

NATIONAL COUNCIL FOR TECHNICAL AND VOCATIONAL EDUCATION AND TRAINING



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OCCUPATIONAL STANDARDS

OCCUPATION: AVIONICS MAINTENANCE ENGINEER

LEVEL: NTA LEVEL 7

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ABBREVIATIONS

AC	Alternating Current
ADC	Air Data Computer
ADF	Automatic Direction Finder
AFCS	Automatic Flight Control System
AMM	Aircraft Maintenance Manual
AMO	Approved Maintenance Organization
AoA	Angle of Attack
APU	Auxiliary Power Unit
ASI	Airspeed Indicator
ATC	Air Traffic Control
ATO	Approved Training Organization
CBET	Competency Based Education and Training
CSDU	Constant Speed Drive Unit
CVR	Cockpit Voice Recorder
DC	Direct Current
DME	Distance Measuring Equipment
EADI	Electronic Attitude Direction Indicator
ECAM	Electronic Centralized Aircraft Monitor
EEC	Engine Electronic Control
EGT	Exhaust Gas Temperature
EHSI	Electronic Horizontal Situation Indicator
EICAS	Engine Indicating and Crew Alerting System
ELT	Emergency Locator Transmitter
EPR	Engine Pressure Ratio
FDR	Flight Data Recorder
FMC	Flight Management Computer
FMS	Flight Management System

GPS	Global Positioning System
GPU	Ground Power Unit
GPWS	Ground Proximity Warning System
HF	High Frequency
MCDU	Multipurpose Control and Display Unit
NACTVET	National Council for Technical and Vocational Education and Training of Tanzania
NOS	National Occupational Standards
OS	Occupational Standards
PFD	Primary Flight Display
SELCAL	Selective Calling
TAT	Total Air Temperature
TCAA	Tanzania Civil Aviation Authority
TCAS	Traffic Collision Avoidance System
TRU	Transformer Rectifier Unit
TET	Technical Education and Training
TVET	Technical and Vocational Education and Training
VHF	Very High Frequency
VOR	VHF Omni-directional Range

GLOSSARY OF TERMS

Circumstantial Knowledge:	Detailed knowledge, which allows the decision-making in regard to different circumstances and cross cutting issues.
Competence:	The ability to use knowledge, understanding, practical, and thinking skills to perform effectively to the workplace standards required in employment.
Competency:	A description of the ability one possesses when able to perform a given occupational task effectively and efficiently.
Competency-based Education:	An instructional programme that derives its content from validated tasks and bases assessment on the learner's performance.
Curriculum:	A description or composite of statements about "what is to be learned" by the trainee/student in a particular instructional programme; a product that states the "intended learning outcomes".
Educational/Training Programme:	The complete curriculum and instruction (what and how) that is designed to prepare a person for employment in a job or other particular performance situation.
Occupation:	A specific position requiring the performance of specific tasks – essentially the same tasks are performed by all employees having the same title. (Example: baker)
Occupational Area:	This is a broad grouping of related jobs. (Example: food service)
Occupational Competence:	The application of knowledge and skills that consistently meet the standards required by the work context.
Occupational Standards:	Specific requirements of competences people are expected to demonstrate in a particular occupational area, including knowledge and relevant attitudes. They also act as a performance tool of assessment of the prescribed outcomes.
Occupational/Job Analysis:	A process used to identify the tasks that are important to employees in any given occupation.
Performance Criteria:	Indicate expected end results or outcomes in the form of evaluative statements.
Skills:	The ability to perform occupational tasks with a high degree of proficiency within a given occupation. Skill is conceived of as a composite of three completely interdependent components: cognitive, affective, and psychomotor.

- Standards:** A set of statements, which if proved true under working conditions, means that an individual is meeting an expected level and type of performance.
- Task Analysis:** The process of analysing each task to determine the steps, circumstantial knowledge, attitudes, performance standards, tools and materials needed, as well as safety concerns required for the employees performing it.
- Task:** A work activity that has a definite beginning and ending, is observable or measurable, and consists of two or more definite steps that leads to a product, service, or decision.
- Underpinning Knowledge:** Crucial knowledge that an individual must acquire in order to demonstrate competences that are associated in performing a given task.
- Verification Process:** The process of having experts review and confirm the importance of the task (competency) statements identified through occupational analysis. Other questions, such as the degree of task learning difficulty are also frequently asked. This process is also sometimes referred to as validation.

1.0. INTRODUCTION

Technical Education and Training (TET) is one of the most important education sub-sectors in Tanzania, responsible for developing a skilled workforce to support the country's industrialization economic agenda. Tanzania's *Development Vision 2025* intends to raise the country's economy to a middle-income status, with a high level of human development. This requires a skilled workforce that is aligned with the needs of the public and private sectors of the economy. The National Council for Technical and Vocational Education and Training (NACTVET) has begun the job of drafting Occupational Standards (OS) that will eventually be adopted as National Occupational Standards (NOS) for use in the delivery of TET that meets the needs of the labour market and the country's economic agenda.

Occupational Standards (OS) are performance criteria that are matched with labour market demands. Each of them describes the functions, performance standards, and understanding or knowledge underpinning a given occupation. They combine skills, knowledge, and attitudes to describe best practice. They are useful tools for establishing job roles, personnel recruitment, supervision, and appraisal, as well as TET Standards. They are also helpful for benchmarking and harmonizing job qualifications on a national and international level. Standards, in general, provide a solid framework for high-quality TET that is labour market-relevant, current, and consistent in application across all public and private institutions.

However, it must be noted that Occupational Standards are different from Training /Education Standards. Occupational standards are defined in terms of activities performed by a person in a selected occupation (e.g., an electrical engineer designs electrical circuits, performs troubleshooting in electrical circuits, etc.), and are usually defined by Employers following procedures as agreed upon by all the stakeholders. On the other hand, Training and Education Standards are developed from the activities defined in the occupational standards, and they specify learning objectives to ensure that the necessary skills and knowledge are developed by a person to enable him/her to function at an agreed level in an occupation. Training and Education Standards are used to define curricula in training institutions. It is critical, however, to establish a direct link between the occupational standards and the training standards for both of them to respond collaboratively to the demands of the labour market.

For the purpose of TET delivery, Tanzania has adopted the Competence Based Education and Training (CBET) approach. The CBET approach focuses on providing learners with the skills and knowledge required to meet the occupational standards. Occupational standards are thus the starting point for developing competency-based training (CBET) programmes. Therefore, it is quite pertinent

for TET institutions to use the relevant occupational standards as a benchmark for formulating their curricula.

Occupational Standards are developed based on a given occupation's current and future demands. As a result, they serve as a means of bridging the gap between the worlds of employment and technical education and training.

The document explains how the occupational standards were developed, as well as the scope, the occupational profile in the form of DACUM charts, and the Occupational Standards.

2.0. OCCUPATIONAL STANDARD DEVELOPMENT PROCESS

The process of developing these Occupational Standards involved both local and international expertise. The process began with an examination of major documents that guide Tanzanian skills development including the *10-year National Skills Development Strategy (2016-2026)*. NACTVET labour market reports were also used in the literature review to determine the skills demand in the Tanzanian labour market as a whole.

After the literature review, a team of experts in consultation with practitioners developed draft occupational standards. The draft document was used to develop an occupational profile for each occupation (DACUM Chart), which is attached as an **Appendix** to every Occupational Standard.

The occupational standards were validated during the stakeholders' forum held on 22nd and 23rd February 2024 at Morogoro. The information from the stakeholders' forum provides insight from the workplace, professional bodies, regulatory bodies and sector ministries regarding trends and changes in the profession, including how well graduates are prepared for working in the occupation.

3.0. THE SCOPE AND OVERVIEW OF THE OCCUPATION STANDARDS FOR AVIONICS MAINTENANCE ENGINEERS

These standards cover a broad range of duties and tasks that can be performed by an Avionics Maintenance Engineer. However, the occupational standards are not meant to replace individual job descriptions. Instead, they are to be used for guidance in defining skill levels and knowledge for the technician in specific settings or positions. The Avionics Maintenance Engineer may perform tasks in a number of key areas of the Occupational Standards, but not necessarily in all areas. For example, in large operations, other individuals may be employed or designated to perform specific tasks.

Avionics Maintenance Engineers work within Approved Maintenance Organisations (AMOs) to maintain, repair and manage aircraft operating in the aviation transportation industry. The aviation transportation involves cargo and passenger aircraft; collectively referred to as commercial aircraft. Commercial aircraft are operated by well-trained and qualified personnel to transport goods and

people between different locations worldwide. There is a wide range of aircraft types, varying in size, model and operating specifications. Avionics Maintenance Engineers play an important role in ensuring compliance with the airworthiness requirements stipulated by the Tanzania Civil Aviation Authority (TCAA). Generally, the Avionics Maintenance Engineer performs the following responsibilities:

- a) Analysis and isolation of faults in aircraft power generation, distribution and conversion systems
- b) Analysis and isolation of faults in aircraft lighting system maintenance
- c) Analysis and isolation of faults in aircraft instrument systems
- d) Analysis and isolation of faults in aircraft radio communication and navigation systems
- e) Analysis and isolation of faults in aircraft electrical control and operating systems
- f) Analysis and isolation of faults in aircraft radar systems
- g) Analysis and isolation of faults in the aircraft AFCS
- h) Aeronautical maintenance engineering management
- i) Fault diagnosis and system reliability analysis

The Occupational Standards have been clustered into NTA qualification levels i.e. NTA level 7 and 8.

4.0. VALIDITY PERIOD

Due to the rapid development of technology, the validity period of occupational standards is 3-5 years. The review will proceed in the same manner as the one before it, with new occupational standards being developed based on current trends of the labour market.

5.0. OCCUPATIONAL STANDARDS

**5.1 OCCUPATIONAL STANDARDS FOR AVIONICS MAINTENANCE ENGINEER FOR
NTA LEVEL 7**

OCCUPATION	AVIONICS MAINTENANCE ENGINEER	OCCUPATION CODE	
DUTY TITLE	PERFORM ANALYSIS AND ISOLATION OF FAULTS IN AIRCRAFT POWER GENERATION, DISTRIBUTION AND CONVERSION SYSTEMS	DUTY NO.	701
TASK TITLE	CARRY OUT AIRCRAFT POWER SYSTEM MAINTENANCE PLAN	TASK NO.	7011
PERFORMANCE CRITERIA	The person performing this task must be able to carry out aircraft power system maintenance plan in accordance with approved technical specifications, procedures and policies.		
RANGE STATEMENT	<p>The task can be performed in an AMO under the supervision of aircraft maintenance/release engineers. The equipment and tools to be used include:</p> <ol style="list-style-type: none"> 1. Maintenance documents: airworthiness regulations, rules, procedures and maintenance manuals; 2. Fitter’s complete tool kit; 3. Electronics technician’s complete tool kit; 3. Aviation materials and consumables; 4. Transportation equipment; 5. Work bench; 5. Safety gear. 		
EVIDENCE REQUIREMENT			
PRACTICAL PERFORMANCE	UNDERPINNING KNOWLEDGE		
<p>The person performing this task must be able to do the following:</p> <ol style="list-style-type: none"> 1. Select tools, equipment and safety gear; 2. Observe health and safety regulations; 3. Interpret aircraft maintenance instructions; 4. Review airworthiness directives and service bulletins; 5. Assign responsibilities and duties to appropriate personnel; 6. Develop the maintenance plan for aircraft power supply systems; 7. Supervise the implementation of aircraft power supply system maintenance; 	<p>Detailed knowledge about:</p> <p>1.0 Methods</p> <p>The person performing this task must be able to explain how to:</p> <ol style="list-style-type: none"> 1.1 Effectively manage a team to ensure the smooth completion of work; 1.2 Develop maintenance plans for aircraft power systems. <p>2.0 Principles</p> <p>The person performing this task must be able to explain the following principles:</p> <ol style="list-style-type: none"> 2.1 Principles of maintenance team management; 2.2 Principles of safety control in aircraft power system maintenance; 2.3 Principles of maintenance cost control. <p>3.0 Theories</p>		

<ul style="list-style-type: none"> 8. Coordinate interpersonal communication; 9. Oversee the schedule and quality of work; 10. Evaluate results; 11. Hold relevant meetings; 12. Establish an effective incentive mechanism; 13. Prepare maintenance budget; 14. Manage spare parts stocks. 15. Manage tools and equipment movement; 16. Clean tools, equipment and the workplace; 17. Store tools, equipment and safety gear. 	<p>The person performing this task must be able to explain the following:</p> <ul style="list-style-type: none"> 3.1 Job responsibilities of maintenance personnel; 3.2 Responsibilities and work procedures of management personnel; 3.3 Aircraft power system maintenance schemes. <p>4.0 Essential skills</p> <ul style="list-style-type: none"> 4.1 Technical document reading competence; 4.2 Teamwork skills; 4.3 Communication skills; 4.4 Customer service competence; 4.5 Report writing competence; 4.6 Computer application competence.
<p>DESCRIPTION OF THE END PRODUCT / SERVICE</p>	<p>Management of aircraft power system maintenance is carried out in accordance with approved technical specifications, procedures and policies.</p>
<p>CIRCUMSTANTIAL KNOWLEDGE</p>	<p>Detailed knowledge about:</p> <ul style="list-style-type: none"> 1. Maintenance strategies and procedures; 2. Tools and equipment and on-site operation safety; 3. Occupational safety and health.

OCCUPATION	AVIONICS MAINTENANCE ENGINEER	OCCUPATION CODE	
DUTY TITLE	PERFORM ANALYSIS AND ISOLATION OF FAULTS IN AIRCRAFT POWER GENERATION, DISTRIBUTION AND CONVERSION SYSTEMS	DUTY NO.	701
TASK TITLE	IMPLEMENT TESTING OF AIRCRAFT AC POWER SYSTEMS	TASK NO.	7012
PERFORMANCE CRITERIA	The person performing this task must be able to test aircraft AC power systems in accordance with the approved technical specifications, procedures and regulations.		
RANGE STATEMENT	<p>The task can be performed in an AMO's aircraft under the supervision of aircraft maintenance/release engineers.</p> <p>The equipment and tools to be used include:</p> <p>Equipment and tools:</p> <ol style="list-style-type: none"> 1. Personal protective equipment; 2. AC power system testing equipment; 3. Fitter's complete tool kit; 3. Electrician's complete tool kit; 4. Multimeters; 5. Signal generator; 5. Oscilloscopes; 6. Computers (with accessories); 7. Safety gear <p>Materials:</p> <ol style="list-style-type: none"> 1. Electrical jointing; 2. Wires; 3. Fuses; 4. Bundling ropes. 		
EVIDENCE REQUIREMENT			
PRACTICAL PERFORMANCE	UNDERPINNING KNOWLEDGE		
<p>The person performing this task must be able to do the following:</p> <ol style="list-style-type: none"> 1. Select tools, equipment and safety gear; 2. Observe health and safety regulations; 3. Interpret task cards and maintenance instructions; 	<p>Detailed knowledge about:</p> <p>1.0 Methods</p> <p>The person performing this task must be able to explain how to:</p> <ol style="list-style-type: none"> 1.1 Inquire and use maintenance task cards; 1.2 Test aircraft AC power systems. <p>2.0 Principles</p> <p>The person performing this task must be able to explain the following principles:</p>		

<ol style="list-style-type: none"> 4. Review all applicable airworthiness directives and service bulletins; 5. Execute all applicable airworthiness directives and service bulletin instructions; 6. Perform all functional tests in the aircraft AC system; 7. Perform final tests and sign task cards; 8. Submit task cards to the certification engineer for certification and aircraft delivery for use; 9. Restore the aircraft to its normal state. 10. Clean the tools, equipment and the workplace; 11. Store tools, equipment and safety gear. 	<ol style="list-style-type: none"> 2.1 Electrical connections and plugging/unplugging; 2.2 Voltage and frequency testing; 2.3 Load testing; 2.4 Troubleshooting and repair; 2.5 Compliance with standards and procedures; 2.6 Data recording and analysis. <p>3.0 Theories The person performing this task must be able to explain the following:</p> <ol style="list-style-type: none"> 3.1 Basic methods of aircraft maintenance; 3.2 Human factors in maintenance processes; 3.3 Basic types of aircraft AC power systems; 3.4 Aircraft AC power test flows; 3.5 Methods of using basic tools and testing equipment; 3.6 Methods of using AMMs and WDM; 3.7 Methods of developing aircraft maintenance schemes; 3.8 Applicable scope of civil aviation regulations. 3.9 Methods of using and interpreting wiring diagram manual (WDM) <p>4.0 Essential skills</p> <ol style="list-style-type: none"> 4.1 Data analysis competence; 4.2 Engineering technical report writing competence; 4.3 Computer skills; 4.4 Critical thinking; 4.5 Problem-solving competence; 4.6 Stress management; 4.7 Teamwork; 4.8 Communication skills.
<p>DESCRIPTION OF THE END PRODUCT / SERVICE</p>	<p>Testing of aircraft ac power systems is conducted in accordance with approved technical specifications and procedures.</p>
<p>CIRCUMSTANTIAL KNOWLEDGE</p>	<p>Detailed knowledge about:</p> <ol style="list-style-type: none"> 1. Safety operation of equipment and tools; 2. Occupational safety and health; 3. Safe disposal of materials.

OCCUPATION	AVIONICS MAINTENANCE ENGINEER	OCCUPATION CODE	
DUTY TITLE	PERFORM ANALYSIS AND ISOLATION OF FAULTS IN AIRCRAFT POWER GENERATION, DISTRIBUTION AND CONVERSION SYSTEMS	DUTY NO.	701
TASK TITLE	CONDUCT ANALYSIS AND ISOLATION OF FAULTS IN AIRCRAFT AC POWER SYSTEMS	TASK NO.	7013
PERFORMANCE CRITERIA	The person performing this task must be able to analyse and isolate faults in aircraft AC power systems in accordance with the approved technical specifications and procedures.		
RANGE STATEMENT	<p>The task can be performed in an AMO's aircraft under the supervision of aircraft maintenance/release engineers.</p> <p>The equipment and tools to be used include:</p> <p>Equipment and tools:</p> <ol style="list-style-type: none"> 1. Personal protective equipment; 2. Computers with accessories; 3. Fitter's complete tool kit; 4. Electrician's complete tool kit; 5. Multimeters; 6. Heat guns; 7. Anti-static wrist straps; 8. Welding guns; 9. Crimping tools; 10. Connector pick-up and delivery tools; 11. Safety gear. <p>Materials:</p> <ol style="list-style-type: none"> 1. Fuses; 2. Strapping tapes; 3. Cleaners; 4. Pin cleaners; 5. Contact enhancers; 6. Splice tubes; 7. Conductors; 8. Welding materials; 9. Sealants; 10. Heat shrinkable sleeves. 		
EVIDENCE REQUIREMENT			
PRACTICAL PERFORMANCE		UNDERPINNING KNOWLEDGE	
The person performing this task must be able to do the following:		Detailed knowledge about: 1.0 Methods	

<ol style="list-style-type: none"> 1. Select tools, equipment and safety gear; 2. Observe health and safety regulations; 3. Interpret aircraft status reports; 4. Test the aircraft AC power system; 5. Analyze and isolate faults according to the corresponding test reports and troubleshooting manuals; 6. Detect and diagnose faults in all aircraft AC system components: 7. Detect and diagnose faults in all aircraft AC system circuits; 8. Resolve all detected issues; 9. Perform final tests and sign task cards; 10. Submit task cards to the certification engineer for certification and aircraft delivery for use; 11. Restore the aircraft to its normal state. 12. Clean tools, equipment and the workplace; 13. Store the tools, equipment and safety gear. 	<p>The person performing this task must be able to explain how to:</p> <ol style="list-style-type: none"> 1.1 Analyse aircraft AC power system test reports; 1.2 Determine possible fault causes of aircraft AC power systems; 1.3 Troubleshoot aircraft AC power systems. <p>2.0 Principles</p> <p>The person performing this task must be able to explain the following principles:</p> <ol style="list-style-type: none"> 2.1 Circuit and component inspection; 2.2 Fault diagnosis test; 2.3 Data recording and analysis; 2.4 Compliance with standards and procedures; 2.5 Safety and environmental protection considerations; 2.6 Electrical interlocking and isolation. <p>3.0 Theories</p> <p>The person performing this task must be able to explain the following:</p> <ol style="list-style-type: none"> 3.1 Aircraft AC power system fault analysis and isolation processes; 3.2 Methods of using basic tools and testing equipment; 3.3 Methods of using AMM and WDMs; 3.4 Methods of developing aircraft maintenance schemes; 3.5 Methods of using fault isolation manuals; 3.6 Methods of using component maintenance manuals; 3.7 Methods of connecting and overhauling electrical circuits; 3.8 Recognition and testing methods for electronic components. <p>4.0 Essential skills</p> <ol style="list-style-type: none"> 4.1 Data analysis competence; 4.2 Engineering technical report writing competence; 4.3 Computer skills; 4.4 Critical thinking; 4.5 Problem-solving competence; 4.6 Stress management; 4.7 Teamwork; 4.8 Communication skills.
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DESCRIPTION OF THE END PRODUCT / SERVICE	Analysis and isolation of faults in aircraft ac power systems is carried out in accordance with approved technical specifications and procedures.
CIRCUMSTANTIAL KNOWLEDGE	Detailed knowledge about: <ol style="list-style-type: none"> 1. Safety operation of equipment and tools; 2. Occupational safety and health; 3. Safe disposal of materials.

