

SKILLS FRAMEWORK FOR AEROSPACE			
SKILLS MAP - Quality Engineer (Aircraft Maintenance)			
Sector	Aerospace		
Track	Aircraft Maintenance		
Occupation	Quality Control/Assurance Engineer		
Job Role	Quality Engineer (Aircraft Maintenance)		
Job Role Description	<p>The Quality Engineer (Aircraft Maintenance) implements the organisation's quality management system (QMS) to identify deviations and potential risks in the aircraft maintenance processes. He/She conducts internal and external quality audits, root cause analyses and failure investigations to ensure conformance of aircraft maintenance tasks to procedures and standards prescribed by original equipment manufacturers (OEM), regulatory authorities and own organisation. He proposes corrective actions for quality issues in aircraft parts and components, and ensures that all non-conformances are tracked and rectified. He validates first article inspection (FAI) results to ensure conformance of aircraft to design specifications and customer requirements. He may be authorised by the company to certify aircraft components for release to service (fulfil SAR-145 and AC 155 requirements).</p> <p>He proposes updates to the technical library and Maintenance Organisation Exposition, and ensures distribution of latest airworthiness directives to workshops. He ensures compliance with airworthiness and legislative requirements and organisation's safety, health and quality systems. He identifies opportunities for continuous improvement through data analytics, research and innovation, and implements lean and sustainability practices in quality control activities. He monitors staff performance, provides technical guidance to quality inspectors/technicians and conduct airworthiness-related training when required.</p> <p>He should be meticulous and systematic in carrying out his tasks, and should deploy critical and analytical thinking to identify discrepancies, resolve problems and mitigate potential quality risks in aircraft maintenance activities.</p>		
Critical Work Functions and Key Tasks / Performance Expectations	Critical Work Functions	Key Tasks	Performance Expectations (For legislated / regulated occupations)*
	Contribute to aircraft maintenance, repair and overhaul (MRO)	Conduct root cause analyses and quality investigations on aircraft structures	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 *Performance Expectations are non-exhaustive and subject to prevailing regulations
		Propose corrective actions for quality issues in aircraft parts and components	
		Propose updates to technical library and Maintenance Organisation Exposition for aircraft maintenance	
	Administer quality control	Ensure compliance of aircraft maintenance activities with quality assurance, quality control and inspection standards	
		Conduct final acceptance of incoming aircraft parts and components as per purchase and repair requirements	
		Validate first article inspection (FAI) results to ensure conformance of aircraft parts and components to design specifications	
		Conduct internal, external and vendor audits to ensure compliance with original equipment manufacturer (OEM) and organisation procedures	
	Conform to management system requirements	Ensure follow-up on non-conformances and implementation of corrective and preventive actions	
		Ensure adherence of quality operations to standard operating procedures (SOPs)	
		Ensure compliance with legislative requirements and airworthiness standards	
		Enforce conformance to environment, safety and health systems, policies and procedures	
		Implement organisational quality and risk management systems	
Contribute to continuous improvement	Implement sustainability practices for aircraft maintenance		
	Identify opportunities for continuous improvement projects		
	Implement lean practices for aircraft maintenance		
	Contribute to research on market trends and technology applications to drive innovation		
Manage people and organisational development	Analyse data for identification of operational and business insights		
	Communicate with team members and customers to ensure smooth day-to-day operations		
	Monitor staff performance		
	Provide technical guidance to peers and junior team members		
Technical Skills and Competencies		Generic Skills and Competencies	
Aerodynamics Principles Application	Level 3	Problem Solving	Intermediate
Aerospace Materials and Hardware Selection	Level 3	Sense-Making	Advanced
Audit and Review Management	Level 2	Decision Making	Basic
Aviation Legislation Compliance	Level 3	Service Orientation	Intermediate
Business Negotiation	Level 3	Computational Thinking	Intermediate
Condition-based Assets Monitoring Management	Level 4		
Continuous Process Improvement	Level 3		
Digital Techniques Application	Level 3		
Electrical Fundamentals Application	Level 3		
Electronic Fundamentals Application	Level 3		

Skills & Competencies	Engineering Drawing Interpretation	Level 3		
	Engineering Problem Solving	Level 4		
	Gas Turbine Engine Principles Application	Level 3		
	Geometric Dimensioning and Tolerancing	Level 3		
	Helicopter Aerodynamics, Structures and Systems Principles Application	Level 3		
	Human Factors Application and Error Management	Level 3		
	Image Processing and Industrial Vision Inspection	Level 3		
	Internet of Things Implementation	Level 3		
	Knowledge Management	Level 3		
	Lean Manufacturing	Level 2		
	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 3		
	Piston Engine Principles Application	Level 3		
	Precision Measurement	Level 3		
	Propeller Principles Application	Level 3		
	Propulsion Principles Application	Level 3		
	Quality System Management	Level 3		
	Robotics and Automation Application	Level 3		
	Turbine Aeroplane Aerodynamics, Structures and Systems Principles Application	Level 3		
Workplace Safety and Health Framework Development and Implementation	Level 3			
Workshop Practices Application	Level 2			
Programme Listing	<i>For a list of training programmes available for the Aerospace sector, please visit <https://www.skillsfuture.sg/skills-framework/aero></i>			

The information contained in this document serves as a guide.