		
Recommend improvements to environment, safety and health systems, policies and procedures				
Contribute to continuous improvement	Contribute to the development of organisational quality and risk management systems			
	Contribute to the development of sustainability practices for engine and component maintenance			
	Evaluate opportunities for continuous improvement projects			
	Contribute to the development of lean practices for engine and component maintenance			
Manage people and organisational development	Conduct research on market trends and technology applications to drive innovation			
	Leverage data analytics to enhance operational and business decision-making			
	Liaise with other teams and customers to ensure smooth operations			
Technical Skills and Competencies	Generic Skills and Competencies			
	Aerodynamics Principles Application	Level 4	Problem Solving	Intermediate
	Aerospace Materials and Hardware Selection	Level 4	Sense-Making	Advanced
	Artificial Intelligence Application	Level 3	Decision Making	Intermediate
	Audit and Review Management	Level 3	Service Orientation	Intermediate
	Aviation Legislation Compliance	Level 3	Leadership	Intermediate
	Big Data Analytics	Level 3		
	Business Continuity Planning	Level 3		
	Business Negotiation	Level 4		
	Business Performance Management	Level 3		
	Carbon Footprint Management	Level 4		
	Change Management	Level 3		
	Condition-based Assets Monitoring Management	Level 4		

Skills & Competencies	Continuous Process Improvement	Level 3		
	Digital Techniques Application	Level 4		
	Electrical Fundamentals Application	Level 4		
	Electronic Fundamentals Application	Level 4		
	Engineering Drawing Interpretation and Management	Level 4		
	Engineering Problem Solving	Level 4		
	Gas Turbine Engine Principles Application	Level 4		
	Geometric Dimensioning and Tolerancing	Level 3		
	Green Manufacturing Design and Implementation	Level 3		
	Helicopter Aerodynamics, Structures and Systems Principles Application	Level 4		
	Human Factors Application and Error Management	Level 3		
	Image Processing and Industrial Vision Inspection	Level 3		
	Innovation Management	Level 3		
	Internet of Things Implementation	Level 3		
	Knowledge Management	Level 3		
	Lean Manufacturing	Level 3		
	Mathematical Concepts Application	Level 3		
	Non-metallic Materials Testing	Level 3		
	Physics Concepts Application	Level 3		
	Piston Aeroplane Aerodynamics, Structures and Systems Principles Application	Level 4		
	Piston Engine Principles Application	Level 4		
	Precision Measurement	Level 4		
	Project Management	Level 3		
	Propeller Principles Application	Level 4		
	Propulsion Principles Application	Level 4		
	Quality System Management	Level 3		
	Robotics and Automation Application	Level 3		
	Stakeholder Management	Level 3		
	Turbine Aeroplane Aerodynamics, Structures and Systems Principles Application	Level 4		
	Workplace Safety and Health Framework Development and Implementation	Level 3		
Programme Listing	For a list of training programmes available for the Aerospace sector, please visit < https://www.skillsfuture.sg/skills-framework/aero >			

THE INFORMATION
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