OCCUPATION	AVIONICS MAINTENANCE ENGINEER	OCCUPATION CODE	
DUTY TITLE	PERFORM ANALYSIS AND ISOLATION OF FAULTS IN AIRCRAFT POWER GENERATION, DISTRIBUTION AND CONVERSION SYSTEMS	DUTY NO.	701
TASK TITLE	CARRY OUT TESTING OF AIRCRAFT DC POWER SYSTEMS	TASK NO.	7014
PERFORMANCE CRITERIA	The person performing this task must be able to test aircraft DC power systems in accordance with approved technical specifications and procedures.		
RANGE STATEMENT	<p>The task can be performed in an AMO's aircraft under the supervision of aircraft maintenance/release engineers.</p> <p>The equipment and tools to be used include:</p> <p>Equipment and tools:</p> <ol style="list-style-type: none"> 1. Personal protective equipment; 2. DC power system testing equipment; 3. Fitter's complete Tool kit; 4. Electrician's complete tool kit 5. Multimeters; 6. Oscilloscopes; 7. Computers (with accessories). 8. Safety gear. <p>Materials:</p> <ol style="list-style-type: none"> 1. Electrical jointing; 2. Conductors; 3. Fuses; 4. Bundling ropes. 		
EVIDENCE REQUIREMENT			
PRACTICAL PERFORMANCE	UNDERPINNING KNOWLEDGE		
<p>The person performing this task must be able to do the following:</p> <ol style="list-style-type: none"> 1. Select tools, equipment and safety gear; 2. Observe health and safety regulations; 3. Interpret task cards and maintenance instructions; 4. Interpret all applicable airworthiness directives and service bulletins; 	<p>Detailed knowledge about:</p> <p>1.0 Methods</p> <p>The person performing this task must be able to explain how to:</p> <ol style="list-style-type: none"> 1.1 Inquire and use maintenance task cards; 1.2 Test aircraft DC power systems; <p>2.0 Principles</p> <p>The person performing this task must be able to explain the following principles:</p> <ol style="list-style-type: none"> 2.1 Electrical connections and plugging/unplugging; 		

<p>5. Execute all applicable airworthiness directives and service bulletin instructions;</p> <p>6. Perform the following tests in the aircraft DC system:</p> <ol style="list-style-type: none"> Aero battery system; Aero engine-driven DC generator; DC generator parallel system; DC generator load sharing system; DC generator load shedding system; DC power voltage regulator; DC power load controller; DC power fault and test panel; DC power voltage, frequency and excitation control and protection systems; <p>7. Perform final tests and sign task cards;</p> <p>8. Submit task cards to the certification engineer for certification and aircraft delivery for use;</p> <p>9. Restore the aircraft to its normal state.</p> <p>10. Clean the workplace, tools and equipment;</p> <p>11. Store, tools, equipment and safety gear;</p>	<p>2.2 Voltage and current testing;</p> <p>2.3 Battery status testing;</p> <p>2.4 Troubleshooting and repair.</p> <p>3.0 Theories</p> <p>The person performing this task must be able to explain the following:</p> <ol style="list-style-type: none"> Basic methods of aircraft maintenance; Human factors in maintenance processes; Basic types of aircraft DC power systems; Aircraft DC power test flows; Methods of using basic tools and testing equipment; Methods of using AMMs and WDM; Methods of developing aircraft maintenance schemes; Applicable scope of civil aviation regulations. <p>4.0 Essential skills</p> <ol style="list-style-type: none"> Data analysis competence; Engineering technical report writing competence; Computer skills; Critical thinking; Problem-solving competence; Stress management; Teamwork; Communication skills.
<p>DESCRIPTION OF THE END PRODUCT / SERVICE</p>	<p>Testing of aircraft dc power systems is carried out in accordance with approved technical specifications and regulations.</p>
<p>CIRCUMSTANTIAL KNOWLEDGE</p>	<p>Detailed knowledge about:</p> <ol style="list-style-type: none"> Safety operation of equipment and tools; Occupational safety and health; Safe disposal of materials.

OCCUPATION	AVIONICS MAINTENANCE ENGINEER	OCCUPATION CODE	
DUTY TITLE	PERFORM ANALYSIS AND ISOLATION OF FAULTS IN AIRCRAFT POWER GENERATION, DISTRIBUTION AND CONVERSION SYSTEMS	DUTY NO.	701
TASK TITLE	PERFORM ANALYSIS AND ISOLATION OF FAULTS IN AIRCRAFT DC POWER SYSTEMS	TASK NO.	7015
PERFORMANCE CRITERIA	The person performing this task must be able to analyse and isolate faults in aircraft DC power systems in accordance with approved technical specifications and procedures.		
RANGE STATEMENT	<p>The task can be performed in an AMO's aircraft under the supervision of aircraft maintenance/release engineers.</p> <p>The equipment and tools to be used include:</p> <p>Equipment and tools:</p> <ol style="list-style-type: none"> 1. Personal protective equipment; 2. Computers with accessories; 3. Fitter's complete tool kit; 4. Electrician's complete tool kit; 5. Multimeters; 6. Heat guns; 7. Anti-static wrist straps; 8. Welding guns; 9. Crimping tools; 10. Connector pick-up and delivery tools; 11. Safety gear; 12. Work bench <p>Materials:</p> <ol style="list-style-type: none"> 1. Fuses; 2. Strapping tapes; 3. Cleaners; 4. Pin cleaners; 5. Contact enhancers; 6. Splice tubes; 7. Conductors; 8. Welding materials; 9. Sealants; 10. Heat shrinkable sleeves. 		
EVIDENCE REQUIREMENT			
PRACTICAL PERFORMANCE		UNDERPINNING KNOWLEDGE	

<p>The person performing this task must be able to do the following:</p> <ol style="list-style-type: none"> 1. Select tools, equipment and safety gear; 2. Observe health and safety regulations; 3. Interpret aircraft status reports; 4. Test the aircraft DC power system; 5. Analyse and isolate faults according to the corresponding test reports and troubleshooting manuals; 6. Detect and diagnose faults in the following aircraft DC system components: <ol style="list-style-type: none"> a. Aero battery system; b. Aero engine-driven DC generator; c. DC generator parallel system; d. DC generator load sharing system; e. DC generator load shedding system; f. DC power voltage regulator; g. DC power load controller; h. DC power fault and test panel; i. DC power voltage, frequency and excitation control and protection systems. 7. Detect and diagnose faults in the following aircraft DC system circuits: <ol style="list-style-type: none"> a. Aero battery system; b. Aero engine-driven DC generator; c. DC generator parallel system; d. DC generator load sharing system; e. DC generator load shedding system; f. DC power voltage regulator; g. DC power load controller; h. DC power fault and test panel; i. DC power voltage, frequency and excitation control and protection systems. 8. Resolve all detected issues; 9. Perform final tests and sign task cards; 10. Submit task cards to the certification engineer for certification and aircraft delivery for use; 11. Restore the aircraft to its normal state. 12. Clean tools, equipment and the workplace; 13. Store tools, equipment and safety gear; 	<p>Detailed knowledge about:</p> <p>1.0 Methods The person performing this task must be able to explain how to:</p> <ol style="list-style-type: none"> 1.1 Analyse aircraft DC power system test reports; 1.2 Determine possible fault causes of aircraft DC power systems; 1.3 Troubleshoot aircraft DC power systems. <p>2.0 Principles The person performing this task must be able to explain the following principles:</p> <ol style="list-style-type: none"> 2.1 Circuit and component inspection; 2.2 Fault diagnosis test; 2.3 Data recording and analysis; 2.4 Compliance with standards and procedures. <p>3.0 Theories The person performing this task must be able to explain the following:</p> <ol style="list-style-type: none"> 3.1 Aircraft DC power system fault analysis and isolation processes; 3.2 Methods of using basic tools and testing equipment; 3.3 Methods of using AMMs and WDM; 3.4 Methods of developing aircraft maintenance schemes; 3.5 Methods of using fault isolation manuals; 3.6 Methods of using component maintenance manuals; 3.7 Methods of connecting and overhauling electrical circuits; 3.8 Recognition and testing methods for electronic components. <p>4.0 Essential skills</p> <ol style="list-style-type: none"> 4.1 Data analysis competence; 4.2 Engineering technical report writing competence; 4.3 Computer skills; 4.4 Critical thinking; 4.5 Problem-solving competence; 4.6 Stress management; 4.7 Teamwork; 4.8 Communication skills.
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DESCRIPTION OF THE END PRODUCT / SERVICE	Faults in aircraft DC power systems are analysed and isolated in accordance with approved technical specifications and procedures.
CIRCUMSTANTIAL KNOWLEDGE	<p>Detailed knowledge about:</p> <ol style="list-style-type: none"> 1. Safety operation of equipment and tools; 2. Occupational safety and health; 3. Safe disposal of materials.

OCCUPATION	AVIONICS MAINTENANCE ENGINEER	OCCUPATION CODE	
DUTY TITLE	PERFORM ANALYSIS AND ISOLATION OF FAULTS IN AIRCRAFT POWER GENERATION, DISTRIBUTION AND CONVERSION SYSTEMS	DUTY NO.	701
TASK TITLE	IMPLEMENT TESTING OF AIRCRAFT AUXILIARY AND EMERGENCY POWER SYSTEMS	TASK NO.	7016
PERFORMANCE CRITERIA	The person performing this task must be able to test aircraft auxiliary and emergency power systems in accordance with approved technical specifications and procedures.		
RANGE STATEMENT	<p>The task can be performed in an AMO's aircraft under the supervision of aircraft maintenance/release engineers.</p> <p>The equipment and tools to be used include:</p> <p>Equipment and tools:</p> <ol style="list-style-type: none"> 1. Personal protective equipment; 2. Auxiliary and emergency power system testing equipment; 3. Fitter's complete tool kit; 4. Electrician's complete tool kit 4. Multimeters; 5. Oscilloscopes; 6. Computers (with accessories). 7. Safety gear; 8. Work bench. <p>Materials:</p> <ol style="list-style-type: none"> 1. Electrical jointing; 2. Wires; 3. Fuses; 4. Bundling ropes. 		
EVIDENCE REQUIREMENT			
PRACTICAL PERFORMANCE	UNDERPINNING KNOWLEDGE		
<p>The person performing this task must be able to do the following:</p> <ol style="list-style-type: none"> 1. Select tools, equipment and safety gear; 2. Observe health and safety regulations; 3. Interpret task cards and maintenance instructions; 4. Interpret all applicable airworthiness directives and service bulletins; 	<p>Detailed knowledge about:</p> <p>1.0 Methods</p> <p>The person performing this task must be able to explain how to:</p> <ol style="list-style-type: none"> 1.1 Inquire and use maintenance task cards; 1.2 Test aircraft auxiliary and emergency power systems. <p>2.0 Principles</p> <p>The person performing this task must be able to explain the following principles:</p>		

<p>5. Execute all applicable airworthiness directives and service bulletin instructions;</p> <p>6. Perform tests on the following items in the aircraft auxiliary and emergency power system:</p> <ol style="list-style-type: none"> a. APU generator; b. Ram air turbine generator; c. Ground power supply system; d. APU generator control unit; e. Auxiliary power supply voltage regulator; f. Auxiliary power supply load controller; g. Auxiliary power supply differential protection system; h. Auxiliary and emergency power fault and test panel; i. Auxiliary and emergency power system voltage, frequency and excitation control and protection system. <p>7. Perform final tests and sign task cards;</p> <p>8. Submit task cards to the certification engineer for certification and aircraft delivery for use;</p> <p>9. Restore the aircraft to its normal state.</p> <p>10. Clean tools, equipment and the workplace;</p> <p>11. Store the tools and equipment.</p>	<p>2.1 Working principles of aircraft auxiliary power systems;</p> <p>2.2 Working principles of aircraft emergency power systems;</p> <p>2.3 Testing principles of aircraft auxiliary power systems;</p> <p>2.4 Testing principles of aircraft emergency power systems.</p> <p>3.0 Theories</p> <p>The person performing this task must be able to explain the following:</p> <p>3.1 Basic types of aircraft auxiliary power systems;</p> <p>3.2 Basic types of aircraft emergency power systems;</p> <p>3.3 Aircraft auxiliary power system test flows;</p> <p>3.4 Aircraft emergency power system test flows;</p> <p>3.5 Methods of using basic tools and testing equipment;</p> <p>3.6 Methods of using AMMs;</p> <p>3.7 Methods of developing aircraft maintenance schemes.</p> <p>4.0 Essential skills</p> <p>4.1 Data analysis competence;</p> <p>4.2 Engineering technical report writing competence;</p> <p>4.3 Computer skills;</p> <p>4.4 Critical thinking;</p> <p>4.5 Problem-solving competence;</p> <p>4.6 Stress management;</p> <p>4.7 Teamwork;</p> <p>4.8 Communication skills.</p>
<p>DESCRIPTION OF THE END PRODUCT / SERVICE</p>	<p>Aircraft auxiliary and emergency power systems are tested in accordance with approved technical specifications and procedures.</p>
<p>CIRCUMSTANTIAL KNOWLEDGE</p>	<p>Detailed knowledge about:</p> <ol style="list-style-type: none"> 1. Safety operation of equipment and tools; 2. Occupational safety and health; 3. Safe disposal of materials.

OCCUPATION	AVIONICS MAINTENANCE ENGINEER	OCCUPATION CODE	
DUTY TITLE	PERFORM ANALYSIS AND ISOLATION OF FAULTS IN AIRCRAFT POWER GENERATION, DISTRIBUTION AND CONVERSION SYSTEMS	DUTY NO.	701
TASK TITLE	CONDUCT ANALYSIS AND ISOLATION OF FAULTS IN AIRCRAFT AUXILIARY AND EMERGENCY POWER SYSTEMS	TASK NO.	7017
PERFORMANCE CRITERIA	The person performing this task must be able to analyse and isolate faults in aircraft auxiliary and emergency power systems in accordance with the latest procedures approved by the TCAA or the Manufacturers maintenance manual.		
RANGE STATEMENT	<p>The task can be performed in an AMO's aircraft under the supervision of aircraft maintenance/release engineers.</p> <p>The equipment and tools to be used include:</p> <p>Equipment and tools:</p> <ol style="list-style-type: none"> 1. Personal protective equipment; 2. Computers with accessories; 3. Fitter's complete tool kit; 4. Electrician's complete tool kit; 5. Multimeters; 6. Heat guns; 7. Anti-static wrist straps; 8. Welding guns; 9. Crimping tools; 10. Connector pick-up and delivery tools; 11. Safety gear. 12. Work bench. <p>Materials:</p> <ol style="list-style-type: none"> 1. Fuses; 2. Strapping tapes; 3. Cleaners; 4. Pin cleaners; 5. Contact enhancers; 6. Splice tubes; 7. Conductors; 8. Welding materials; 9. Sealants; 10. Heat shrinkable sleeves. 		
EVIDENCE REQUIREMENT			

PRACTICAL PERFORMANCE	UNDERPINNING KNOWLEDGE
<p>The person performing this task must be able to do the following:</p> <ol style="list-style-type: none"> 1. Select tools equipment and safety gear; 2. Observe health and safety regulations 3. Interpret aircraft status reports; 4. Test aircraft auxiliary and emergency power systems; 5. Analyse and isolate faults according to the corresponding test reports and troubleshooting manuals; 6. Detect and diagnose faults in the following aircraft auxiliary and emergency power system components: <ol style="list-style-type: none"> a. APU generator; b. Ram air turbine generator; c. Ground power supply system; d. APU generator control unit; e. Auxiliary power supply voltage regulator; f. Auxiliary power supply load controller; g. Auxiliary power supply differential protection system; h. Auxiliary and emergency power fault and test panel; i. Auxiliary and emergency power system voltage, frequency and excitation control and protection system. 7. Detect and diagnose faults in the following aircraft DC power system circuits: <ol style="list-style-type: none"> a. APU generator; b. Ram air turbine generator; c. Ground power supply system; d. APU generator control unit; e. Auxiliary power supply voltage regulator; f. Auxiliary power supply load controller; g. Auxiliary power supply differential protection system; h. Auxiliary and emergency power fault and test panel; i. Auxiliary and emergency power system voltage, frequency and 	<p>Detailed knowledge about:</p> <p>1.0 Methods The person performing this task must be able to explain how to:</p> <ol style="list-style-type: none"> 1.1 Analyse aircraft auxiliary and emergency power system test reports; 1.2 Determine possible fault causes of aircraft auxiliary and emergency power systems; 1.3 Troubleshoot aircraft auxiliary and emergency power systems. <p>2.0 Principles The person performing this task must be able to explain the following principles:</p> <ol style="list-style-type: none"> 2.1 Working principles of aircraft auxiliary and emergency power systems; 2.2 Principles of diagnosing faults in aircraft auxiliary and emergency power systems. <p>3.0 Theories The person performing this task must be able to explain the following:</p> <ol style="list-style-type: none"> 3.1 Aircraft auxiliary and emergency power system fault analysis and isolation processes; 3.2 Methods of using basic tools and testing equipment; 3.3 Methods of using AMMs and WDM; 3.4 Methods of developing aircraft maintenance schemes; 3.5 Methods of using fault isolation manuals; 3.6 Methods of using component maintenance manuals; 3.7 Methods of connecting and overhauling electrical circuits; 3.8 Recognition and testing methods for electronic components; <p>4.0 Essential skills</p> <ol style="list-style-type: none"> 4.1 Data analysis competence; 4.2 Engineering technical report writing competence; 4.3 Computer skills; 4.4 Critical thinking; 4.5 Problem-solving competence; 4.6 Stress management;

<p>excitation control and protection system.</p> <ol style="list-style-type: none"> 8. Resolve all detected issues; 9. Perform final tests and sign task cards; 10. Submit task cards to the certification engineer for certification and aircraft delivery for use; 11. Restore the aircraft to its normal state. 12. Clean tools, equipment and the workplace; 13. Store tools equipment and safety gear; 	<ol style="list-style-type: none"> 4.7 Teamwork; 4.8 Communication skills.
<p>DESCRIPTION OF THE END PRODUCT / SERVICE</p>	<p>Faults in aircraft auxiliary and emergency power systems are analysed and isolated in accordance with approved technical specifications and procedures.</p>
<p>CIRCUMSTANTIAL KNOWLEDGE</p>	<p>Detailed knowledge about:</p> <ol style="list-style-type: none"> 1. Safety operation of equipment and tools; 2. Occupational safety and health; 3. Safe disposal of materials.

OCCUPATION	AVIONICS MAINTENANCE ENGINEER	OCCUPATION CODE	
DUTY TITLE	PERFORM ANALYSIS AND ISOLATION OF FAULTS IN AIRCRAFT POWER GENERATION, DISTRIBUTION AND CONVERSION SYSTEMS	DUTY NO.	701
TASK TITLE	CARRY OUT TESTING OF AIRCRAFT SECONDARY POWER SYSTEMS	TASK NO.	7018
PERFORMANCE CRITERIA	The person performing this task must be able to test aircraft secondary power systems in accordance with approved technical specifications and procedures.		
RANGE STATEMENT	<p>The task can be performed in an AMO's aircraft under the supervision of aircraft maintenance/release engineers.</p> <p>The equipment and tools to be used include:</p> <p>Equipment and tools:</p> <ol style="list-style-type: none"> 1. Personal protective equipment; 2. AC power system testing equipment; 3. Fitter's complete tool kit; 4. Electrician's complete tool kit 4. Multimeters; 5. Oscilloscopes; 6. Computers (with accessories); 7. Safety gear; 8. Work bench <p>Materials:</p> <ol style="list-style-type: none"> 1. Electrical jointing; 2. Wires; 3. Fuses; 4. Bundling ropes. 		
EVIDENCE REQUIREMENT			
PRACTICAL PERFORMANCE	UNDERPINNING KNOWLEDGE		
<p>The person performing this task must be able to do the following:</p> <ol style="list-style-type: none"> 1. Select tools, equipment and safety gear; 2. Observe health and safety regulations; 3. Interpret aircraft status reports; 4. Determine faults according to test reports, AMMs, etc.; 5. Detect and diagnose faults in the following system components: 	<p>Detailed knowledge about:</p> <p>1.0 Methods</p> <p>The person performing this task must be able to explain how to:</p> <ol style="list-style-type: none"> 1.1 Inquire and use maintenance task cards; 1.2 Test aircraft secondary power systems. <p>2.0 Principles</p> <p>The person performing this task must be able to explain the following principles:</p> <ol style="list-style-type: none"> 2.1 Working principles of aircraft DC power systems; 		

<ul style="list-style-type: none"> a. Transformer rectifier unit; b. Rotary inverter; c. Static inverter; <p>6. Detect and diagnose faults in the following systems and related circuits:</p> <ul style="list-style-type: none"> a. Transformer rectifier unit; b. Rotary inverter; c. Static inverter. <p>7. Perform final inspections and sign corresponding task cards;</p> <p>8. Submit task cards to the certification engineer for certification and aircraft delivery for use;</p> <p>9. Restore the aircraft to its normal state;</p> <p>10. Clean tools, equipment and the workplace,</p> <p>11. Store the tools ,equipment and safety gear.</p>	<p>2.2 Testing principles of aircraft DC power systems.</p> <p>3.0 Theories</p> <p>The person performing this task must be able to explain the following:</p> <ul style="list-style-type: none"> 3.1 Basic methods of aircraft maintenance; 3.2 Human factors in maintenance processes; 3.3 Basic types of aircraft secondary power systems; 3.4 Aircraft secondary power test flows; 3.5 Methods of using basic tools and testing equipment; 3.6 Methods of using AMM and WDMs; 3.7 Methods of developing aircraft maintenance schemes; 3.8 Applicable scope of civil aviation regulations. <p>4.0 Essential skills</p> <ul style="list-style-type: none"> 4.1 Data analysis competence; 4.2 Engineering technical report writing competence; 4.3 Computer skills; 4.4 Critical thinking; 4.5 Problem-solving competence; 4.6 Stress management; 4.7 Teamwork; 4.8 Communication skills.
<p>DESCRIPTION OF THE END PRODUCT / SERVICE</p>	<p>Testing of aircraft secondary power systems is performed in accordance approved technical specifications and procedures.</p>
<p>CIRCUMSTANTIAL KNOWLEDGE</p>	<p>Detailed knowledge about:</p> <ul style="list-style-type: none"> 1. Safety operation of equipment and tools; 2. Occupational health and safety; 3. AMMs.

OCCUPATION	AVIONICS MAINTENANCE ENGINEER	OCCUPATION CODE	
DUTY TITLE	PERFORM ANALYSIS AND ISOLATION OF FAULTS IN AIRCRAFT POWER GENERATION, DISTRIBUTION AND CONVERSION SYSTEMS	DUTY NO.	701
TASK TITLE	PERFORM ANALYSIS AND ISOLATION OF FAULTS IN AIRCRAFT SECONDARY POWER SYSTEMS	TASK NO.	7019
PERFORMANCE CRITERIA	The person performing this task must be able to analyse and isolate faults in aircraft secondary power systems in accordance with approved technical specifications and procedures.		
RANGE STATEMENT	<p>The task can be performed in an AMO's aircraft under the supervision of aircraft maintenance/release engineers.</p> <p>The equipment and tools to be used include:</p> <p>Equipment and tools:</p> <ol style="list-style-type: none"> 1. Personal protective equipment; 2. Computers with accessories; 3. Fitter's complete tool kit; 4. Electrician's complete tool kit; 4. Multimeters; 5. Heat guns; 6. Anti-static wrist straps; 7. Welding guns; 8. Crimping tools; 9. Connector pick-up and delivery tools. 10. Safety gear; 11. Work bench <p>Materials:</p> <ol style="list-style-type: none"> 1. Fuses; 2. Strapping tapes; 3. Cleaners; 4. Pin cleaners; 5. Contact enhancers; 6. Splice tubes; 7. Conductors; 8. Welding materials; 9. Sealants; 10. Heat shrinkable sleeves. 		
EVIDENCE REQUIREMENT			
PRACTICAL PERFORMANCE		UNDERPINNING KNOWLEDGE	

<p>The person performing this task must be able to do the following:</p> <ol style="list-style-type: none"> 1. Select tools, equipment and safety gear; 2. Observe health and safety regulations; 3. Interpret aircraft status reports; 4. Analyze and isolate faults according to the corresponding test reports and troubleshooting manuals; 5. Perform fault analysis of the following: <ol style="list-style-type: none"> a. Transformer rectifier unit; b. Rotary inverter; c. Static inverter; 6. Perform system-level fault analysis of the following: <ol style="list-style-type: none"> a. Transformer rectifier unit; b. Rotary inverter; c. Static inverter; d. Related busbars, circuits, switches, contactors and relays; e. Faults related to the DC power system; f. Faults related to the DC power system. 7. Isolate possible faults in: <ol style="list-style-type: none"> a. Transformer rectifier unit; b. Rotary inverter; c. Static inverter; d. Related busbars, circuits, switches, contactors and relays; e. Faults related to the DC power system; f. Faults related to the DC power system. 8. Perform final inspections and sign corresponding task cards; 9. Submit task cards to the certification engineer for certification and aircraft delivery for use; 10. Restore the aircraft to its normal state. 11. Clean the workplace, tools and equipment; 12. Arrange and store the tools and equipment; 	<p>Detailed knowledge about:</p> <p>1.0 Methods</p> <p>The person performing this task must be able to explain how to:</p> <ol style="list-style-type: none"> 1.1 Perform fault analysis and isolation for secondary power systems; 1.2 Prejudge and predict faults in secondary power systems. <p>2.0 Principles</p> <p>The person performing this task must be able to explain the following principles:</p> <ol style="list-style-type: none"> 2.1 Working principles of transformer rectifier units; 2.2 Working principles of rotary inverters; 2.3 Working principles of static inverters; 2.4 Logic and priority of power conversion; 2.5 Main components and working principles of secondary power systems. <p>3.0 Theories</p> <p>The person performing this task must be able to explain the following:</p> <ol style="list-style-type: none"> 3.1 Aircraft secondary power system fault analysis and isolation processes; 3.2 Methods of using basic tools and testing equipment; 3.3 Methods of using AMMs and WDM; 3.4 Methods of developing aircraft maintenance schemes; 3.5 Methods of using fault isolation manuals; 3.6 Methods of using component maintenance manuals; 3.7 Methods of connecting and overhauling electrical circuits; 3.8 Recognition and testing methods for electronic components. <p>4.0 Essential skills</p> <ol style="list-style-type: none"> 4.1 Fault analysis, prejudgment and prediction competence; 4.2 Engineering technical report writing competence; 4.3 Computer skills; 4.4 Critical thinking; 4.5 Problem-solving competence;
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	<p>4.6 Stress management;</p> <p>4.7 Teamwork;</p> <p>4.8 Communication skills.</p>
DESCRIPTION OF THE END PRODUCT / SERVICE	<p>Analysis and isolation of faults in aircraft secondary power systems is performed in accordance with approved technical specifications, procedures and policies.</p>
CIRCUMSTANTIAL KNOWLEDGE	<p>Detailed knowledge about:</p> <ol style="list-style-type: none"> 1. Safety operation of equipment and tools; 2. Occupational health and safety; 3. AMMs.

OCCUPATION	AVIONICS MAINTENANCE ENGINEER	OCCUPATION CODE	
DUTY TITLE	PERFORM ANALYSIS AND ISOLATION OF FAULTS IN AIRCRAFT POWER GENERATION, DISTRIBUTION AND CONVERSION SYSTEMS	DUTY NO.	701
TASK TITLE	IMPLEMENT TESTING OF AIRCRAFT POWER TRANSMISSION AND DISTRIBUTION SYSTEMS	TASK NO.	70110
PERFORMANCE CRITERIA	The person performing this task must be able to test aircraft power transmission and distribution systems in accordance with approved technical specifications and procedures.		
RANGE STATEMENT	<p>The task can be performed in an AMO's aircraft under the supervision of aircraft maintenance/release engineers.</p> <p>The equipment and tools to be used include:</p> <p>Equipment and tools:</p> <ol style="list-style-type: none"> 1. Personal protective equipment; 2. AC power system testing equipment; 3. Fitter's complete tool kit. 4. Electrician's complete tool kit; 4. Multimeters; 5. Oscilloscopes; 6. Computers (with accessories). 7. Safety gear; 8. Work bench. 9. Safety gear <p>Materials:</p> <ol style="list-style-type: none"> 1. Electrical jointing; 2. Wires; 3. Fuses; 4. Bundling ropes. 		
EVIDENCE REQUIREMENT			
PRACTICAL PERFORMANCE	UNDERPINNING KNOWLEDGE		
<p>The person performing this task must be able to do the following:</p> <ol style="list-style-type: none"> 1. Select tools, equipment and safety gear; 2. Observe health and safety regulations; 3. Interpret aircraft status reports; 4. Determine faults according to test reports, AMMs, etc.; 	<p>Detailed knowledge about:</p> <p>3.8 Methods</p> <p>The person performing this task must be able to explain how to:</p> <ol style="list-style-type: none"> 1.1 Observe voltage and current parameters of aircraft power transmission and distribution systems; 1.2 Determine the status of aircraft power transmission and distribution systems; 		

<p>5. Detect and diagnose faults in the following systems and related circuits:</p> <ol style="list-style-type: none"> a. Power distribution panel; b. Power switch panel; c. Busbars; d. Circuits; e. Switches; f. Contactors; g. Relays; h. Circuit breakers. <p>6. Perform final inspections and sign corresponding task cards;</p> <p>7. Submit task cards to the certification engineer for certification and aircraft delivery for use;</p> <p>8. Restore the aircraft to its normal state.</p> <p>9. Clean tools, equipment and the workplace,</p> <p>10. Store tools, equipment and safety gear;</p>	<p>1.3 Test aircraft power transmission and distribution systems.</p> <p>2.0 Principles The person performing this task must be able to explain the following principles:</p> <ol style="list-style-type: none"> 2.1 Normal and abnormal manifestations of aircraft power transmission and distribution systems; 2.2 Working principles of aircraft power transmission and distribution systems; 2.3 Testing principles of aircraft power transmission and distribution systems. <p>3.0 Theories The person performing this task must be able to explain the following:</p> <ol style="list-style-type: none"> 3.1 Basic methods of aircraft maintenance; 3.2 Human factors in maintenance processes; 3.3 Basic types of aircraft DC power systems; 3.4 Aircraft DC power test flows; 3.5 Methods of using basic tools and testing equipment; 3.6 Methods of using AMMs; 3.7 Methods of developing aircraft maintenance schemes; 3.8 Applicable scope of civil aviation regulations. <p>4.0 Essential skills</p> <ol style="list-style-type: none"> 4.1 Data analysis competence; 4.2 Engineering technical report writing competence; 4.3 Computer skills; 4.4 Critical thinking; 4.5 Problem-solving competence; 4.6 Stress management; 4.7 Teamwork; 4.8 Communication skills.
<p>DESCRIPTION OF THE END PRODUCT / SERVICE</p>	<p>Testing of aircraft power transmission and distribution systems is conducted in accordance with approved technical specifications, procedures and policies.</p>
<p>CIRCUMSTANTIAL KNOWLEDGE</p>	<p>Detailed knowledge about:</p> <ol style="list-style-type: none"> 1. Safety operation of equipment and tools; 2. Occupational health and safety; 3. AMMs.

OCCUPATION	AVIONICS MAINTENANCE ENGINEER	OCCUPATION CODE	
DUTY TITLE	PERFORM ANALYSIS AND ISOLATION OF FAULTS IN AIRCRAFT POWER GENERATION, DISTRIBUTION AND CONVERSION SYSTEMS	DUTY NO.	701
TASK TITLE	CONDUCT ANALYSIS AND ISOLATION OF FAULTS IN AIRCRAFT POWER TRANSMISSION AND DISTRIBUTION SYSTEMS	TASK NO.	70111
PERFORMANCE CRITERIA	The person performing this task must be able to analyse and isolate faults in aircraft power transmission and distribution systems in accordance with approved technical specifications and procedures.		
RANGE STATEMENT	<p>The task can be performed in an AMO's aircraft under the supervision of aircraft maintenance/release engineers.</p> <p>The equipment and tools to be used include:</p> <p>Equipment and tools:</p> <ol style="list-style-type: none"> 1. Personal protective equipment; 2. Computers; 3. Fitter's complete tool kit; 4. Electrician's complete tool kit; 5. Multimeters; 6. Heat guns; 7. Anti-static wrist straps; 8. Welding guns; 9. Crimping tools; 10. Connector pick-up and delivery tools; 11. Safety gear; 12. Work bench. <p>Materials:</p> <ol style="list-style-type: none"> 1. Fuses; 2. Strapping tapes; 3. Cleaners; 4. Pin cleaners; 5. Splice tubes; 6. Conductors; 7. Welding materials; 8. Sealants; 9. Heat shrinkable sleeves. 		
EVIDENCE REQUIREMENT			
PRACTICAL PERFORMANCE		UNDERPINNING KNOWLEDGE	

<p>The person performing this task must be able to do the following:</p> <ol style="list-style-type: none"> 1. Select tools, equipment and safety gear; 2. Observe health and safety regulations; 3. Interpret aircraft status reports; 4. Analyze and isolate faults according to the corresponding test reports and troubleshooting manuals; 5. Perform fault analysis of the following: <ol style="list-style-type: none"> a. Power distribution panel; b. Power switch panel; c. Busbars; d. Circuits; e. Switches; f. Contactors; g. Relays; h. Circuit breakers. 6. Perform system-level fault analysis of the following: <ol style="list-style-type: none"> a. Power distribution panel; b. Power switch panel; c. Busbars; d. Circuits; e. Switches; f. Contactors; g. Relays; h. Circuit breakers; i. Complex faults related to power transmission and distribution systems. 7. Isolate possible faults in: <ol style="list-style-type: none"> a. Power distribution panel; b. Power switch panel; c. Busbars; d. Circuits; e. Switches; f. Contactors; g. Relays; h. Circuit breakers; i. Complex faults related to power transmission and distribution systems. 8. Perform final inspections and sign corresponding task cards; 9. Submit task cards to the certification engineer for certification and aircraft delivery for use; 10. Restore the aircraft to its normal state. 	<p>Detailed knowledge about:</p> <p>1.0 Methods The person performing this task must be able to explain how to:</p> <ol style="list-style-type: none"> 1.1 Perform fault analysis and isolation for power transmission and distribution systems; 1.2 Prejudge and predict faults in power transmission and distribution systems and causes of the problems. <p>2.0 Principles The person performing this task must be able to explain the following principles:</p> <ol style="list-style-type: none"> 2.1 Working principles of power distribution panels; 2.2 Working principles of power switch panels; 2.3 Working principles of busbars; 2.4 Working principles of circuits; 2.5 Working principles of switches; 2.6 Working principles of contactors; 2.7 Working principles of relays; 2.8 Working principles of circuit breakers; 2.9 Logic and priority of power conversion; 2.10 Working principles of aircraft power transmission and distribution systems. <p>3.0 Theories The person performing this task must be able to explain the following:</p> <ol style="list-style-type: none"> 3.1 Aircraft power transmission and distribution system fault analysis and isolation processes; 3.2 Methods of using basic tools and testing equipment; 3.3 Methods of using AMMs; 3.4 Methods of developing aircraft maintenance schemes; 3.5 Methods of using fault isolation manuals; 3.6 Methods of using component maintenance manuals; 3.7 Methods of connecting and overhauling electrical circuits; 3.8 Recognition and testing methods for electronic components. <p>4.0 Essential skills:</p> <ol style="list-style-type: none"> 4.1 Data analysis skills;
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<p>11. Clean tools equipment; and the workplace, 12. Store tools, equipment and safety gear;</p>	<p>4.2 Engineering technical report writing competence; 4.3 Computer skills; 4.4 Critical thinking; 4.5 Problem-solving skills; 4.6 Stress management; 4.7 Teamwork; 4.8 Communication skills.</p>
<p>DESCRIPTION OF THE END PRODUCT / SERVICE</p>	<p>Analysis and isolation of faults in aircraft power transmission and distribution systems are conducted in accordance with approved technical specifications, procedures and policies.</p>
<p>CIRCUMSTANTIAL KNOWLEDGE</p>	<p>Detailed knowledge about:</p> <ol style="list-style-type: none"> 1. Safety operation of equipment and tools; 2. Occupational health and safety; 3. Safe disposal of materials.

OCCUPATION	AVIONICS MAINTENANCE ENGINEER	OCCUPATION CODE	
DUTY TITLE	PERFORM ANALYSIS AND ISOLATION OF FAULTS IN AIRCRAFT POWER GENERATION, DISTRIBUTION AND CONVERSION SYSTEMS	DUTY NO.	701
TASK TITLE	CARRY OUT ASSEMBLY OF TYPICAL AIRCRAFT POWER SYSTEM CIRCUITS.	TASK NO.	70112
PERFORMANCE CRITERIA	The person performing this task must be able to assemble typical aircraft power system circuits in accordance with approved technical specifications and procedures.		
RANGE STATEMENT	<p>The task can be performed in an AMO's aircraft under the supervision of a certified person.</p> <p>The equipment and tools to be used include:</p> <p>Equipment and tools:</p> <ol style="list-style-type: none"> 1. Personal protective equipment; 2. DC voltage-stabilized power; 3. Computers with accessories; 4. Multimeters; 5. Fitter's complete tool kit; 6. Electrician's complete tool kit 7. Wire cutters; 8. Press pliers; 9. Soldering iron kits; 10. Pin pushing tools; 11. Retention test tools. 12. Safety gear 13. Work bench <p>Materials:</p> <ol style="list-style-type: none"> 1. Conductors; 2. Heat shrinkable tubes; 3. Detinning tapes; 4. Contact cleaners and electrical jointing; 5. Lugs; 6. Switches; 7. Signal lights; 8. Strapping tapes; 9. Pins. 		
EVIDENCE REQUIREMENT			
PRACTICAL PERFORMANCE		UNDERPINNING KNOWLEDGE	
The person performing this task must be able to do the following:		Detailed knowledge about:	

<ol style="list-style-type: none"> 1. Select tools, equipment and safety gear; 2. Observe health and safety regulations; 3. Consult aircraft circuit assembly manuals; 4. Select power circuit devices that meet requirements: <ol style="list-style-type: none"> a. Electrical plugs; b. Conductors; c. Lugs; d. Wiring ducts; e. Switches; f. Signal lights. 5. Design and install circuits according to circuit diagrams; 6. Perform tests on the following items: <ol style="list-style-type: none"> a. Circuit conductivity test; b. Circuit voltage check; c. Firmness of soldered and crimping joints. 7. Perform final inspections and sign corresponding task cards; 8. Clean tools, equipment and the workplace; 9. Store tools, equipment and safety gear. 	<p>1.0 Methods The person performing this task must be able to explain how to:</p> <ol style="list-style-type: none"> 1.1 Consult aircraft circuit making manuals; 1.2 Make typical circuits of power systems. <p>2.0 Principles The person performing this task must be able to explain the following principles:</p> <ol style="list-style-type: none"> 2.1 Working principles of typical circuits of power systems; 2.2 Component installation specifications; 2.3 Principles of conductor crimping and soldering; 2.4 Principles of wiring terminal installation; 2.5 Principles of voltage and resistance measurement. <p>3.0 Theories The person performing this task must be able to explain the following:</p> <ol style="list-style-type: none"> 3.1 Methods of using basic tools and testing equipment; 3.2 Methods of using AMMs; 3.3 General steps for electrical component installation. <p>4.0 Essential skills</p> <ol style="list-style-type: none"> 4.1 Fault analysis, prejudice and prediction competence; 4.2 Engineering technical report writing competence; 4.3 Computer skills; 4.4 Critical thinking; 4.5 Problem-solving competence; 4.6 Stress management; 4.7 Teamwork; 4.8 Communication skills.
<p>DESCRIPTION OF THE END PRODUCT / SERVICE</p>	<p>Assembly of typical aircraft power system circuits is performed in accordance with approved standards and procedures.</p>
<p>CIRCUMSTANTIAL KNOWLEDGE</p>	<p>Detailed knowledge about:</p> <ol style="list-style-type: none"> 1. Safety operation of equipment and tools; 2. Occupational health and safety; 3. AMMs.

OCCUPATION	AVIONICS MAINTENANCE ENGINEER	OCCUPATION CODE	
DUTY TITLE	CONDUCT ANALYSIS AND ISOLATION OF FAULTS IN AIRCRAFT LIGHTING SYSTEMS	DUTY NO.	702
TASK TITLE	CARRY OUT MANAGEMENT OF AIRCRAFT LIGHTING SYSTEM MAINTENANCE	TASK NO.	7021
PERFORMANCE CRITERIA	The person performing this task must be able to manage the maintenance of aircraft lighting system as per approved technical specifications and regulations.		
RANGE STATEMENT	<p>The task can be performed in an AMO under the supervision of senior technicians or release engineers.</p> <p>The equipment and tools to be used include:</p> <ol style="list-style-type: none"> 1. Maintenance documents: airworthiness regulations, rules, procedures and maintenance manuals; 2. Fitter's complete tool kit; 3. Electrician's complete tool kit; 4. Aviation materials and consumables; 5. Safety gear; 6. Work bench; 7. Computer with accessories; 		
EVIDENCE REQUIREMENT			
PRACTICAL PERFORMANCE		UNDERPINNING KNOWLEDGE	
<p>The person performing this task must be able to do the following:</p> <ol style="list-style-type: none"> 1. Select tools, equipment and safety gear; 2. Observe health and safety regulations; 3. Assign responsibilities and duties to appropriate personnel; 4. Develop the maintenance plan for aircraft lighting systems; 5. Organize the implementation of aircraft lighting system maintenance; 6. Interpret principles of aircraft lighting systems; 7. Establish workplace communication; 8. Supervise maintenance work; 9. Conduct evaluation of maintenance staff; 10. Establish an effective incentive mechanism; 		<p>Detailed knowledge about:</p> <p>1.0 Methods</p> <p>The person performing this task must be able to explain how to:</p> <ol style="list-style-type: none"> 1.1 Identify fault causes; 1.2 Isolate faults. <p>2.0 Principles</p> <p>The person performing this task must be able to explain the following principles:</p> <ol style="list-style-type: none"> 2.1 Principles of aircraft lighting systems; 2.2 Principles of systems related to aircraft lighting systems; 2.3 Principles of connecting aircraft lighting system circuits with various aircraft systems. <p>3.0 Theories</p> <p>The person performing this task must be able to explain the following:</p> <ol style="list-style-type: none"> 3.1 Use of the aircraft lighting systems together with other aircraft systems and use of related 	

<ul style="list-style-type: none"> 11. Prepare maintenance budget; 12. Control spares and consumables' stocks; 13. Control movement of tools and equipment; 14. Clean tools, equipment and the workplace; 15. Store tools, equipment and safety gear. 	<p>theoretical knowledge for practical fault isolation as well as isolation methods after knowing well about lighting system theory points.</p> <p>4.0 Essential skills</p> <ul style="list-style-type: none"> 4.1 Teamwork skills; 4.2 Communication skills; 4.3 Customer service competence; 4.4 Report writing competence; 4.5 Computer application competence.
<p>DESCRIPTION OF THE END PRODUCT / SERVICE</p>	<p>Management of aircraft lighting system maintenance is carried out in accordance with approved technical specifications and procedures.</p>
<p>CIRCUMSTANTIAL KNOWLEDGE</p>	<p>Detailed knowledge about:</p> <ul style="list-style-type: none"> 1. Safety operation of equipment and tools; 2. Occupational health and safety; 3. AMMs.

OCCUPATION	AVIONICS MAINTENANCE ENGINEER	OCCUPATION CODE	
DUTY TITLE	CONDUCT ANALYSIS AND ISOLATION OF FAULTS IN AIRCRAFT LIGHTING SYSTEMS	DUTY NO.	702
TASK TITLE	IMPLEMENT TESTING OF AIRCRAFT INTERIOR LIGHTING SYSTEMS	TASK NO.	7022
PERFORMANCE CRITERIA	The person performing this task must be able to test aircraft interior lighting systems in accordance with approved technical specifications and procedures.		
RANGE STATEMENT	<p>The task can be performed in an AMO under the supervision of senior technicians or release engineers.</p> <p>The equipment and tools to be used include:</p> <p>Equipment and tools:</p> <ol style="list-style-type: none"> 1. Personal protective equipment; 2. Computers with accessories; 3. Fitter's tool kit; 4. Electrician's tool kit; 4. HAGNER evacuation route photometers; 5. Multimeters; 6. Heat guns; 7. Anti-static wrist straps; 8. Welding guns; 9. Crimping tools; 10. Connector pick-up and delivery tools; 11. Instrument screwdrivers; 12. Safety gear; 13. Work bench. <p>Materials:</p> <ol style="list-style-type: none"> 1. Fuses; 2. Strapping tapes; 3. Cleaners; 4. Pin cleaners; 5. Contact enhancers; 6. Splice tubes; 7. Conductors; 8. Welding materials; 9. Sealants; 10. Heat shrinkable sleeves. 		
EVIDENCE REQUIREMENT			

PRACTICAL PERFORMANCE	UNDERPINNING KNOWLEDGE
<p>The person performing this task must be able to do the following:</p> <ol style="list-style-type: none"> 1. Select tools, equipment and safety gear; 2. Observe health and safety regulations; 3. Interpret aircraft status reports; 4. Interpret service manual and systems circuit diagrams; 5. Assign responsibilities and duties to appropriate personnel; 6. Develop the testing plan for aircraft interior lighting systems; 7. Conduct functional tests of different sections of the system as follows; <ol style="list-style-type: none"> a. The aircraft's normal lights; b. The cockpit lighting system; c. The instrument panel light system; d. All warning lights and indicator lights on the overhead panel; e. The standby compass lights; f. The PFD and ND brightness displays; g. The instrument panel backlight; h. The cabin lighting; i. The overhead bin top lights; j. The passenger call lights; k. The overhead bin sidewall lights; l. The attendant top lights; m. The emergency lights; n. The galley lighting; o. The lavatory lighting; p. The service lighting in respective areas; q. The lighting system through relevant aircraft equipment. 	<p>Detailed knowledge about:</p> <p>1.0 Methods</p> <p>The person performing this task must be able to explain how to:</p> <ol style="list-style-type: none"> 1.1 Test aircraft interior lighting systems; 1.2 Understand the significance of testing aircraft lighting systems; 1.3 Eliminate faults after testing. <p>2.0 Principles</p> <p>The person performing this task must be able to explain the following principles:</p> <ol style="list-style-type: none"> 2.1 Principles of testing aircraft interior lighting systems; 2.2 Influence factors of aircraft interior lighting system testing on other systems; 2.3 Testing and working principles of electronic and electrical components of aircraft interior lighting systems. <p>3.0 Theories</p> <p>The person performing this task must be able to explain the following:</p> <ol style="list-style-type: none"> 3.1 Basic characteristics of aircraft interior lighting system testing; 3.2 Basic operation of aircraft interior lighting system testing. <p>4.0 Essential skills</p> <ol style="list-style-type: none"> 4.1 Teamwork skills; 4.2 Communication skills; 4.3 Operation competence; 4.4 Report writing competence; 4.5 Computer application competence; 4.6 Manual usage and reading competence.

<ul style="list-style-type: none"> 7. Perform wiring tests; 8. Supervise testing activity and verify results; 9. Test for earth leakage; 10. Resolve all observed issues; 11. Sign work cards; 12. Submit task cards for certification and aircraft delivery for use; 13. Restore the aircraft to its normal state; 12. Clean tools, equipment and the workplace; 13. Store tools, equipment and safety gear; 	
<p>DESCRIPTION OF THE END PRODUCT / SERVICE</p>	<p>Testing of aircraft interior lighting systems is conducted in accordance with approved technical specifications and procedures.</p>
<p>CIRCUMSTANTIAL KNOWLEDGE</p>	<p>Detailed knowledge about:</p> <ul style="list-style-type: none"> 1. Safety operation of equipment and tools; 2. Occupational health and safety; 3. AMMs.

OCCUPATION	AVIONICS MAINTENANCE ENGINEER	OCCUPATION CODE	
DUTY TITLE	CONDUCT ANALYSIS AND ISOLATION OF FAULTS IN AIRCRAFT LIGHTING SYSTEMS	DUTY NO.	702
TASK TITLE	PERFORM ANALYSIS AND ISOLATION OF FAULTS IN AIRCRAFT INTERIOR LIGHTING SYSTEMS	TASK NO.	7023
PERFORMANCE CRITERIA	The person performing this task must be able to analyse and isolate faults in aircraft interior lighting systems in accordance with approved technical specifications and procedures.		
RANGE STATEMENT	<p>The task can be performed in an AMO under the supervision of senior technicians or release engineers.</p> <p>The equipment and tools to be used include:</p> <p>Equipment and tools:</p> <ol style="list-style-type: none"> 1. Personal protective equipment; 2. Computers with accessories; 3. Fitter's complete tool kit; 4. Electrician's complete tool kit; 4. HAGNER evacuation route photometers; 5. Multimeters; 6. Heat guns; 7. Anti-static wrist straps; 8. Welding guns; 9. Crimping tools; 10. Connector pick-up and delivery tools; 11. Instrument screwdrivers; 12. Safety gear; 13. Work bench. <p>Materials:</p> <ol style="list-style-type: none"> 1. Fuses; 2. Strapping tapes; 3. Cleaners; 4. Pin cleaners; 5. Contact enhancers; 6. Splice tubes; 7. Conductors; 8. Welding materials; 9. Sealants; 10. Heat shrinkable sleeves. 		
EVIDENCE REQUIREMENT			
PRACTICAL PERFORMANCE		UNDERPINNING KNOWLEDGE	

<p>The person performing this task must be able to do the following:</p> <ol style="list-style-type: none"> 1. Select tools, equipment and safety gear; 2. Observe health and safety regulations; 3. Assign responsibilities and duties to appropriate personnel; 4. Develop maintenance plan for analyzing and isolating faults in aircraft interior lighting systems; 5. Supervise the implementation of the maintenance plan; 6. Organize team members to carry out the activity; 7. Promote the conduct and implementation of work place communication; 8. Establish an effective incentive mechanism; 9. Prepare a maintenance budget; <p>10. Perform inspections and tests on the following functions:</p> <ol style="list-style-type: none"> a. The aircraft's normal state; b. The cockpit lighting system's normal state; c. The instrument panel light states; d. The states of all warning lights and indicator lights on the overhead panel; e. The standby compass light states; f. The PFD and ND brightness display states; g. The instrument panel backlight states; h. The cabin lighting states; i. The overhead bin top lights; j. The passenger call lights; k. The overhead bin sidewall lights; l. The attendant top lights; m. The emergency lights; n. The galley lighting states; o. The lavatory lighting states; p. The service lighting states in respective areas; q. The lighting system states through relevant aircraft equipment. <p>11. Isolate faults based on tested states, rules and airworthiness requirements;</p>	<p>Detailed knowledge about:</p> <p>1.0 Methods</p> <p>The person performing this task must be able to explain how to:</p> <ol style="list-style-type: none"> 1.1 Analyse faults in interior lighting systems; 1.2 Isolate faults in interior lighting systems. <p>2.0 Principles</p> <p>The person performing this task must be able to explain the following:</p> <ol style="list-style-type: none"> 2.1 Principles of occurrence of faults in interior lighting systems; 2.2 Principles of isolation of faults in interior lighting systems; 2.3 Working principles of interior lighting systems. <p>3.0 Theories</p> <p>The person performing this task must be able to explain the following principles:</p> <ol style="list-style-type: none"> 3.1 Basic characteristics of aircraft interior lighting systems; 3.2 Basic components of aircraft interior lighting systems; 3.3 Possible sources of faults in aircraft interior lighting systems. <p>4.0 Essential skills</p> <ol style="list-style-type: none"> 4.1 Teamwork skills; 4.2 Communication skills; 4.3 Fault analysis and isolation competence; 4.4 Report writing competence; 4.5 Standard circuit construction competence; 4.6 Standard mechanical construction competence; 4.7 Effective work execution competence.
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<p>12. Check for normality after fault isolation;</p> <p>13. Analyze the causes of faults;</p> <p>14. Analyze the connection schematic diagrams of aircraft interior lighting systems;</p> <p>15. Analyze possible locations of faults in aircraft interior lighting systems;</p> <p>16. Perform electronic and electrical reconstruction if faults are not isolated;</p> <p>17. Conduct circuit tests;</p> <p>18. Follow safety precautions for circuit construction;</p> <p>19. Sign work cards and release the aircraft for delivery;</p> <p>20. Return the aircraft to its initial normal state.</p> <p>21. Clean tools, equipment and the workplace ;</p> <p>22. Store tools, equipment and safety gear.</p>	
<p>DESCRIPTION OF THE END PRODUCT / SERVICE</p>	<p>Analysis and isolation of faults in aircraft interior lighting systems are performed in accordance with approved technical specifications and procedures.</p>
<p>CIRCUMSTANTIAL KNOWLEDGE</p>	<p>Detailed knowledge about:</p> <ol style="list-style-type: none"> 1. Safety operation of equipment and tools; 2. Occupational health and safety; 3. AMMs.

OCCUPATION	AVIONICS MAINTENANCE ENGINEER	OCCUPATION CODE	
DUTY TITLE	CONDUCT ANALYSIS AND ISOLATION OF FAULTS IN AIRCRAFT LIGHTING SYSTEMS	DUTY NO.	702
TASK TITLE	IMPLEMENT TESTING OF AIRCRAFT EXTERIOR LIGHTING SYSTEMS	TASK NO.	7024
PERFORMANCE CRITERIA	The person performing this task must be able to test aircraft exterior lighting systems in accordance with approved technical specifications and procedures.		
RANGE STATEMENT	<p>The task can be performed in an AMO under the supervision of senior technicians or release engineers.</p> <p>The equipment and tools to be used include:</p> <p>Equipment and tools:</p> <ol style="list-style-type: none"> 1. Personal protective equipment; 2. Computers with accessories; 3. Fitter's complete tool kit; 4. Electrician's complete tool kit; 4. Multimeters; 5. Heat guns; 6. Anti-static wrist straps; 7. Soldering guns; 8. Crimping tools; 9. Connector pick-up and delivery tools; 10. Safety gear; 11. Work bench <p>Materials:</p> <ol style="list-style-type: none"> 1. Locking wires; 2. Straps; 3. Cleaners; 4. Contact cleaners; 5. Contact enhancers; 6. Electrical jointing; 7. Wires; 8. Soldering materials; 9. Sealants and heat shrinkable sleeves; 10. Aerial pins or receptacles; 11. Splice tubes; 12. Lugs; 13. Cotton gloves; 14. Rubber gloves. 		
EVIDENCE REQUIREMENT			
PRACTICAL PERFORMANCE		UNDERPINNING KNOWLEDGE	

<p>The person performing this task must be able to do the following:</p> <ol style="list-style-type: none"> 1. Select tools, equipment and safety gear; 2. Observe health and safety regulations; 3. Verify aircraft status reports; 4. Prepare service manuals required for performing the task; 5. Assign responsibilities and duties to maintenance personnel; 6. Develop the maintenance plan for aircraft exterior lighting systems; 7. Supervise the implementation of aircraft exterior lighting system maintenance; 8. Test aircraft exterior lighting systems; 9. Perform inspections and tests on the following functions: <ol style="list-style-type: none"> a. The aircraft's normal state; b. The exterior lighting system's normal state; c. The taxi light states; d. The landing light states; e. The runway turnoff light states; f. The wing illumination light states; g. The wing light states; h. The take-off light states; i. The navigation light states; j. The beacon light states; k. The wingtip strobe light states; l. The tail strobe light states; m. The fuselage upper and lower anti-collision light states. 10. Replace faulty items according to tested states; 12. Sign work cards; 13. Submit task cards for certification and aircraft delivery for use; 14. Restore the aircraft to its normal state. 13. Clean tools, equipment and the workplace; 14. Store tools, equipment and safety gear; 	<p>Detailed knowledge about:</p> <p>1.0 Methods The person performing this task must be able to explain how to:</p> <ol style="list-style-type: none"> 1.1 Understand methods for testing aircraft exterior lighting systems; 1.2 Test aircraft exterior lighting systems. <p>2.0 Principles The person performing this task must be able to explain the following principles:</p> <ol style="list-style-type: none"> 2.1 Inspection and connection of lighting equipment; 2.2 Light intensity and colour testing; 2.3 Troubleshooting and repair; 2.4 Compliance with standards and procedures; 2.5 Data recording and analysis. <p>3.0 Theories The person performing this task must be able to explain the following:</p> <ol style="list-style-type: none"> 3.1 Basic characteristics of aircraft exterior lighting system testing; 3.2 Basic operation of aircraft exterior lighting system testing. <p>4.0 Essential skills</p> <ol style="list-style-type: none"> 4.1 Teamwork skills; 4.2 Communication skills; 4.3 Report writing competence; 4.4 Computer application competence; 4.5 Hands-on competence; 4.6 Competence in using and inquiring maintenance manual; 4.7 Competence in standard electronic and electrical construction; 4.8 Competence in standard mechanical construction.
<p>DESCRIPTION OF THE END PRODUCT / SERVICE</p>	<p>Testing of aircraft exterior lighting systems is performed in accordance with approved technical specifications and procedures.</p>

CIRCUMSTANTIAL KNOWLEDGE	Detailed knowledge about: <ol style="list-style-type: none">1. Safety operation of equipment and tools;2. Occupational health and safety;3. AMMs.
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OCCUPATION	AVIONICS MAINTENANCE ENGINEER	OCCUPATION CODE	
DUTY TITLE	CONDUCT ANALYSIS AND ISOLATION OF FAULTS IN AIRCRAFT LIGHTING SYSTEMS	DUTY NO.	702
TASK TITLE	CONDUCT ANALYSIS AND ISOLATION OF FAULTS IN AIRCRAFT EXTERIOR LIGHTING SYSTEMS	TASK NO.	7025
PERFORMANCE CRITERIA	The person performing this task must be able to analyze and isolate faults in aircraft exterior lighting systems in accordance with approved technical specifications and procedures.		
RANGE STATEMENT	<p>The task can be performed in an AMO under the supervision of senior technicians or release engineers.</p> <p>The equipment and tools to be used include:</p> <p>Equipment and tools:</p> <ol style="list-style-type: none"> 1. Personal protective equipment; 2. Computers with accessories; 3. Electrician's complete tool kit; 4. Multimeters; 5. Heat guns; 6. Anti-static wrist straps; 7. Soldering guns; 8. Crimping tools; 9. Connector pick-up and delivery tools; 10. Safety gear; 11. Work bench. <p>Materials:</p> <ol style="list-style-type: none"> 1. Locking wires; 2. Straps; 3. Cleaners; 4. Contact cleaners; 5. Contact enhancers; 6. Electrical jointing; 7. Wires; 8. Soldering materials; 9. Sealants and heat shrinkable sleeves; 10. Aerial pins or receptacles; 11. Splice tubes; 12. Lugs; 13. Cotton gloves; 14. Rubber gloves. 		
EVIDENCE REQUIREMENT			

PRACTICAL PERFORMANCE	UNDERPINNING KNOWLEDGE
<p>The person performing this task must be able to do the following:</p> <ol style="list-style-type: none"> 1. Select tools, equipment and safety gear; 2. Observe health and safety regulations; 3. Assign responsibilities and duties to maintenance personnel; 4. Develop maintenance plan for analyzing and isolating faults in aircraft exterior lighting systems; 5. Supervise the implementation of the maintenance plan; 7. Organize team members to prepare for maintenance work; 8. Comply with fuel work area safety requirements; 9. Promote workplace communication; 10. Evaluate results; 11. Establish an effective incentive mechanism; 12. Prepare a maintenance budget; 13. Perform inspections and tests on the following functions: <ol style="list-style-type: none"> a. The aircraft's normal state; b. The exterior lighting system's normal state; c. The taxi light states; d. The landing light states; e. The runway turnoff light states; f. The wing illumination light states; g. The wing light states; h. The take-off light states; i. The navigation light states; j. The beacon light states; k. The wingtip strobe light states; l. The tail strobe light states; m. The fuselage upper and lower anti-collision light states. 14. Isolate faults based on tested states, rules and airworthiness requirements; 15. Replace corresponding faulty items according to rule requirements and airworthiness standards; 16. Check for normality after replacement or isolation of faulty items; 	<p>Detailed knowledge about:</p> <p>1.0 Methods</p> <p>The person performing this task must be able to explain how to:</p> <ol style="list-style-type: none"> 1.1 Analyse faults in exterior lighting systems; 1.2 Isolate faults in exterior lighting systems. <p>2.0 Principles</p> <p>The person performing this task must be able to explain the following principles:</p> <ol style="list-style-type: none"> 2.1 Inspection of lighting elements; 2.2 Failure mode analysis; 2.3 Data recording and analysis; 2.4 Compliance with standards and procedures; 2.5 Safety and environmental protection considerations; 2.6 Electrical interlocking and isolation. <p>3.0 Theories</p> <p>The person performing this task must be able to explain the following:</p> <ol style="list-style-type: none"> 3.1 Basic characteristics of aircraft exterior lighting systems; 3.2 Basic components of aircraft exterior lighting systems; 3.3 Possible sources of faults in aircraft exterior lighting systems. <p>4.0 Essential skills</p> <ol style="list-style-type: none"> 4.1 Teamwork skills; 4.2 Communication skills; 4.3 Fault analysis and isolation competence; 4.4 Report writing competence; 4.5 Standard circuit construction competence; 4.6 Standard mechanical construction competence; 4.7 Effective work execution competence; 4.8 Manual consultation and reading competence.

<ul style="list-style-type: none"> 17. Analyze the causes of faults; 18. Analyze the connection schematic diagrams of aircraft exterior lighting systems; 19. Analyze possible locations of faults in aircraft exterior lighting systems; 20. Perform electronic and electrical construction if faults are not isolated; 21. Conduct circuit tests; 22. Follow safety precautions for circuit construction; 23. Sign work cards and release the aircraft for delivery; 24. Return the aircraft to its initial normal state; 25. Clean tools, equipment and the workplace; 25. Store tools, equipment and safety gear. 	
<p>DESCRIPTION OF THE END PRODUCT / SERVICE</p>	<p>Analysis and isolation of faults in aircraft exterior lighting systems are performed in accordance with approved technical specifications and procedures.</p>
<p>CIRCUMSTANTIAL KNOWLEDGE</p>	<p>Detailed knowledge about:</p> <ul style="list-style-type: none"> 1. Safety operation of equipment and tools; 2. Occupational health and safety; 3. AMMs.

OCCUPATION	AVIONICS MAINTENANCE ENGINEER	OCCUPATION CODE	
DUTY TITLE	CONDUCT ANALYSIS AND ISOLATION OF FAULTS IN AIRCRAFT LIGHTING SYSTEMS	DUTY NO.	702
TASK TITLE	CARRY OUT COMPREHENSIVE DETECTION AND DIAGNOSIS OF FAULTS IN AIRCRAFT LIGHTING SYSTEMS	TASK NO.	7026
PERFORMANCE CRITERIA	The person performing this task must be able to carry out comprehensive detection and diagnosis of faults in aircraft lighting systems in accordance with approved technical specifications and procedures.		
RANGE STATEMENT	<p>The task can be performed in an AMO under the supervision of senior technicians or release engineers.</p> <p>The equipment and tools to be used include:</p> <p>Equipment and tools:</p> <ol style="list-style-type: none"> 1. Personal protective equipment; 2. Computers with accessories; 3. Fitter's complete tool kit; 4. Electrician's complete tool kit; 4. HAGNER evacuation route photometers; 5. Multimeters; 6. Heat guns; 7. Anti-static wrist straps; 8. Soldering guns; 9. Crimping tools; 10. Connector pick-up and delivery tools; 11. Instrument screwdrivers; 12. Safety gear; 13. Work bench. <p>Materials:</p> <ol style="list-style-type: none"> 1. Fuses; 2. Strapping tapes; 3. Cleaners; 4. Pin cleaners; 5. Contact enhancers; 6. Splice tubes; 7. Conductors; 8. Soldering materials; 9. Sealants; 10. Heat shrinkable sleeves. 		
EVIDENCE REQUIREMENT			
PRACTICAL PERFORMANCE		UNDERPINNING KNOWLEDGE	

<p>The person performing this task must be able to do the following:</p> <ol style="list-style-type: none"> 1. Select the appropriate tools, equipment and safety devices; 2. Observe health and safety regulations; 3. Assign responsibilities and duties to maintenance personnel; 4. Develop the maintenance plan for aircraft lighting systems; 5. Supervise the implementation of aircraft lighting system maintenance plan; 7. Organize team members to prepare for maintenance work; 8. Supervise the conduct and implementation of maintenance work; 9. Verify aircraft status reports; 10. Comprehensively check the aircraft lighting system; 11. Test aircraft lighting systems; 12. Establish effective workplace communication among personnel; 13. Perform comprehensive inspections and tests on the following items: <ol style="list-style-type: none"> a. The aircraft's normal state; b. The exterior lighting system's normal state; c. The taxi light states; d. The landing light states; e. The runway turnoff light states; f. The wing illumination light states; g. The wing light states; h. The take-off light states; i. The navigation light states; j. The beacon light states; k. The wingtip strobe light states; l. The tail strobe light states; m. The fuselage upper and lower anti-collision light states; n. The cockpit lighting system's normal state; o. The instrument panel light states; p. The states of all warning lights and indicator lights on the overhead panel; q. The standby compass light states; r. The PFD and ND brightness display states; s. The instrument panel backlight states; t. The cabin lighting states; 	<p>Detailed knowledge about:</p> <p>1.0 Methods</p> <p>The person performing this task must be able to explain how to:</p> <ol style="list-style-type: none"> 1.1 Check aircraft interior and exterior lighting systems; 1.2 Comprehensively analyse faults in aircraft interior and exterior lighting systems; 1.3 Troubleshoot aircraft interior and exterior lighting systems; <p>2.0 Principles</p> <p>The person performing this task must be able to explain the following principles:</p> <ol style="list-style-type: none"> 2.1 Working principles of aircraft lighting systems; 2.2 Troubleshooting processes of aircraft lighting systems. <p>3.0 Theories</p> <p>The person performing this task must be able to explain the following principles:</p> <ol style="list-style-type: none"> 3.1 Comprehensive operation of aircraft interior and exterior lighting systems; 3.2 Comprehensive structures of aircraft interior and exterior lighting systems; 3.3 Comprehensive correlation foundations of aircraft interior and exterior lighting systems. <p>4.0 Essential skills</p> <ol style="list-style-type: none"> 4.1 Teamwork skills; 4.2 Communication skills; 4.3 Fault analysis and isolation competence; 4.4 Report writing competence; 4.5 Standard circuit construction competence; 4.6 Standard mechanical construction competence; 4.7 Effective work execution competence; 4.8 Manual consultation and reading competence; 4.9 Computer application competence; 4.10 Aerial work competence.
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<ul style="list-style-type: none"> u. The overhead bin top lights; v. The passenger call lights; w. The overhead bin sidewall lights; x. The attendant top lights; y. The emergency lights; z. The galley lighting states; aa. The lavatory lighting states; ab. The service lighting states in respective areas; ac. The lighting system states through relevant aircraft equipment. <ol style="list-style-type: none"> 14. Isolate faults based on tested states, rules and airworthiness requirements; 15. Replace corresponding faulty items according to rule requirements and airworthiness standards; 16. Check for normality after replacement or isolation of faulty items; 17. Analyze the causes of faults; 18. Analyze aircraft lighting system connection schematic diagrams related to corresponding faults; 19. Analyze possible locations of faults in aircraft lighting systems; 20. Perform electronic and electrical construction if faults are not isolated; 21. Conduct circuit tests; 22. Follow circuit construction requirements; 23. Sign work cards and release the aircraft for delivery; 24. Return the aircraft to its initial normal state. 25. Clean tools, equipment and the workplace ; 26. Store tools, equipment and safety gear. 	
<p>DESCRIPTION OF THE END PRODUCT / SERVICE</p>	<p>Comprehensive detection and diagnosis of faults in aircraft lighting systems are performed in accordance with approved technical specifications and procedures.</p>
<p>CIRCUMSTANTIAL KNOWLEDGE</p>	<p>Detailed knowledge about:</p> <ol style="list-style-type: none"> 1. Safety operation of equipment and tools; 2. Occupational health and safety; 3. AMMs.

OCCUPATION	AVIONICS MAINTENANCE ENGINEER	OCCUPATION CODE	
DUTY TITLE	CARRY OUT ANALYSIS AND ISOLATION OF FAULTS IN AIRCRAFT RADIO COMMUNICATION AND NAVIGATION SYSTEMS	DUTY NO.	703
TASK TITLE	MANAGE MAINTENANCE OF AIRCRAFT RADIO COMMUNICATION AND NAVIGATION SYSTEMS	TASK NO.	7031
PERFORMANCE CRITERIA	The person performing this task must be able to manage maintenance of aircraft radio communication and navigation systems in accordance with approved technical specifications and procedures.		
RANGE STATEMENT	<p>The task can be performed in an AMO under the supervision of a certified person.</p> <p>The equipment and tools to be used include:</p> <ol style="list-style-type: none"> 1. Maintenance documents; 2. Electronics technician's complete tool kit; 3. Aviation materials and consumables; 4. Transportation equipment; 5. Safety gear; 6. Work bench; 7. Computers with accessories. 		
EVIDENCE REQUIREMENT			
PRACTICAL PERFORMANCE		UNDERPINNING KNOWLEDGE	
<p>The person performing this task must be able to do the following:</p> <ol style="list-style-type: none"> 1. Select tools, equipment and safety gear; 2. Follow health and safety precautions when performing the task; 3. Assign responsibilities and duties to maintenance personnel; 4. Develop maintenance plan for aircraft radio communication and navigation systems; 5. Supervise the maintenance of aircraft radio communication and navigation systems; 6. Organize team members for maintenance work; 7. Verify the working principles of aircraft radio communication and navigation systems; 8. Establish workplace communication between maintenance staff; 		<p>Detailed knowledge about:</p> <p>1.0 Methods</p> <p>The person performing this task must be able to explain how to:</p> <ol style="list-style-type: none"> 1.1 Management of maintenance teams; 1.2 Manage project schedules. <p>2.0 Principles</p> <p>The person performing this task must be able to explain the following principles:</p> <ol style="list-style-type: none"> 2.1 Principles of team management; 2.2 Principles of work progress management. <p>3.0 Theories</p> <p>The person performing this task must be able to explain the following:</p> <ol style="list-style-type: none"> 3.1 Management of maintenance teams for radio communication and navigation systems; 3.2 Management responsibilities and duties. 	

<p>9. Evaluate results; 10. Establish an effective incentive mechanism; 11. Prepare a maintenance budget; 12. Control movement of tools and equipment; 13. Manage stocks level for parts and consumables; 14. Clean tools, equipment and the workplace; 15. Store tools, equipment and safety gear.</p>	<p>4.0 Essential skills 4.1 Teamwork skills; 4.2 Communication skills; 4.3 Customer service competence; 4.4 Report writing competence; 4.5 Computer application competence.</p>
<p>DESCRIPTION OF THE END PRODUCT / SERVICE</p>	<p>Management of maintenance of aircraft radio communication and navigation systems is carried out in accordance with approved technical specifications and procedures.</p>
<p>CIRCUMSTANTIAL KNOWLEDGE</p>	<p>Domain knowledge about: 1. Safety operation of equipment and tools; 2. Occupational health and safety; 3. AMMs.</p>

OCCUPATION	AVIONICS MAINTENANCE ENGINEER	OCCUPATION CODE	
DUTY TITLE	CARRY OUT ANALYSIS AND ISOLATION OF FAULTS IN AIRCRAFT RADIO COMMUNICATION AND NAVIGATION SYSTEMS	DUTY NO.	703
TASK TITLE	CONDUCT TESTING OF AIRCRAFT RADIO COMMUNICATION SYSTEMS	TASK NO.	7032
PERFORMANCE CRITERIA	The person performing this task must be able to conduct testing of aircraft radio communication systems in accordance with approved technical specifications and procedures.		
RANGE STATEMENT	<p>The task can be performed in an AMO under the supervision of a certified person.</p> <p>The equipment and tools to be used include:</p> <p>Equipment and tools:</p> <ol style="list-style-type: none"> 1. Personal protective equipment; 2. Fitter's complete tool kit; 3. Electronics Technician's complete tool kit; 3. Computers with accessories; 4. Multimeters; 5. Trameggers; 6. Weld testers; 7. Milliammeters; 8. Radio navigation testers; 9. Frequency counters; 10. Safety gear 11. Work bench <p>Materials:</p> <ol style="list-style-type: none"> 1. Cleaners; 2. Locking wires and straps; 3. Cables; 4. Coaxial cables; 5. Cable accessories; 6. Preservatives; 7. Protective sealants. 		
EVIDENCE REQUIREMENT			
PRACTICAL PERFORMANCE		UNDERPINNING KNOWLEDGE	
<p>The person performing this task must be able to do the following:</p> <ol style="list-style-type: none"> 1. Select tools, equipment and safety gear; 2. Observe health and safety regulations; 3. Verify aircraft status reports; 		<p>Detailed knowledge about:</p> <p>1.0 Methods</p> <p>The person performing this task must be able to explain how to:</p> <ol style="list-style-type: none"> 1.1 Manage maintenance teams; 	

<ol style="list-style-type: none"> 5. Make work preparations; 4. Obtain manuals required for performing the task; 5. Assign responsibilities and duties to maintenance personnel; 6. Develop maintenance plan for aircraft radio communication systems; 7. Supervise the implementation of aircraft radio communication system maintenance; 8. Test aircraft radio communication systems; 9. Perform inspections and tests on the following items: <ol style="list-style-type: none"> a. The aircraft's normal state; b. Test the air-ground voice communication system's operating states; c. Test data link communication states; d. Test the interphone system's operating states; e. Test the operating states of the voice recording system and ELT. 10. Replace faulty items according to tested states; 11. Sign work cards; 12. Submit task cards for certification and aircraft delivery for use; 13. Restore the aircraft to its normal state. 14. Clean tools, equipment and the workplace; 14. Store tools and equipment; 	<p>1.2 Manage project schedules.</p> <p>2.0 Principles The person performing this task must be able to explain the following principles:</p> <ol style="list-style-type: none"> 2.1 Radio equipment connection and calibration; 2.2 Signal strength and clarity testing; 2.3 Troubleshooting and repair; 2.4 Compliance with standards and procedures; 2.5 Data recording and analysis. <p>3.0 Theories The person performing this task must be able to explain the following:</p> <ol style="list-style-type: none"> 3.1 Management of maintenance teams for radio communication and navigation systems; 3.2 Working principles of aircraft radio communication systems. <p>4.0 Essential skills</p> <ol style="list-style-type: none"> 4.1 Teamwork skills; 4.2 Communication skills; 4.3 Operation competence; 4.4 Report writing competence; 4.5 Computer application competence.
<p>DESCRIPTION OF THE END PRODUCT / SERVICE</p>	<p>Testing of aircraft radio communication systems is performed in accordance with approved technical specifications and procedures.</p>
<p>CIRCUMSTANTIAL KNOWLEDGE</p>	<p>Detailed knowledge about:</p> <ol style="list-style-type: none"> 1. Safety operation of equipment and tools; 2. Occupational health and safety; 3. AMMs.

OCCUPATION	AVIONICS MAINTENANCE ENGINEER	OCCUPATION CODE	
DUTY TITLE	CARRY OUT ANALYSIS AND ISOLATION OF FAULTS IN AIRCRAFT RADIO COMMUNICATION AND NAVIGATION SYSTEMS	DUTY NO.	703
TASK TITLE	IMPLEMENT ANALYSIS AND ISOLATION OF FAULTS IN AIRCRAFT RADIO COMMUNICATION SYSTEMS	TASK NO.	7033
PERFORMANCE CRITERIA	The person performing this task must be able to implement analysis and isolation of faults in aircraft radio communication systems in accordance with approved technical specifications and procedures.		
RANGE STATEMENT	<p>The task can be performed in an AMO under the supervision of a person with management authority.</p> <p>The equipment and tools to be used include:</p> <p>Equipment and tools:</p> <ol style="list-style-type: none"> 1. Personal protective equipment; 2. Electronics technician's complete Tool kit; 3. Computers with accessories; 4. Multimeters; 5. Trameggers; 6. Weld testers; 7. Milliammeters; 8. Radio navigation testers; 9. Frequency counters; 10. Safety gear; 11. Work bench. <p>Materials:</p> <ol style="list-style-type: none"> 1. Cleaners; 2. Locking wires and straps; 3. Cables; 4. Coaxial cables; 5. Cable accessories; 6. Preservatives; 7. Protective sealants. 		
EVIDENCE REQUIREMENT			
PRACTICAL PERFORMANCE		UNDERPINNING KNOWLEDGE	
<p>The person performing this task must be able to do the following:</p> <ol style="list-style-type: none"> 1. Select tools, equipment and safety gear; 2. Observe health and safety regulations; 3. Assign suitable responsibilities and duties to relevant personnel; 		<p>Detailed knowledge about:</p> <p>1.0 Methods</p> <p>The person performing this task must be able to explain how to:</p> <ol style="list-style-type: none"> 1.1 Check signal links; 1.2 Analyse failure modes; 	

<ol style="list-style-type: none"> 4. Develop maintenance plans for analyzing and isolating faults in aircraft radio communication systems; 5. Supervise the implementation of maintenance plans for analyzing and isolating faults in aircraft radio communication systems; 6. Organize team members for maintenance work; 7. Promote workplace communication between workers 8. Evaluate results; 9. Establish an effective incentive mechanism; 10. Prepare maintenance budget; 11. Perform inspections and tests on the following items: <ol style="list-style-type: none"> a. The aircraft's normal state; b. Test the air-ground voice communication system's operating states; c. Test data link communication states; d. Test the interphone system's operating states; e. Test the operating states of the voice recording system and ELT. 12. Isolate faults according to detected states; 13. Check for normality after fault isolation; 14. Analyze the sources of faults; 15. Analyze the connection schematic diagrams of aircraft radio communication systems; 16. Analyze possible locations of faults in aircraft radio communication systems; 17. Perform electronic and electrical reconstruction if faults are not isolated; 18. Conduct circuit tests; 19. Follow safety precautions for circuit construction; 20. Prepare summary of findings and remedies; 21. Clean tools, equipment and the workplace; 22. Store tools, equipment and safety gear. 	<ol style="list-style-type: none"> 1.3 Test frequency and communication links; 1.4 Conduct electrical interlocking and isolation. <p>2.0 Principles</p> <p>The person performing this task must be able to explain the following principles:</p> <ol style="list-style-type: none"> 2.1 Principles of radio communication systems; 2.2 Principles of fault isolation. <p>3.0 Theories</p> <p>The person performing this task must be able to explain the following:</p> <ol style="list-style-type: none"> 3.1 Fault sources of radio communication systems; 3.2 Principles of radio communication system interactive connections. <p>4.0 Essential skills</p> <ol style="list-style-type: none"> 4.1 Teamwork skills; 4.2 Communication skills; 4.3 Fault analysis and isolation competence; 4.4 Report writing competence; 4.5 Standard circuit construction competence; 4.6 Standard mechanical construction competence; 4.7 Effective work execution competence.
<p>DESCRIPTION OF THE END PRODUCT / SERVICE</p>	<p>Analysis and isolation of faults in aircraft radio communication systems is performed in accordance with approved technical specifications and procedures.</p>

CIRCUMSTANTIAL KNOWLEDGE	Detailed knowledge about: <ol style="list-style-type: none">1. Scope of duties;2. Safety operation of equipment and tools;3. Occupational health and safety;4. AMMs.
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OCCUPATION	AVIONICS MAINTENANCE ENGINEER	OCCUPATION CODE	
DUTY TITLE	CARRY OUT ANALYSIS AND ISOLATION OF FAULTS IN AIRCRAFT RADIO COMMUNICATION AND NAVIGATION SYSTEMS	DUTY NO.	703
TASK TITLE	PERFORM TESTING OF AIRCRAFT RADIO NAVIGATION SYSTEMS	TASK NO.	7034
PERFORMANCE CRITERIA	The person performing this task must be able to test aircraft radio navigation systems in accordance with approved technical specifications and procedures.		
RANGE STATEMENT	<p>The task can be performed in an AMO's aircraft under the supervision of a certified person.</p> <p>The equipment and tools to be used include:</p> <p>Equipment and tools:</p> <ol style="list-style-type: none"> 1. Personal protective equipment; 2. Fitter's complete tool kit; 3. Electronics technician's complete tool kit 3. Computers with accessories; 4. Multimeters; 5. Trameggers; 6. Solder joint testers; 7. Milliammeters; 8. Radio navigation testers; 9. Frequency counters; 10. Safety gear; 11. Work bench. <p>Materials:</p> <ol style="list-style-type: none"> 1. Locking wires and straps; 2. Cables; 3. Coaxial cables; 4. Cable accessories; 5. Preservatives; 6. Protective sealants. 		
EVIDENCE REQUIREMENT			
PRACTICAL PERFORMANCE	UNDERPINNING KNOWLEDGE		
<p>The person performing this task must be able to do the following:</p> <ol style="list-style-type: none"> 1. Select tools, equipment and safety gear; 2. Observe health and safety regulations; 3. Review task cards and relevant maintenance instructions; 	<p>Detailed knowledge about:</p> <p>1.0 Methods</p> <p>The person performing this task must be able to explain how to:</p> <ol style="list-style-type: none"> 1.1 Check radio navigation control panels; 1.2 Test radio navigation receivers; 		

<ol style="list-style-type: none"> 4. Review all applicable airworthiness directives and service bulletins; 3. Execute all applicable airworthiness directives and service bulletin instructions; 4. Perform tests on the following items: <ol style="list-style-type: none"> a. Positioning receiver; b. Localizer antenna; c. Heading indicator; d. Glide slope receiver; e. Glide slope antenna; f. Glide slope indicator; g. VOR receiver; h. VOR indicator; i. VOR antenna; j. ADF receiver; k. ADF antenna; l. ADF indicator; m. Navigation control panel; n. GPS receiver; o. GPS antenna; p. GPS display; q. Marker beacon receiver; r. Marker beacon antenna; s. Marker beacon control panel; t. Coaxial cable; u. FMC; v. Flight management display. 5. Perform tests on the following systems: <ol style="list-style-type: none"> a. Locator system; b. Glide slope system; c. VOR system; d. ADF system; e. GPS system; f. Marker beacon system; g. FMS. 6. Perform final tests and sign task cards; 7. Submit task cards to the certification engineer for certification and aircraft delivery for use; 8. Restore the aircraft to its normal state; 8. Clean tools, equipment and the workplace, 9. Store the tools, equipment and safety gear; 	<ol style="list-style-type: none"> 1.3 Use radio navigation testing equipment; 1.4 Use on-board testing equipment within systems. <p>2.0 Principles</p> <p>The person performing this task must be able to explain the following principles:</p> <ol style="list-style-type: none"> 2.1 Human factors; 2.2 Civil aviation regulations; 2.3 Working principles of radio navigation systems; 2.4 Testing principles of radio navigation systems. <p>3.0 Theories</p> <p>The person performing this task must be able to explain the following:</p> <ol style="list-style-type: none"> 3.1 Maintenance practice; 3.2 Solutions to human factors; 3.3 Radio wave and propagation; 3.4 Recognition and testing methods for electronic components; 3.5 Aircraft beacon system test flows; 3.6 Aircraft ADF system test flows; 3.7 Instrument landing system test flows; 3.8 Aircraft FMS test flows. <p>4.0 Essential skills</p> <ol style="list-style-type: none"> 4.1 Use of AMMs; 4.2 Operation of navigation radio testing equipment; 4.3 Critical thinking; 4.4 Problem-solving competence; 4.5 Stress management; 4.6 Teamwork.
<p>DESCRIPTION OF THE END PRODUCT / SERVICE</p>	<p>Testing of aircraft radio navigation systems is performed in accordance with approved technical specifications and procedures.</p>

CIRCUMSTANTIAL KNOWLEDGE	Detailed knowledge about: <ol style="list-style-type: none">1. Safety operation of equipment and tools;2. Occupational health and safety.
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OCCUPATION	AVIONICS MAINTENANCE ENGINEER	OCCUPATION CODE	
DUTY TITLE	CARRY OUT ANALYSIS AND ISOLATION OF FAULTS IN AIRCRAFT RADIO COMMUNICATION AND NAVIGATION SYSTEMS	DUTY NO.	703
TASK TITLE	CARRY OUT ANALYSIS AND ISOLATION OF FAULTS IN AIRCRAFT RADIO NAVIGATION SYSTEMS	TASK NO.	7035
PERFORMANCE CRITERIA	The person performing this task must be able to analyse and isolate faults in aircraft radio navigation systems in accordance with approved technical specifications and procedures.		
RANGE STATEMENT	<p>The task can be performed in an AMO's aircraft under the supervision of a certified person.</p> <p>The equipment and tools to be used include:</p> <p>Equipment and tools:</p> <ol style="list-style-type: none"> 1. Personal protective equipment; 2. Electronics technician's complete tool kit; 3. Computers with accessories; 4. Multimeters; 5. Trameggers; 6. Solder joint testers; 7. Milliammeters; 8. Radio navigation testers; 9. Frequency counters; 10. Safety gear; 11. Work bench. <p>Materials:</p> <ol style="list-style-type: none"> 1. Cleaners; 2. Locking wires and straps; 3. Cables; 4. Coaxial cables; 5. Cable accessories; 6. Preservatives; 7. Protective sealants. 		
EVIDENCE REQUIREMENT			
PRACTICAL PERFORMANCE		UNDERPINNING KNOWLEDGE	
<p>The person performing this task must be able to do the following:</p> <ol style="list-style-type: none"> 1. Select tools, equipment and safety gear; 2. Observe health and safety gear; 3. Verify aircraft status reports; 		<p>Detailed knowledge about:</p> <p>1.0 Methods</p> <p>The person performing this task must be able to explain how to:</p> <ol style="list-style-type: none"> 1.1 Analyse and isolate locator system faults; 	

<p>4. Analyze and isolate faults according to the corresponding test reports and troubleshooting manuals.</p> <p>5. Perform fault analysis of the following:</p> <ol style="list-style-type: none"> Glide slope system; Locator system; VOR system; ADF system; Marker beacon system; FMS. <p>6. Operate and inspect the functions of the following:</p> <ol style="list-style-type: none"> Glide slope system; Locator system; VOR system; ADF system; Marker beacon system; FMS. <p>7. Perform the following inspections:</p> <ol style="list-style-type: none"> Positioning receiver; Localizer antenna; Heading indicator; Glide slope receiver; Glide slope antenna; Glide slope indicator; VOR receiver; VOR indicator; VOR antenna; ADF receiver; VOR indicator; ADF antenna; ADF indicator; Navigation control panel; GPS receiver; GPS antenna; GPS display; Marker beacon receiver; Marker beacon antenna; Marker beacon control panel; Coaxial cable; FMC; Flight management display. <p>8. Inspect the following:</p> <ol style="list-style-type: none"> Positioning receiver; Localizer antenna; Heading indicator; Glide slope receiver; Glide slope antenna; Glide slope indicator; VOR receiver; VOR indicator; 	<p>1.2 Analyse and isolate glide slope system faults;</p> <p>1.3 Analyse and isolate ADF system faults;</p> <p>1.4 Analyse and isolate marker beacon system faults;</p> <p>1.5 Analyse and isolate FMS faults;</p> <p>1.6 Analyse and eliminate radio navigation circuits;</p> <p>1.7 Repair aircraft wires and coaxial cables.</p> <p>2.0 Principles</p> <p>The person performing this task must be able to explain the following principles:</p> <p>2.1 Main components, working principles, possible causes of problems of and fault prejudgment and prediction for the locator system;</p> <p>2.2 Main components, working principles, possible causes of problems of and fault prejudgment and prediction for the glide slope system;</p> <p>2.3 Main components, working principles, possible causes of problems of and fault prejudgment and prediction for the ADF system;</p> <p>2.4 Main components, working principles, possible causes of problems of and fault prejudgment and prediction for the marker beacon system;</p> <p>2.5 Main components, working principles, possible causes of problems of and fault prejudgment and prediction for the FMS;</p> <p>2.6 Underpinning knowledge of coaxial cable transmission, cabling and connection;</p> <p>2.7 Basics of the instrument landing system;</p> <p>2.8 Basics of the aircraft FMS;</p> <p>2.9 Civil aviation regulations;</p> <p>2.10 Human factors.</p> <p>3.0 Theories</p> <p>The person performing this task must be able to explain the following:</p> <p>3.1 Maintenance practice;</p> <p>3.2 Radio wave and propagation;</p> <p>3.3 Underpinning knowledge of coaxial cable transmission, cabling and connection;</p> <p>3.4 Recognition and testing methods for electronic components;</p>
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<ul style="list-style-type: none"> i. VOR antenna; j. ADF receiver; k. VOR indicator; l. ADF antenna; m. ADF indicator; n. Navigation control panel; o. GPS receiver; p. GPS antenna; q. GPS display; r. Marker beacon receiver; s. Marker beacon antenna; t. Marker beacon control panel; u. Coaxial cable; v. FMC; w. Flight management display. <p>9. Isolate faults where necessary;</p> <p>10; Replace defective wires and coaxial cables;</p> <p>11. Perform final inspections and sign corresponding task cards;</p> <p>12. Submit task cards to the certification engineer for certification and aircraft delivery for use;</p> <p>13. Restore the aircraft to its normal state.</p> <p>14. Clean the workplace, tools and equipment;</p> <p>15. Arrange and store the tools and equipment;</p>	<p>3.5 Operation and testing of aircraft navigation systems;</p> <p>3.6 Operation of navigation radio testing equipment;</p> <p>3.7 Operation of instrument landing systems;</p> <p>3.8 GPS operation;</p> <p>3.9 Marker beacon operation;</p> <p>3.10 FMC operation;</p> <p>3.11 Aircraft beacon system test flows;</p> <p>3.12 Aircraft ADF system test flows;</p> <p>3.13 Use of AMMs;</p> <p>3.14 Use of Fault isolation manuals (FIMs).</p> <p>4.0 Essential skills</p> <p>4.1 Fault analysis, prejudgment and prediction competence;</p> <p>4.2 Use of AMMs;</p> <p>4.3 Disassembly and installation competence in navigation radio testing equipment;</p> <p>4.4 Selection competence in basic tools;</p> <p>4.5 Engineering technical report writing competence;</p> <p>4.6 Computer skills;</p> <p>4.7 Critical thinking;</p> <p>4.8 Problem-solving competence;</p> <p>4.9 Stress management;</p> <p>4.10 Teamwork.</p>
<p>DESCRIPTION OF THE END PRODUCT / SERVICE</p>	<p>Analysis and isolation of faults in aircraft radio navigation systems are performed in accordance with approved technical specifications and procedures.</p>
<p>CIRCUMSTANTIAL KNOWLEDGE</p>	<p>Detailed knowledge about:</p> <ul style="list-style-type: none"> 1. Safety operation of equipment and tools; 2. Occupational health and safety; 3. AMMs.

OCCUPATION	AVIONICS MAINTENANCE ENGINEER	OCCUPATION CODE	
DUTY TITLE	CARRY OUT ANALYSIS AND ISOLATION OF FAULTS IN AIRCRAFT RADIO COMMUNICATION AND NAVIGATION SYSTEMS	DUTY NO.	703
TASK TITLE	CONDUCT TESTING OF THE AIRCRAFT AIR DATA INERTIAL REFERENCE SYSTEM (ADIRS)	TASK NO.	7036
PERFORMANCE CRITERIA	The person performing this task must be able to test the aircraft air data inertial reference system (ADIRS) in accordance with approved technical specifications and procedures.		
RANGE STATEMENT	<p>The task can be performed in an AMO's aircraft under the supervision of a certified person.</p> <p>The equipment and tools to be used include:</p> <p>Equipment and tools:</p> <ol style="list-style-type: none"> 1. Personal protective equipment; 2. Electronics technician's complete tool kit; 3. Computers with accessories; 4. Multimeters; 5. Trameggers; 6. Solder joint testers; 7. Milliammeters; 8. Radio navigation testers; 9. Frequency counters; 10. Safety gear; 11. Work bench. <p>Materials:</p> <ol style="list-style-type: none"> 1. Cleaners; 2. Locking wires and straps; 3. Cables; 4. Coaxial cables; 5. Cable accessories; 6. Preservatives; 7. Protective sealants. 		
EVIDENCE REQUIREMENT			
PRACTICAL PERFORMANCE		UNDERPINNING KNOWLEDGE	
<p>The person performing this task must be able to do the following:</p> <ol style="list-style-type: none"> 1. Select tools equipment and safety gear; 2. Observe health and safety regulations; 		<p>Detailed knowledge about:</p> <p>1.0 Methods</p> <p>The person performing this task must be able to explain how to:</p> <ol style="list-style-type: none"> 1.0 Check ADIRS control display units; 	

<ol style="list-style-type: none"> 3. Verify task cards and relevant maintenance instructions; 4. Review all applicable airworthiness directives and service bulletins; 5. Execute all applicable airworthiness directives and service bulletin instructions; 7. Perform tests on the following items: <ol style="list-style-type: none"> a. ADIRS control display unit; b. ADIRS mode selection panel; c. ADIRU. 8. Perform air data/inertial reference system tests; 9. Perform system tests and sign task cards; 10. Submit task cards to the certification engineer for certification and aircraft delivery for use; 11. Restore the aircraft to its normal state. 12. Clean tools, equipment; and the workplace, 13. Store , tools equipment and safety gear; 	<ol style="list-style-type: none"> 1.1 Test ADIRS control display units; 1.2 Test ADIRS mode selection panels; 1.3 Test ADIRUs. <p>2.0 Principles The person performing this task must be able to explain the following principles:</p> <ol style="list-style-type: none"> 2.1 ADIRS composition and basic working principle; 2.2 ADIRS control display unit operation; 2.3 ADIRS mode selection panel operation; 2.4 ADIRS testing processes and working principles. <p>3.0 Theories The person performing this task must be able to explain the following:</p> <ol style="list-style-type: none"> 3.1 Maintenance practice; 3.2 Human factors; 3.3 Radio wave and propagation; 3.4 Underpinning knowledge of coaxial cable transmission, cabling and connection; 3.5 Recognition and testing methods for electronic components; 3.6 ADIRS structure; 3.7 ADIRS principles; 3.8 Civil aviation regulations; 3.9 Use of AMMs. <p>4.0 Essential skills</p> <ol style="list-style-type: none"> 4.1 Selection competence in basic tools; 4.2 Use of AMMs; 4.3 ADIRS testing competence; 4.4 Computer skills; 4.5 Critical thinking; 4.6 Problem-solving competence; 4.7 Stress management; 4.8 Teamwork.
<p>DESCRIPTION OF THE END PRODUCT / SERVICE</p>	<p>The aircraft ADIRS is tested in accordance with approved technical specifications and procedures.</p>
<p>CIRCUMSTANTIAL KNOWLEDGE</p>	<p>Detailed knowledge about:</p> <ol style="list-style-type: none"> 1. Safety operation of equipment and tools; 2. Occupational health and safety; 3. AMMs.

OCCUPATION	AVIONICS MAINTENANCE ENGINEER	OCCUPATION CODE	
DUTY TITLE	CARRY OUT ANALYSIS AND ISOLATION OF FAULTS IN AIRCRAFT RADIO COMMUNICATION AND NAVIGATION SYSTEMS	DUTY NO.	703
TASK TITLE	IMPLEMENT ANALYSIS AND ISOLATION OF FAULTS IN THE AIRCRAFT AIR DATA INERTIAL REFERENCE SYSTEM (ADIRS)	TASK NO.	7037
PERFORMANCE CRITERIA	The person performing this task must be able to analyse and isolate faults in the aircraft data inertial reference system (ADIRS in accordance with approved technical specifications and procedures.		
RANGE STATEMENT	<p>The task can be performed in an AMO's aircraft under the supervision of a certified person.</p> <p>The equipment and tools to be used include:</p> <p>Equipment and tools:</p> <ol style="list-style-type: none"> 1. Personal protective equipment; 2. Electronics Technician's complete tool kit; 3. Computers with accessories; 4. Multimeters; 5. Trameggers; 6. Solder joint testers; 7. Milliammeters; 8. Radio navigation testers; 9. Frequency counters 10. Safety gear; 11. Work bench. <p>Materials:</p> <ol style="list-style-type: none"> 1. Cleaners; 2. Locking wires and straps; 3. Cables; 4. Coaxial cables; 5. Cable accessories; 6. Preservatives; 7. Protective sealants. 		
EVIDENCE REQUIREMENT			
PRACTICAL PERFORMANCE		UNDERPINNING KNOWLEDGE	
<p>The person performing this task must be able to do the following:</p> <ol style="list-style-type: none"> 1. Select tools, equipment and safety gear; 2. Observe health and safety regulations; 		<p>Detailed knowledge about:</p> <p>1.0 Methods</p> <p>The person performing this task must be able to explain how to:</p>	

<ol style="list-style-type: none"> 3. Verify task cards and relevant maintenance instructions; 4. Verify all applicable airworthiness directives and service bulletins; 5. Execute all applicable airworthiness directives and service bulletin instructions; 6. Perform the following inspections: <ol style="list-style-type: none"> a. ADIRS control display unit; b. ADIRS mode selection panel; c. ADIRU. 7. Check and calibrate the operation of the air data/inertial reference system; 8. Test performance of the following components : <ol style="list-style-type: none"> a. ADIRS control display unit; b. ADIRS mode selection panel; c. ADIRU. 9. Resolve all observed issues; 10. Perform final inspections and sign corresponding task cards; 11. Submit task cards to the certification engineer for certification and aircraft delivery for use; 12. Restore the aircraft to its normal state. 13. Clean tools equipment and the workplace; 11. Store tools, equipment and safety gear; 	<ol style="list-style-type: none"> 1.1 Calibrate the ADIRS and troubleshoot ADIRS circuits; 1.2 Replace ADIRS components; 1.3 Repair aircraft wires and coaxial cables. <p>2.0 Principles</p> <p>The person performing this task must be able to explain the following principles:</p> <ol style="list-style-type: none"> 2.1 ADIRS composition and basic working principle; 2.2 ADIRS calibration procedures and principles; 2.3 ADIRS control display unit operation and replacement processes; 2.4 ADIRS mode selection panel operation and replacement processes; 2.5 ADIRU functions and replacement; 2.6 Possible causes, prejudgment and prediction of ADIRS faults. <p>3.0 Theories</p> <p>The person performing this task must be able to explain the following:</p> <ol style="list-style-type: none"> 3.1 Maintenance practice; 3.2 Human factors; 3.3 Radio wave and propagation; 3.4 Underpinning knowledge of coaxial cable transmission, cabling and connection; 3.5 Recognition and testing methods for electronic components; 3.6 ADIRS structure; 3.7 Civil aviation regulations; 3.8 Use of AMMs; 3.9 Use of FIMs. <p>4.0 Essential skills</p> <ol style="list-style-type: none"> 4.1 Fault analysis, prejudgment and prediction competence; 4.2 Use of AMMs; 4.3 Disassembly and installation competence in navigation radio testing equipment; 4.4 Selection competence in basic tools; 4.5 Engineering technical report writing competence; 4.6 Computer skills; 4.7 Critical thinking; 4.8 Problem-solving competence;
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	<p>4.9 Stress management;</p> <p>4.10 Teamwork;</p> <p>4.11 Communication skills.</p>
DESCRIPTION OF THE END PRODUCT / SERVICE	Faults in the aircraft ADIRS are analysed and isolated in accordance with approved technical specifications and procedures.
CIRCUMSTANTIAL KNOWLEDGE	<p>Detailed knowledge about:</p> <ol style="list-style-type: none"> 1. Safety operation of equipment and tools; 2. Occupational health and safety; 3. AMMs.

OCCUPATION	AVIONICS MAINTENANCE ENGINEER	OCCUPATION CODE	
DUTY TITLE	CARRY OUT ANALYSIS AND ISOLATION OF FAULTS IN AIRCRAFT RADIO COMMUNICATION AND NAVIGATION SYSTEMS	DUTY NO.	703
TASK TITLE	PERFORM DESIGN AND ANALYSIS OF TYPICAL CIRCUITS OF AIRCRAFT RADIO COMMUNICATION AND NAVIGATION SYSTEM	TASK NO.	7038
PERFORMANCE CRITERIA	The person performing this task must be able to design and analyse typical circuits of aircraft radio communication and navigation system in accordance with approved technical specifications and procedures.		
RANGE STATEMENT	<p>The task can be performed in an AMO's aircraft under the supervision of a certified person. The equipment and tools to be used include:</p> <p>Equipment and tools:</p> <ol style="list-style-type: none"> 1. Personal protective equipment; 2. Electronics technician's complete tool kit; 3. Computers with accessories; 4. Multimeters; 5. Trameggers; 6. Solder joint testers; 7. Milliammeters; 8. Radio navigation testers; 9. Frequency counters; 10. Safety gear; 11. Work bench. <p>Materials:</p> <ol style="list-style-type: none"> 1. Cleaners; 2. Locking wires and straps; 3. Cables; 4. Coaxial cables; 5. Cable accessories; 6. Preservatives; 7. Protective sealants. 		
EVIDENCE REQUIREMENT			
PRACTICAL PERFORMANCE		UNDERPINNING KNOWLEDGE	
<p>The person performing this task must be able to do the following:</p> <ol style="list-style-type: none"> 1. Select tools, equipment and safety gear; 2. Observe health and safety regulations; 3. Assign responsibilities and duties to maintenance personnel; 		<p>Detailed knowledge about:</p> <p>1.0 Methods</p> <p>The person performing this task must be able to explain how to:</p> <ol style="list-style-type: none"> 1.1 Analyse radio communication system typical circuits; 1.2 Manage project schedules. 	

<p>4. Design and analyze aircraft radio communication and navigation system typical circuits, including but not limited to the following:</p> <ol style="list-style-type: none"> a. Transmitter modulator circuit; b. Receiver demodulation circuit; c. Filter circuit; d. Frequency synthesizer circuit. <p>4. Connect the components on the new circuit to a testing platform for testing;</p> <p>5. Conduct a circuit performance test;</p> <p>6. Analyze test results and improve the new circuit;</p> <p>7. Communicate with and coordinate interactions between relevant departments;</p> <p>7. Promote the conduct and implementation of work;</p> <p>8. Supervise the schedule and quality of work;</p> <p>9. Evaluate results;</p> <p>10. Hold and organize relevant meetings;</p> <p>11. Establish an effective incentive mechanism;</p> <p>12. Prepare maintenance budget;</p> <p>13. Initiate workplace communication.</p> <p>14. Clean tools, equipment and the workplace;</p> <p>15. Store tools, equipment and safety gear.</p>	<p>2.0 Principles</p> <p>The person performing this task must be able to explain the following principles:</p> <ol style="list-style-type: none"> 2.1 Principles of radio communication systems; 2.2 Principles of typical circuit design and analysis. <p>3.0 Theories</p> <p>The person performing this task must be able to explain the following:</p> <ol style="list-style-type: none"> 3.1 Theory of aircraft radio communication systems; 3.2 Principles of analysis of radio communication system typical circuits. <p>4.0 Essential skills</p> <ol style="list-style-type: none"> 4.1 Teamwork skills; 4.2 Communication skills; 4.3 Circuit design and analysis competence; 4.4 Report writing competence; 4.5 Standard circuit construction competence; 4.6 Standard mechanical construction competence; 4.7 Effective work execution competence.
<p>DESCRIPTION OF THE END PRODUCT / SERVICE</p>	<p>Design and analysis of typical circuits of aircraft radio communication and navigation system is performed in accordance with approved technical specifications and procedures.</p>
<p>CIRCUMSTANTIAL KNOWLEDGE</p>	<p>Detailed knowledge about:</p> <ol style="list-style-type: none"> 1. Safety operation of equipment and tools; 2. Occupational health and safety; 3. AMMs.

OCCUPATION	AVIONICS MAINTENANCE ENGINEER	OCCUPATION CODE	
DUTY TITLE	PERFORM ANALYSIS AND ISOLATION OF FAULTS IN AIRCRAFT INSTRUMENT SYSTEMS	DUTY NO.	704
TASK TITLE	PERFORM MANAGEMENT OF AIRCRAFT INSTRUMENT SYSTEM MAINTENANCE	TASK NO.	7041
PERFORMANCE CRITERIA	The person performing this task must be able to manage aircraft instrument system maintenance in accordance with approved technical specifications and procedures.		
RANGE STATEMENT	<p>The task can be performed in an AMO under the supervision of a person with management authority.</p> <p>The equipment and tools to be used include:</p> <ol style="list-style-type: none"> 1. Personal Protective Equipment; 2. Maintenance documents; 3. Electronics Technician's Tools kit; 4. Aviation materials and consumables; 5. Transportation equipment. 6. Safety gear; 7. Computers with accessories; 8. Work bench. 		
EVIDENCE REQUIREMENT			
PRACTICAL PERFORMANCE		UNDERPINNING KNOWLEDGE	
<p>The person performing this task must be able to do the following:</p> <ol style="list-style-type: none"> 1. Select the appropriate tools, equipment and safety devices; 2. Observe the preventive measures for health and safety; 3. Assign responsibilities and duties to maintenance personnel; 4. Develop the maintenance plan for aircraft instrument systems; 5. Supervise the implementation of aircraft instrument system maintenance; 6. Establish inter-departmental communication; 7. Promote workplace communication between workers; 8. Oversee the schedule and quality of work; 9. Evaluate results; 10. Hold tool box meetings; 11. Establish an effective incentive mechanism; 		<p>Detailed knowledge about:</p> <p>1.0 Methods</p> <p>The person performing this task must be able to explain how to:</p> <ol style="list-style-type: none"> 1.1 Effectively manage a team to ensure the smooth completion of work; 1.2 Develop maintenance plans for aircraft instrument systems. <p>2.0 Principles</p> <p>The person performing this task must be able to explain the following principles:</p> <ol style="list-style-type: none"> 2.1 Principles of maintenance team management; 2.2 Principles of safety control in aircraft instrument system maintenance; 2.3 Principles of maintenance cost control. <p>3.0 Theories</p> <p>The person performing this task must be able to explain the following:</p> <ol style="list-style-type: none"> 3.1 Job responsibilities of maintenance personnel; 	

<p>12. Prepare a maintenance budget;</p> <p>13. Control stock levels for spare parts and materials;</p> <p>14. Control movement of tools and equipment;</p> <p>15. Clean tools, equipment and the workplace;</p> <p>16. Store tools, equipment and safety gear.</p>	<p>3.2 Responsibilities and work procedures of management personnel;</p> <p>3.3 Aircraft instrument system maintenance schemes.</p> <p>4.0 Essential skills</p> <p>4.1 Teamwork skills;</p> <p>4.2 Communication skills;</p> <p>4.3 Customer service competence;</p> <p>4.4 Report writing competence;</p> <p>4.5 Computer application competence.</p>
<p>DESCRIPTION OF THE END PRODUCT / SERVICE</p>	<p>Management of aircraft instrument system maintenance is performed in accordance with approved technical specifications and procedures.</p>
<p>CIRCUMSTANTIAL KNOWLEDGE</p>	<p>Detailed knowledge about:</p> <ol style="list-style-type: none"> 1. Safety operation of equipment and tools; 2. Occupational health and safety; 3. AMMs.

OCCUPATION	AVIONICS MAINTENANCE ENGINEER	OCCUPATION CODE	
DUTY TITLE	PERFORM ANALYSIS AND ISOLATION OF FAULTS IN AIRCRAFT INSTRUMENT SYSTEMS	DUTY NO.	704
TASK TITLE	CARRY OUT TESTING OF ELECTRONIC DISPLAY SYSTEMS	TASK NO.	7042
PERFORMANCE CRITERIA	The person performing this task must be able to test electronic display systems in accordance with approved technical specifications and procedures..		
RANGE STATEMENT	<p>The task can be performed in an AMO's aircraft under the supervision of a certified person.</p> <p>The equipment and tools to be used include:</p> <p>Equipment and tools:</p> <ol style="list-style-type: none"> 1. Personal protective equipment; 2. Computers with accessories; 3. Electronics technician's tool kit; 4. Multimeters; 5. Heat guns; 6. Anti-static wrist straps; 7. Soldering guns; 8. Crimping tools; 9. Connector pick-up and delivery tools; 10. Safety gear; 11. Work bench. <p>Materials:</p> <ol style="list-style-type: none"> 1. Contact cleaners; 2. Contact enhancers; 3. Electrical jointing; 4. Wires; 5. Welding materials; 6. Heat shrinkable sleeves; 7. Air filters. 		
EVIDENCE REQUIREMENT			
PRACTICAL PERFORMANCE		UNDERPINNING KNOWLEDGE	
<p>The person performing this task must be able to do the following:</p> <ol style="list-style-type: none"> 1. Select appropriate tools, equipment and safety gear; 2. Observe health and safety regulations; 3. Verify task cards and relevant maintenance instructions; 4. Review all applicable airworthiness directives and service bulletins; 		<p>Detailed knowledge about:</p> <p>1.0 Methods</p> <p>The person performing this task must be able to explain how to:</p> <ol style="list-style-type: none"> 1.1 Inquire and use maintenance task cards; 1.2 Check electronic display systems; 1.3 Test electronic display systems. 	

<p>5. Execute all applicable airworthiness directives and service bulletin instructions;</p> <p>6. Perform tests on the following items:</p> <ol style="list-style-type: none"> a. EADI; b. EHSI; c. PFD; d. Symbol generator; e. EICAS/ECAM; f. MCDU; g. CDS; h. Clock adjustment control device. <p>7. Perform system tests and sign task cards;</p> <p>8. Submit task cards to the certification engineer for certification and aircraft delivery for use;</p> <p>9. Restore the aircraft to its normal state.</p> <p>10. Clean tools, equipment and the workplace,</p> <p>11. Store the tools and equipment;</p>	<p>2.0 Principles</p> <p>The person performing this task must be able to explain the following principles:</p> <ol style="list-style-type: none"> 2.1 Electronic display system composition and working principles; 2.2 Electronic display system testing principles. <p>3.0 Theories</p> <p>The person performing this task must be able to explain the following:</p> <ol style="list-style-type: none"> 3.1 Basic methods of aircraft maintenance; 3.2 Human factors in maintenance processes; 3.1 Radio wave and propagation; 3.2 Recognition and testing methods for electronic components; 3.3 Basic structures of electronic display systems; 3.4 Types and operation of electronic display systems; 3.5 Applicable scope of civil aviation regulations. <p>4.0 Essential skills</p> <ol style="list-style-type: none"> 4.1 Use of AMMs; 4.2 Testing and operation of aircraft instrument systems; 4.3 Computer skills; 4.4 Critical thinking; 4.5 Problem-solving competence; 4.6 Stress management; 4.7 Teamwork.
<p>DESCRIPTION OF THE END PRODUCT / SERVICE</p>	<p>Aircraft electronic display systems are tested in accordance with approved technical specifications and procedures..</p>
<p>CIRCUMSTANTIAL KNOWLEDGE</p>	<p>Detailed knowledge about:</p> <ol style="list-style-type: none"> 1. Safety operation of equipment and tools; 2. Occupational health and safety; 3. AMMs.

OCCUPATION	AVIONICS MAINTENANCE ENGINEER	OCCUPATION CODE	
DUTY TITLE	PERFORM ANALYSIS AND ISOLATION OF FAULTS IN AIRCRAFT INSTRUMENT SYSTEMS	DUTY NO.	704
TASK TITLE	IMPLEMENT ANALYSIS AND ISOLATION OF FAULTS IN ELECTRONIC DISPLAY SYSTEMS	TASK NO.	7043
PERFORMANCE CRITERIA	The person performing this task must be able to analyse and isolate faults in aircraft electronic display systems in accordance with approved technical specifications and procedures.		
RANGE STATEMENT	<p>The task can be performed in an AMO's aircraft under the supervision of a certified person.</p> <p>The equipment and tools to be used include:</p> <p>Equipment and tools:</p> <ol style="list-style-type: none"> 1. Personal protective equipment; 2. Computer with accessories; 3. Electronics technician's Tool kit; 4. Multimeters; 5. Heat guns; 6. Anti-static wrist straps; 7. Soldering guns; 8. Crimping tools; 9. Connector pick-up and delivery tools; 10. Safety gear, 11. Work bench. <p>Materials:</p> <ol style="list-style-type: none"> 1. Contact cleaners; 2. Contact enhancers; 3. Electrical jointing; 4. Wires; 5. Welding materials; 6. Heat shrinkable sleeves; 7. Air filters. 		
EVIDENCE REQUIREMENT			
PRACTICAL PERFORMANCE	UNDERPINNING KNOWLEDGE		
<p>The person performing this task must be able to do the following:</p> <ol style="list-style-type: none"> 1. Select tools, equipment and safety gear; 2. Observe health and safety regulations; 3. Review aircraft status reports; 	<p>Detailed knowledge about:</p> <p>1.0 Methods</p> <p>The person performing this task must be able to explain how to:</p> <ol style="list-style-type: none"> 1.1 Perform fault analysis and isolation for electronic display systems; 		

<p>4. Analyse and isolate faults according to the corresponding test reports and troubleshooting manuals;</p> <p>5. Perform fault analysis of the following:</p> <ol style="list-style-type: none"> EADI; EHSI; PFD; Symbol generator; EICAS/ECAM; MCDU; CDS; Clock adjustment control device. <p>6. Operate and inspect the functions of the following:</p> <ol style="list-style-type: none"> EADI; EHSI; PFD; Symbol generator; EICAS/ECAM; MCDU; CDS; Clock adjustment control device. <p>7. Replace the following components according to airworthiness requirements:</p> <ol style="list-style-type: none"> EADI; EHSI; PFD; Symbol generator; EICAS/ECAM; CDS; Clock adjustment control device. <p>8. Repair defective wires and coaxial cables;</p> <p>9. Perform final inspections and sign corresponding task cards;</p> <p>10. Clean the workplace, tools and equipment;</p> <p>11. Arrange and store the tools and equipment;</p> <p>12. Submit task cards to the certification engineer for certification and aircraft delivery for use;</p> <p>13. Restore the aircraft to its normal state.</p>	<p>1.2 Determine the possible causes of electronic display system problems;</p> <p>1.3 Troubleshoot electronic display system circuits;</p> <p>1.4 Repair aircraft wires and coaxial cables;</p> <p>1.5 Replace instrument-related components.</p> <p>2.0 Principles The person performing this task must be able to explain the following principles:</p> <p>2.1 Main components of electronic display systems;</p> <p>2.2 Working principles of electronic display systems.</p> <p>3.0 Theories The person performing this task must be able to explain the following:</p> <p>3.1 Basic methods of aircraft maintenance;</p> <p>3.2 Human factors in maintenance processes;</p> <p>3.1 Underpinning knowledge of coaxial cable transmission, cabling and connection;</p> <p>3.2 Recognition and testing methods for electronic components;</p> <p>3.3 Basic structures of electronic display systems;</p> <p>3.4 Types and operation of electronic display systems;</p> <p>3.5 Applicable scope of civil aviation regulations.</p> <p>4.0 Essential skills</p> <p>4.1 Fault analysis, prejudgment and prediction competence;</p> <p>4.2 Use of AMMs;</p> <p>4.3 Use of FIMs;</p> <p>4.4 Engineering technical report writing competence;</p> <p>4.5 Computer skills;</p> <p>4.6 Critical thinking;</p> <p>4.7 Problem-solving competence;</p> <p>4.8 Stress management;</p> <p>4.9 Teamwork;</p> <p>4.10 Communication skills.</p>
<p>DESCRIPTION OF THE END PRODUCT / SERVICE</p>	<p>Faults in aircraft electronic display systems are analysed and isolated in accordance with approved technical specifications and procedures.</p>
<p>CIRCUMSTANTIAL KNOWLEDGE</p>	<p>Detailed knowledge about:</p> <p>1. Safety operation of equipment and tools;</p>

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| | <ol style="list-style-type: none">2. Occupational health and safety;3. AMMs. |
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OCCUPATION	AVIONICS MAINTENANCE ENGINEER	OCCUPATION CODE	
DUTY TITLE	PERFORM ANALYSIS AND ISOLATION OF FAULTS IN AIRCRAFT INSTRUMENT SYSTEMS	DUTY NO.	704
TASK TITLE	CONDUCT TESTING OF ENGINE INSTRUMENT SYSTEMS	TASK NO.	7044
PERFORMANCE CRITERIA	The person performing this task must be able to test aircraft engine instrument systems in accordance with approved technical specifications and procedures.		
RANGE STATEMENT	<p>The task can be performed in an avionics maintenance workshop under the supervision of senior avionics maintenance engineers.</p> <p>The equipment and tools to be used include:</p> <ol style="list-style-type: none"> 1. Personal protective equipment; 2. Computers with accessories; 3. Electronics Technician's Toolkit; 4. Engine diagnostics kit; 5. Igniter cables; 6. Digital turbine temperature testers; 7. Circuit breaker tags; 8. Heat guns; 9. Anti-static wrist straps; 10. Soldering guns; 11. Crimping tools; 12. Connector pick-up and delivery tools; 13. Safety gear; 14. Work bench. 		
EVIDENCE REQUIREMENT			
PRACTICAL PERFORMANCE		UNDERPINNING KNOWLEDGE	
<p>The person performing this task must be able to do the following:</p> <ol style="list-style-type: none"> 1. Select tools, equipment and safety gear; 2. Observe health and safety regulations; 3. Verify task cards and maintenance instructions; 4. Review all applicable airworthiness directives and service bulletins; 5. Execute all applicable airworthiness directives and service bulletin instructions; 6. Test engine instrument systems; 7. Perform tests on the following items: <ol style="list-style-type: none"> a. Tachometer; 		<p>Detailed knowledge about:</p> <p>1.0 Methods</p> <p>The person performing this task must be able to explain how to:</p> <ol style="list-style-type: none"> 1.1 Inquire and use maintenance task cards; 1.2 Test engine instrument systems. <p>2.0 Principles</p> <p>The person performing this task must be able to explain the following principles:</p> <ol style="list-style-type: none"> 2.1 Working principles and testing principles of engine rotational speed indicating systems; 2.2 Main components, working principles and testing principles of fuel indicating systems; 	

<ul style="list-style-type: none"> b. Fuel flow indicator; c. Fuel quantity indicator; d. Fuel flow transmitter; e. Oil pressure gauge; f. Oil quantity indicator; g. Engine pressure ratio (EPR) indicator; h. Exhaust gas temperature (EGT) indicator; i. Inter-turbine temperature (ITT); j. Engine vibration indicator; k. Engine pipelines and transmission cables; l. Flap status indicator. <p>8. Implement the following system-level tests:</p> <ul style="list-style-type: none"> a. Engine rotational speed indicating system; b. Fuel indicating system; c. Oil pressure gauge; d. Oil quantity indicating system; e. Engine thrust indicating system; f. Engine temperature indicating system; g. Engine vibration indicating system; h. Flap status indicating system. <p>9. Perform final tests and sign task cards;</p> <p>10. Record test results;</p> <p>11. Submit task cards to the certification engineer for certification and aircraft delivery for use;</p> <p>12. Restore the aircraft to its normal state.</p> <p>13. Clean tools, equipment and the workplace;</p> <p>14. Store tools, equipment and safety gear;</p> <p>15. Submit test reports for use in fault analysis and isolation;</p>	<ul style="list-style-type: none"> 2.3 Main components, working principles and testing principles of oil pressure gauges; 2.4 Main components, working principles and testing principles of oil quantity indicating systems; 2.5 Main components, working principles and testing principles of engine thrust indicating systems; 2.6 Main components, working principles and testing principles of engine temperature indicating systems; 2.7 Main components, working principles and testing principles of engine vibration indicating systems; 2.8 Main components, working principles and testing principles of flap status indicating systems; 2.9 Human factors; 2.10 Civil aviation regulations. <p>3.0 Theories</p> <p>The person performing this task must be able to explain the following:</p> <ul style="list-style-type: none"> 3.1 Recognition and testing methods for electronic components; 3.2 Methods of connecting and overhauling electrical circuits; 3.3 Digital circuit logic operations and processing methods; 3.4 Basic maintenance skills and practice methods; 3.5 Basic structures of engine instrument systems; 3.6 Types and operation methods of engine instruments; 3.7 Methods of using AMMs; 3.8 Methods of developing aircraft maintenance schemes. <p>4.0 Essential skills</p> <ul style="list-style-type: none"> 4.1 Data analysis competence; 4.2 Engineering technical report writing competence; 4.3 Computer skills; 4.4 Critical thinking; 4.5 Problem-solving competence; 4.6 Stress management; 4.7 Teamwork; 4.8 Communication skills.
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DESCRIPTION OF THE END PRODUCT / SERVICE	Aircraft engine instrument systems are tested in accordance with approved technical specifications and procedures..
CIRCUMSTANTIAL KNOWLEDGE	Detailed knowledge about: <ol style="list-style-type: none"> 1. Safety operation of equipment and tools; 2. Occupational health and safety; 3. AMMs.

OCCUPATION	AVIONICS MAINTENANCE ENGINEER	OCCUPATION CODE	
DUTY TITLE	PERFORM ANALYSIS AND ISOLATION OF FAULTS IN AIRCRAFT INSTRUMENT SYSTEMS	DUTY NO.	704
TASK TITLE	PERFORM ANALYSIS AND ISOLATION OF FAULTS IN ENGINE INSTRUMENT SYSTEMS	TASK NO.	7045
PERFORMANCE CRITERIA	The person performing this task must be able to analyse and isolate faults in engine instrument systems in accordance with approved technical specifications and procedures.		
RANGE STATEMENT	<p>The task can be performed in an avionics maintenance workshop under the supervision of senior avionics maintenance engineers.</p> <p>The equipment and tools to be used include:</p> <p>Equipment and tools:</p> <ol style="list-style-type: none"> 1. Personal protective equipment; 2. Computers with accessories; 3. Electronics technician's tool kit; 4. Engine diagnostics kit; 5. Digital turbine temperature testers; 6. Circuit breaker tags; 7. Safety gear; 8. Work bench. <p>Materials:</p> <ol style="list-style-type: none"> 1. Contact cleaners; 2. Contact enhancers; 3. Electrical jointing; 4. Wires; 5. Welding materials; 6. Heat shrinkable sleeves. 		
EVIDENCE REQUIREMENT			
PRACTICAL PERFORMANCE	UNDERPINNING KNOWLEDGE		
<p>The person performing this task must be able to do the following:</p> <ol style="list-style-type: none"> 1. Select appropriate tools, equipment and safety devices for the task; 2. Observe health and safety regulations; 3. Verify aircraft status reports; 4. Analyse and isolate faults according to the corresponding test reports and troubleshooting manuals; 5. Perform fault analysis of the following: 	<p>Detailed knowledge about:</p> <p>1.0 Methods</p> <p>The person performing this task must be able to explain how to:</p> <ol style="list-style-type: none"> 1.1 Analyse faults in engine instrument systems; 1.2 Troubleshoot engine instrument systems; <p>2.0 Principles</p> <p>The person performing this task must be able to explain the following principles:</p>		

<ul style="list-style-type: none"> a. Tachometer; b. Fuel flow indicator; c. Fuel quantity indicator; d. Fuel flow transmitter; e. Oil pressure gauge; f. Oil quantity indicator; g. Engine pressure ratio (EPR) indicator; h. Exhaust gas temperature (EGT) indicator; i. Inter-turbine temperature (ITT); j. Engine vibration indicator; k. Engine pipelines and transmission wires; l. Flap status indicator. <p>6. Perform system-level fault analysis of the following:</p> <ul style="list-style-type: none"> a. Engine rotational speed indicating system; b. Fuel indicating system; c. Oil pressure gauge; d. Oil quantity indicating system; e. Engine thrust indicating system; f. Engine temperature indicating system; g. Engine vibration indicating system; m. Flap status indicating system. <p>7. Isolate observed faults in:</p> <ul style="list-style-type: none"> a. Tachometer; b. Fuel flow indicator; c. Fuel quantity indicator; d. Fuel flow transmitter; e. Oil pressure gauge; f. Oil quantity indicator; g. Engine pressure ratio (EPR) indicator; h. Exhaust gas temperature (EGT) indicator; i. Inter-turbine temperature (ITT); j. Engine vibration indicator; k. Engine pipelines and transmission wires; n. Flap status indicator. <p>8. Perform final inspections and sign task cards;</p> <p>9. Record all test results;</p> <p>10. Submit task cards to the certification engineer for certification and aircraft delivery for use;</p> <p>11. Restore the aircraft to its normal state.</p>	<ul style="list-style-type: none"> 2.1 Main components, working principles, possible causes of problems of and fault prejudgment and prediction for engine rotational speed indicating systems; 2.2 Main components, working principles, possible causes of problems of and fault prejudgment and prediction for fuel indicating systems; 2.3 Main components, working principles, possible causes of problems of and fault prejudgment and prediction for oil pressure gauges; 2.4 Main components, working principles, possible causes of problems of and fault prejudgment and prediction for oil quantity indicating systems; 2.5 Main components, working principles, possible causes of problems of and fault prejudgment and prediction for engine thrust indicating systems; 2.6 Main components, working principles, possible causes of problems of and fault prejudgment and prediction for engine temperature indicating systems; 2.7 Main components, working principles, possible causes of problems of and fault prejudgment and prediction for engine vibration indicating systems; 2.8 Main components, working principles, possible causes of problems of and fault prejudgment and prediction for flag status indicating systems; 2.9 Human factors; 2.10 Civil aviation regulations. <p>3.0 Theories</p> <p>The person performing this task must be able to explain the following:</p> <ul style="list-style-type: none"> 3.1 Recognition and testing methods for electronic components; 3.2 Methods of connecting and overhauling electrical circuits; 3.3 Digital circuit logic operations and processing methods; 3.4 Basic maintenance skills and practice methods; 3.5 Basic structures of engine instrument systems; 3.6 Types and operation methods of engine instruments; 3.7 Methods of using AMMs; 3.8 Methods of developing aircraft maintenance schemes; 3.9 Methods of using FIMs.
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<p>12. Clean tools, equipment and the workplace;</p> <p>13. Store tools, equipment and safety gear.</p>	<p>4.0 Essential skills</p> <p>4.1 Query of AMMs;</p> <p>4.2 Use of aircraft maintenance schemes;</p> <p>4.3 Fault analysis, prejudgment and prediction competence;</p> <p>4.4 Engineering technical report writing competence;</p> <p>4.5 Computer skills;</p> <p>4.6 Critical thinking;</p> <p>4.7 Problem-solving competence;</p> <p>4.8 Stress management;</p> <p>4.9 Teamwork;</p> <p>4.10 Communication skills.</p>
<p>DESCRIPTION OF THE END PRODUCT / SERVICE</p>	<p>Faults in engine instrument systems are analysed and isolated in accordance with approved technical specifications and procedures.</p>
<p>CIRCUMSTANTIAL KNOWLEDGE</p>	<p>Detailed knowledge about:</p> <ol style="list-style-type: none"> 1. Safety operation of equipment and tools; 2. Occupational health and safety.

OCCUPATION	AVIONICS MAINTENANCE ENGINEER	OCCUPATION CODE	
DUTY TITLE	PERFORM ANALYSIS AND ISOLATION OF FAULTS IN AIRCRAFT RADIO COMMUNICATION AND NAVIGATION SYSTEMS	DUTY NO.	704
TASK TITLE	CARRY OUT TESTING OF THE AIRCRAFT AIR DATA INERTIAL REFERENCE SYSTEM (ADIRS)	TASK NO.	7046
PERFORMANCE CRITERIA	The person performing this task must be able to test the aircraft air data inertial reference system (ADIRS) in accordance with approved technical specifications and procedures.		
RANGE STATEMENT	<p>The task can be performed in an AMO's aircraft under the supervision of a certified person.</p> <p>The equipment and tools to be used include:</p> <p>Equipment and tools:</p> <ol style="list-style-type: none"> 1. Personal protective equipment; 2. Computers with accessories; 3. Electronics technician's tool kit; 4. Engine diagnostics kit; 5. Digital turbine temperature testers; 6. Circuit breaker tags; 7. Safety gear; 8. Work bench. <p>Materials:</p> <ol style="list-style-type: none"> 1. Cleaners. 		
EVIDENCE REQUIREMENT			
PRACTICAL PERFORMANCE		UNDERPINNING KNOWLEDGE	
<p>The person performing this task must be able to do the following:</p> <ol style="list-style-type: none"> 1. Select tools, equipment and safety gear; 2. Observe health and safety regulations; 3. Verify task cards and relevant maintenance instructions; 4. Review all applicable airworthiness directives and service bulletins; 5. Execute all applicable airworthiness directives and service bulletin instructions; 6. Perform tests on the following items: <ol style="list-style-type: none"> a. ADIRS control display unit; b. ADIRS mode selection panel; 		<p>Detailed knowledge about:</p> <p>1.0 Methods</p> <p>The person performing this task must be able to explain how to:</p> <ol style="list-style-type: none"> 1.1 Check ADIRS control display units; 1.2 Test ADIRS control display units; 1.3 Test ADIRS mode selection panels; 1.4 Test ADIRUs. <p>2.0 Principles</p> <p>The person performing this task must be able to explain the following principles:</p> <ol style="list-style-type: none"> 2.1 ADIRS composition; 2.2 ADIRS basic working principles; 	

<p>c. ADIRU.</p> <p>7. Perform tests on the following system:</p> <p>a. Air data/inertial reference system.</p> <p>8. Perform system tests and sign task cards;</p> <p>9. Record all test results;</p> <p>10. Submit task cards to the certification engineer for certification and aircraft delivery for use;</p> <p>11. Restore the aircraft to its normal state;</p> <p>12. Clean tools, equipment and the workplace,</p> <p>13. Store tools, equipment and safety gear;</p>	<p>2.3 ADIRS testing processes.</p> <p>3.0 Theories</p> <p>The person performing this task must be able to explain the following:</p> <p>3.1 Maintenance practice;</p> <p>3.2 Human factors;</p> <p>3.3 Civil aviation regulations;</p> <p>3.4 Recognition and testing methods for electronic components;</p> <p>3.5 ADIRS control display unit operation;</p> <p>3.6 ADIRS mode selection panel operation;</p> <p>3.7 ADIRU functions and testing.</p> <p>4.0 Essential skills</p> <p>4.1 Use of AMMs;</p> <p>4.2 Use of AMMs;</p> <p>4.3 Use of FIMs;</p> <p>4.4 Computer skills;</p> <p>4.5 Critical thinking;</p> <p>4.6 Problem-solving competence;</p> <p>4.7 Stress management;</p> <p>4.8 Teamwork.</p>
<p>DESCRIPTION OF THE END PRODUCT / SERVICE</p>	<p>The aircraft ADIRS is tested in accordance with approved technical specifications and procedures.</p>
<p>CIRCUMSTANTIAL KNOWLEDGE</p>	<p>Detailed knowledge about:</p> <ol style="list-style-type: none"> 1. Safety operation of equipment and tools; 2. Occupational health and safety; 3. AMMs.

OCCUPATION	AVIONICS MAINTENANCE ENGINEER	OCCUPATION CODE	
DUTY TITLE	PERFORM ANALYSIS AND ISOLATION OF FAULTS IN AIRCRAFT INSTRUMENT SYSTEMS	DUTY NO.	704
TASK TITLE	IMPLEMENT ANALYSIS AND ISOLATION OF FAULTS IN AIR DATA INSTRUMENT SYSTEMS	TASK NO.	7047
PERFORMANCE CRITERIA	The person performing this task must be able to analyse and isolate faults in aircraft air data instrument systems in accordance with approved technical specifications and procedures.		
RANGE STATEMENT	<p>The task can be performed in an AMO's aircraft under the supervision of a certified person.</p> <p>The equipment and tools to be used include:</p> <p>Equipment and tools:</p> <ol style="list-style-type: none"> 1. Personal protective equipment; 2. Pitot-static pressure test adapter kits; 3. Plugs; 4. Target proximity sensor drives; 5. Test stopwatches; 6. External power supplies; 7. Computers with accessories; 8. Electronics technician's complete tool kit; 9. Safety gear; 10. Work bench. <p>Materials:</p> <ol style="list-style-type: none"> 1. Drainage strips; 2. Air data pipelines. 		
EVIDENCE REQUIREMENT			
PRACTICAL PERFORMANCE	UNDERPINNING KNOWLEDGE		
<p>The person performing this task must be able to do the following:</p> <ol style="list-style-type: none"> 1. Select tools, equipment and safety gear; 2. Observe health and safety regulations; 3. Verify aircraft status reports; 4. Analyse and isolate faults according to the corresponding test reports and troubleshooting manuals; 5. Perform the pitot static leakage test; 6. Perform the static pressure system leakage test; 7. Check air data module functions; 	<p>Detailed knowledge about:</p> <p>1.0 Methods</p> <p>The person performing this task must be able to explain how to:</p> <ol style="list-style-type: none"> 1.1 Analyse air data instrument system test reports; 1.2 Determine fault causes of air data instrument system circuits; 1.3 Troubleshoot air data instrument system circuits; <p>2.0 Principles</p> <p>The person performing this task must be able to explain the following principles:</p>		

<p>8. Perform the following inspections:</p> <ol style="list-style-type: none"> a. TAT probe; b. Pitot-static pressure probe; c. Static port; d. Altimeter; e. Vertical speed indicator; f. Machmeter indicator; g. ASI; h. ADC; i. Pipes and hoses; j. AoA blade and probe; k. Drainage strip and related equipment; l. Altitude and airspeed switch; m. FDR. <p>9. Check the operation of the probe heating system, ADC and FDR;</p> <p>10. Resolve all issues observed in the following:</p> <ol style="list-style-type: none"> a. TAT probe; b. Air data instrument indicator; c. Pitot-static pressure probe; d. Altimeter; e. Vertical speed indicator; f. Machmeter indicator; g. ASI; h. ADC; i. Pipes and hoses; j. AoA blade and probe; k. Drainage strip and related equipment; l. Altitude and airspeed switch; m. FDR. <p>11. Replace defective wires and coaxial cables;</p> <p>12. Perform final inspections and sign corresponding task cards;</p> <p>13. Record all test results;</p> <p>14. Submit task cards to the certification engineer for certification and aircraft delivery for use;</p> <p>15. Restore the aircraft to its normal state.</p> <p>16. Clean the workplace, tools and equipment;</p> <p>17. Arrange and store the tools and equipment;</p>	<p>2.1 Main components and working principles of air data systems;</p> <p>2.2 Principles of diagnosing faults in air data instrument systems.</p> <p>3.0 Theories</p> <p>The person performing this task must be able to explain the following:</p> <ol style="list-style-type: none"> 3.1 Basic methods of aircraft maintenance; 3.2 Human factors in maintenance processes; 3.1 Applicable scope of civil aviation regulations; 3.2 Recognition and testing methods for electronic components; 3.3 ADIRS control display unit operation; 3.4 ADIRS mode selection panel operation; 3.6 ADIRU functions and test methods; 3.7 Underpinning knowledge of coaxial cable transmission, cabling and connection. <p>4.0 Essential skills</p> <ol style="list-style-type: none"> 4.1 Engineering technical report writing competence; 4.2 Computer skills; 4.3 Critical thinking; 4.4 Problem-solving competence; 4.5 Stress management; 4.6 Teamwork; 4.7 Communication skills.
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DESCRIPTION OF THE END PRODUCT / SERVICE	Faults in aircraft air data instrument systems are analysed and isolated in accordance with approved technical specifications and procedures..
CIRCUMSTANTIAL KNOWLEDGE	Detailed knowledge about: <ol style="list-style-type: none"> 1. Safety operation of equipment and tools; 2. Occupational health and safety; 3. AMMs.

OCCUPATION	AVIONICS MAINTENANCE ENGINEER	OCCUPATION CODE	
DUTY TITLE	PERFORM ANALYSIS AND ISOLATION OF FAULTS IN AIRCRAFT INSTRUMENT SYSTEMS	DUTY NO.	704
TASK TITLE	CONDUCT TESTING OF GYRO INSTRUMENT SYSTEMS	TASK NO.	7048
PERFORMANCE CRITERIA	The person performing this task must be able to test aircraft gyro instrument systems in accordance with approved technical specifications and procedures.		
RANGE STATEMENT	<p>The task can be performed in an AMO's aircraft under the supervision of a certified aircraft maintenance engineer.</p> <p>The equipment and tools to be used include:</p> <p>Equipment and tools:</p> <ol style="list-style-type: none"> 1. Personal protective equipment; 2. Computers with accessories; 3. Electronics Technician's tool kit; 4. Multimeters; 5. Air pressure guns; 6. Anti-static wrist straps; 7. Soldering guns; 8. Crimping tools; 9. Connector pick-up and delivery tools; 10. Vacuum pumps; 11. Gyro tester tilt tables; 12. Safety gear; 13. Work bench. <p>Materials:</p> <ol style="list-style-type: none"> 1. Contact cleaners; 2. Contact enhancers; 3. Electrical jointing; 4. Wires; 5. Welding materials; 6. Heat shrinkable sleeves; 7. Air filters. 		
EVIDENCE REQUIREMENT			
PRACTICAL PERFORMANCE		UNDERPINNING KNOWLEDGE	
<p>The person performing this task must be able to do the following:</p> <ol style="list-style-type: none"> 1. Select tools, equipment and safety gear; 2. Observe health and safety regulations; 		<p>Detailed knowledge about:</p> <p>1.0 Methods</p> <p>The person performing this task must be able to explain how to:</p> <ol style="list-style-type: none"> 1.1 Inquire and use maintenance task cards; 	

<ol style="list-style-type: none"> 3. Verify task cards and maintenance instructions; 4. Review and implement all applicable airworthiness directives and service bulletins; 5. Perform gyro instrument system calibration checks in standby mode; 6. Perform fault analysis of the following: <ol style="list-style-type: none"> a. Attitude sensing device; b. Direction sensing device; c. Attitude direction indicator; d. Turn and slip indicator; e. Accelerometer; f. Horizontal situation indicator/radio magnetic indicator. 7. Perform system-level fault analysis of the following: <ol style="list-style-type: none"> a. Attitude sensing device; b. Direction sensing device; c. Attitude direction indicator; d. Turn and slip indicator; e. Accelerometer; f. Horizontal situation indicator/radio magnetic indicator. 8. Isolate detected faults in: <ol style="list-style-type: none"> a. Attitude sensing device; b. Direction sensing device; c. Attitude direction indicator; d. Turn and slip indicator; e. Accelerometer; f. Horizontal situation indicator/radio magnetic indicator. 9. Perform final inspections and sign task cards; 10. Record all test results; 11. Submit task cards to the certification engineer for certification and aircraft delivery for use; 12. Restore the aircraft to its normal state. 13. Clean tools, equipment and the workplace; 14. Store tools, equipment and safety gear; 	<p>1.2 Test gyro instrument systems.</p> <p>2.0 Principles The person performing this task must be able to explain the following principles:</p> <ol style="list-style-type: none"> 2.1 Working principles of gyro instrument systems; 2.2 Testing principles of gyro instrument systems. <p>3.0 Theories The person performing this task must be able to explain the following:</p> <ol style="list-style-type: none"> 3.1 Recognition and testing methods for electronic components and circuits; 3.2 Methods of connecting and overhauling electrical circuits; 3.3 Basic methods of aircraft maintenance; 3.4 Human factors in maintenance processes; 3.5 Basic structures of gyro instrument systems; 3.6 Types and operation methods of gyro instruments; 3.7 Gyro instrument system maintenance schemes; 3.8 Applicable scope of civil aviation regulations. <p>4.0 Essential skills</p> <ol style="list-style-type: none"> 4.1 Data analysis competence; 4.2 Engineering technical report writing competence; 4.3 Computer skills; 4.4 Critical thinking; 4.5 Problem-solving competence; 4.6 Stress management; 4.7 Teamwork; 4.8 Communication skills.
<p>DESCRIPTION OF THE END PRODUCT / SERVICE</p>	<p>Aircraft gyro instrument systems are tested in accordance with approved technical specifications and procedures.</p>

CIRCUMSTANTIAL KNOWLEDGE	Detailed knowledge about: <ol style="list-style-type: none">1. Maintenance strategies and procedures;2. Tools and equipment and on-site operation safety;3. Scope of duties;4. Occupational health and safety.
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OCCUPATION	AVIONICS MAINTENANCE ENGINEER	OCCUPATION CODE	
DUTY TITLE	PERFORM ANALYSIS AND ISOLATION OF FAULTS IN AIRCRAFT INSTRUMENT SYSTEMS	DUTY NO.	704
TASK TITLE	PERFORM REPAIR OF AIRCRAFT GYRO INSTRUMENT SYSTEMS	TASK NO.	7049
PERFORMANCE CRITERIA	The person performing this task must be able to repair aircraft gyro instrument systems in accordance with approved technical specifications and procedures.		
RANGE STATEMENT	<p>The task can be performed in an AMO's aircraft under the supervision of a certified aircraft maintenance engineer.</p> <p>The equipment and tools to be used include:</p> <p>Equipment and tools:</p> <ol style="list-style-type: none"> 1. Personal protective equipment; 2. Computers with accessories; 3. Electronics technician's tool kit; 4. Multimeters; 5. Air pressure guns; 6. Anti-static wrist straps; 7. Soldering guns; 8. Crimping tools; 9. Connector pick-up and delivery tools; 10. Vacuum pumps; 11. Gyro tester tilt tables; 12. Safety gear; 13. Work bench. <p>Materials:</p> <ol style="list-style-type: none"> 1. Contact cleaners; 2. Contact enhancers; 3. Electrical jointing; 4. Wires; 5. Welding materials; 6. Heat shrinkable sleeves; 7. Air filters. 		
EVIDENCE REQUIREMENT			
PRACTICAL PERFORMANCE		UNDERPINNING KNOWLEDGE	
<p>The person performing this task must be able to do the following:</p> <ol style="list-style-type: none"> 1. Select tools, equipment and safety gear; 2. Observe health and safety regulations; 3. Verify aircraft status reports; 		<p>Detailed knowledge about:</p> <p>1.0 Methods</p> <p>The person performing this task must be able to explain how to:</p> <ol style="list-style-type: none"> 1.1 Conduct fault diagnosis; 1.2 Conduct disassembly and installation; 	

<ol style="list-style-type: none"> 4. Perform gyro instrument system calibration checks in standby mode; 5. Establish the faults according to the corresponding aircraft troubleshooting manuals; 6. Perform troubleshooting of the following: <ol style="list-style-type: none"> a. Altitude sensing device; b. Direction sensing device; c. Altitude direction indicator; d. Turn and slip indicator; e. Accelerometer; f. Horizontal situation indicator/radio magnetic indicator. 7. Inspect the following: <ol style="list-style-type: none"> a. Altitude sensing device; b. Direction sensing device; c. Altitude direction indicator; d. Turn and slip indicator; e. Accelerometer; f. Horizontal situation indicator/radio magnetic indicator. 8. Perform the following operation inspections: <ol style="list-style-type: none"> a. Altitude sensing device; b. Direction sensing device; c. Altitude direction indicator; d. Turn and slip indicator; e. Accelerometer; f. Horizontal situation indicator/radio magnetic indicator. 9. Replace defective components in the following: <ol style="list-style-type: none"> a. Altitude sensing device; b. Direction sensing device; c. Altitude direction indicator; d. Turn and slip indicator; e. Accelerometer; f. Horizontal situation indicator/radio magnetic indicator. 10. Perform final inspections and sign appropriate defect rectification lists; 11. Record all test results. 12. Submit appropriate defect rectification lists to the certification engineer for certification and aircraft delivery for use; 13. Restore the aircraft to its normal state. 14. Clean tools, equipment and the workplace; 	<ol style="list-style-type: none"> 1.3 Conduct parts inspections; 1.4 Repair or replace parts; 1.5 Conduct calibration; 1.6. Conduct function testing. <p>2.0 Principles</p> <p>The person performing this task must be able to explain the following principles:</p> <ol style="list-style-type: none"> 2.1 Working principles of gyro instrument systems; 2.2 Maintenance principles of gyro instrument systems. <p>3.0 Theories</p> <p>The person performing this task must be able to explain the following:</p> <ol style="list-style-type: none"> 3.1 Recognition and testing methods for electronic components and circuits; 3.2 Methods of connecting and overhauling electrical circuits; 3.3 Human factors in maintenance processes; 3.4 Basic structures of gyro instrument systems; 3.5 Types and operation methods of gyro instruments; 3.6 How to develop gyro instrument system maintenance schemes; 3.7 Applicable scope of civil aviation regulations. <p>4.0 Essential skills</p> <ol style="list-style-type: none"> 4.1 Data analysis competence; 4.2 Engineering technical report writing competence; 4.3 Computer skills; 4.4 Critical thinking; 4.5 Problem-solving competence; 4.6 Stress management; 4.7 Teamwork; 4.8 Communication skills.
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15. Store tools, equipment and safety gear;	
DESCRIPTION OF THE END PRODUCT / SERVICE	Aircraft gyro instrument systems are repaired in accordance with approved technical specifications and procedures.
CIRCUMSTANTIAL KNOWLEDGE	Detailed knowledge about: <ol style="list-style-type: none"> 1. Maintenance strategies and procedures; 2. Tools and equipment and on-site operation safety; 3. Occupational health and safety.

OCCUPATION	AVIONICS MAINTENANCE ENGINEER	OCCUPATION CODE	
DUTY TITLE	PERFORM ANALYSIS AND ISOLATION OF FAULTS IN AIRCRAFT INSTRUMENT SYSTEMS	DUTY NO.	704
TASK TITLE	CARRY OUT TESTING OF AIRCRAFT MAGNETIC COMPASS INSTRUMENT SYSTEMS	TASK NO.	70410
PERFORMANCE CRITERIA	The person performing this task must be able to test aircraft magnetic compass instrument systems in accordance with approved technical specifications and procedures.		
RANGE STATEMENT	<p>The task can be performed in an AMO's aircraft under the supervision of a certified aircraft maintenance engineer.</p> <p>The equipment and tools to be used include:</p> <p>Equipment and tools:</p> <ol style="list-style-type: none"> 1. Personal protective equipment; 2. Electronics technician's Tool kit; 3. Computers with accessories; 4. Master compasses; 5. Nonmagnetic screwdrivers; 6. Safety gear; 7. Work bench. <p>Materials:</p> <ol style="list-style-type: none"> 1. Compass deviation correction cards. 		
EVIDENCE REQUIREMENT			
PRACTICAL PERFORMANCE	UNDERPINNING KNOWLEDGE		
<p>The person performing this task must be able to do the following:</p> <ol style="list-style-type: none"> 1. Select tools, equipment and safety gear; 2. Pay attention to health and safety when performing the task; 3. Verify task cards and maintenance instructions; 4. Review all applicable airworthiness directives and service bulletins; 5. Execute all applicable airworthiness directives and service bulletin instructions; 6. Perform magnetic compass calibration functions; 7. Perform fault analysis of the following: 	<p>Detailed knowledge about:</p> <p>1.0 Methods</p> <p>The person performing this task must be able to explain how to:</p> <ol style="list-style-type: none"> 1.1 Inquire and use maintenance task cards; 1.2 Test aircraft magnetic compass instrument systems. <p>2.0 Principles</p> <p>The person performing this task must be able to explain the following principles:</p> <ol style="list-style-type: none"> 2.1 Working principles of aircraft magnetic compass instrument systems; 2.2 Testing principles of aircraft magnetic compass instrument systems. <p>3.0 Theories</p>		

<ul style="list-style-type: none"> a. Flow valve; b. Directional gyro; c. Radio magnetic indicator; d. Direct reading compass. <p>8. Perform system-level fault analysis of the following:</p> <ul style="list-style-type: none"> a. Direct reading compass system; b. Remote reading compass system. <p>9. Isolate possible faults in:</p> <ul style="list-style-type: none"> a. Flow valve; b. Directional gyro; c. Radio magnetic indicator; d. Direct reading compass. <p>10. Perform final inspections and sign task cards;</p> <p>11. Record all test results and actions;</p> <p>12. Submit task cards to the certification engineer for certification and aircraft delivery for use;</p> <p>13. Restore the aircraft to its normal state.</p> <p>14. Clean tools, equipment and the workplace;</p> <p>15. Store tools and equipment;</p>	<p>The person performing this task must be able to explain the following:</p> <ul style="list-style-type: none"> 3.1 Recognition and testing methods for electronic components and circuits; 3.2 Methods of connecting and overhauling electrical circuits; 3.3 Human factors in maintenance processes; 3.4 Basic structures of aircraft magnetic compass instrument systems; 3.5 Types and operation methods of aircraft magnetic compass instruments; 3.6 How to develop aircraft magnetic compass instrument system maintenance schemes; 3.7 Applicable scope of civil aviation regulations. <p>4.0 Essential skills</p> <ul style="list-style-type: none"> 4.1 Data analysis competence; 4.2 Engineering technical report writing competence; 4.3 Computer skills; 4.4 Critical thinking; 4.5 Problem-solving competence; 4.6 Stress management; 4.7 Teamwork; 4.8 Communication skills.
<p>DESCRIPTION OF THE END PRODUCT / SERVICE</p>	<p>Aircraft magnetic compass instrument systems are tested in accordance with approved technical specifications and procedures.</p>
<p>CIRCUMSTANTIAL KNOWLEDGE</p>	<p>Detailed knowledge about:</p> <ul style="list-style-type: none"> 1. Maintenance strategies and procedures; 2. Tools and equipment and on-site operation safety; 3. Occupational health and safety.

OCCUPATION	AVIONICS MAINTENANCE ENGINEER	OCCUPATION CODE	
DUTY TITLE	PERFORM ANALYSIS AND ISOLATION OF FAULTS IN AIRCRAFT INSTRUMENT SYSTEMS	DUTY NO.	704
TASK TITLE	IMPLEMENT REPAIR OF AIRCRAFT MAGNETIC COMPASS INSTRUMENT SYSTEMS	TASK NO.	70411
PERFORMANCE CRITERIA	The person performing this task must be able to repair aircraft magnetic compass instrument systems in accordance with approved technical specifications and procedures.		
RANGE STATEMENT	<p>The task can be performed in an AMO's aircraft under the supervision of a certified aircraft maintenance engineer.</p> <p>The equipment and tools to be used include:</p> <p>Equipment and tools:</p> <ol style="list-style-type: none"> 1. Personal protective equipment; 2. Electronics Technician's Tool kit; 3. Computers with accessories; 4. Master compasses; 5. Nonmagnetic screwdrivers; 6. Safety gear; 7. Work bench. <p>Materials:</p> <ol style="list-style-type: none"> 1. Compass deviation correction cards. 		
EVIDENCE REQUIREMENT			
PRACTICAL PERFORMANCE	UNDERPINNING KNOWLEDGE		
<p>The person performing this task must be able to do the following:</p> <ol style="list-style-type: none"> 1. Select tools, equipment and safety gear; 2. Observe health and safety regulations; 3. Verify aircraft status reports; 4. Determine the faults according to the corresponding aircraft troubleshooting manuals; 5. Perform magnetic compass calibration functions; 6. Perform troubleshooting of the following: <ol style="list-style-type: none"> a. Flow valve; b. Directional gyro; c. Radio magnetic indicator; d. Direct reading compass. 7. Perform the following inspections: 	<p>Detailed knowledge about:</p> <p>1.0 Methods</p> <p>The person performing this task must be able to explain how to:</p> <ol style="list-style-type: none"> 1.1 Inquire and use maintenance task cards; 1.2 Test aircraft magnetic compass instrument systems. <p>2.0 Principles</p> <p>The person performing this task must be able to explain the following principles:</p> <ol style="list-style-type: none"> 2.1 Working principles of aircraft magnetic compass instrument systems; 2.2 Testing principles of aircraft magnetic compass instrument systems. 		

<ul style="list-style-type: none"> a. Flow valve; b. Directional gyro; c. Radio magnetic indicator; d. Direct reading compass. <p>8. Perform the following operation inspections:</p> <ul style="list-style-type: none"> a. Direct reading compass system; b. Remote reading compass system. <p>9. Resolve faults in the following;</p> <ul style="list-style-type: none"> a. Flow valve; b. Directional gyro; c. Radio magnetic indicator; d. Direct reading compass. <p>10. Perform final inspections and sign appropriate defect correction lists;</p> <p>11. Submit appropriate defect correction lists to the certification engineer for certification and aircraft delivery for use;</p> <p>12. Restore the aircraft to its normal state.</p> <p>13. Clean tools, equipment and the workplace;</p> <p>14. Store the tools, equipment and safety gear;</p>	<p>3.0 Theories</p> <p>The person performing this task must be able to explain the following:</p> <ul style="list-style-type: none"> 3.1 Recognition and testing methods for electronic components and circuits; 3.2 Methods of connecting and overhauling electrical circuits; 3.3 Human factors in maintenance processes; 3.4 Applicable scope of civil aviation regulations; 3.5 Basic structures of aircraft magnetic compass instrument systems; 3.6 Types and operation methods of aircraft magnetic compass instruments; 3.7 Aircraft magnetic compass instrument system maintenance schemes. <p>4.0 Essential skills</p> <ul style="list-style-type: none"> 4.1 Data analysis competence; 4.2 Engineering technical report writing competence; 4.3 Computer skills; 4.4 Critical thinking; 4.5 Problem-solving competence; 4.6 Stress management; 4.7 Teamwork; 4.8 Communication skills.
<p>DESCRIPTION OF THE END PRODUCT / SERVICE</p>	<p>Aircraft magnetic compass instrument systems are repaired in accordance with approved technical specifications and procedures.</p>
<p>CIRCUMSTANTIAL KNOWLEDGE</p>	<p>Detailed knowledge about:</p> <ul style="list-style-type: none"> 1. Maintenance strategies and procedures; 2. Tools and equipment and on-site operation safety; 3. Occupational health and safety.

OCCUPATION	AVIONICS MAINTENANCE ENGINEER	OCCUPATION CODE	
DUTY TITLE	PERFORM ANALYSIS AND ISOLATION OF FAULTS IN AIRCRAFT INSTRUMENT SYSTEMS	DUTY NO.	704
TASK TITLE	CONDUCT COMPREHENSIVE TRACING AND DIAGNOSIS OF FAULTS IN AIRCRAFT INSTRUMENT SYSTEMS	TASK NO.	70412
PERFORMANCE CRITERIA	The person performing this task must be able to comprehensively trace and diagnose faults in aircraft instrument systems in accordance with approved technical specifications and procedures.		
RANGE STATEMENT	<p>The task can be performed in an AMO's aircraft under the supervision of a certified aircraft maintenance engineer.</p> <p>The equipment and tools to be used include:</p> <p>Equipment and tools:</p> <ol style="list-style-type: none"> 1. Personal protective equipment; 2. Computers with accessories; 3. Electronics technician's complete tool kit; 4. Multimeters; 5. Heat guns; 6. Anti-static wrist straps; 7. Soldering guns; 8. Crimping tools; 9. Connector pick-up and delivery tools; 10. Pitot-static pressure test adapter kits; 11. Plugs; 12. Target proximity sensor drives; 13. Test stopwatches; 14. External power supplies; 15. Safety gear; 16. Work bench. <p>Materials:</p> <ol style="list-style-type: none"> 1. Drainage strips; 2. Air data pipelines; 3. Contact cleaners; 4. Contact enhancers; 5. Electrical jointing; 6. Wires; 7. Welding materials; 8. Heat shrinkable sleeves; 9. Air filters. 		
EVIDENCE REQUIREMENT			

PRACTICAL PERFORMANCE	UNDERPINNING KNOWLEDGE
<p>The person performing this task must be able to do the following:</p> <ol style="list-style-type: none"> 1. Select tools, equipment and safety gear; 2. Observe health and safety regulations; 3. Verify aircraft status reports; 4. Determine faults according to test reports, AMMs, etc.; 5. Trace and diagnose faults in the following system components: <ol style="list-style-type: none"> g. Electronic display system; h. Engine instrument system; i. Air data instrument system; j. Gyro instrument system; k. Magnetic compass instrument system. 6. Trace and diagnose faults in the following system circuits: <ol style="list-style-type: none"> a. Electronic display system; b. Engine instrument system; c. Air data instrument system; d. Gyro instrument system; e. Magnetic compass instrument system. 7. Perform final inspections and sign corresponding task cards; 8. Submit task cards to the certification engineer for certification and aircraft delivery for use; 9. Restore the aircraft to its normal state; 10. Clean tools, equipment and the workplace; 11. Store tools, equipment and safety gear. 	<p>Detailed knowledge about:</p> <p>1.0 Methods</p> <p>The person performing this task must be able to explain how to:</p> <ol style="list-style-type: none"> 1.1 Analyse aircraft instrument system test reports; 1.2 Determine possible fault causes of aircraft instrument systems; 1.3 Troubleshoot aircraft instrument systems; 1.4 Repair faulty components. <p>2.0 Principles</p> <p>The person performing this task must be able to explain the following principles:</p> <ol style="list-style-type: none"> 2.1 Working principles of aircraft instrument systems; 2.2 Principles of diagnosing faults in aircraft instrument systems. <p>3.0 Theories</p> <p>The person performing this task must be able to explain the following:</p> <ol style="list-style-type: none"> 3.1 Aircraft instrument system fault analysis and isolation processes; 3.2 Methods of using basic tools and testing equipment; 3.3 Methods of using AMMs; 3.4 Methods of developing aircraft maintenance schemes; 3.5 Methods of using FIMs; 3.6 Methods of using component maintenance manuals; 3.7 Methods of connecting and overhauling electrical circuits; 3.8 Recognition and testing methods for electronic components. <p>4.0 Essential skills</p> <ol style="list-style-type: none"> 4.1 Data analysis competence; 4.2 Engineering technical report writing competence; 4.3 Computer skills; 4.4 Critical thinking; 4.5 Problem-solving competence; 4.6 Stress management; 4.7 Teamwork; 4.8 Communication skills.

DESCRIPTION OF THE END PRODUCT / SERVICE	Faults in aircraft instrument systems are comprehensively traced and diagnosed in accordance with approved technical specifications and procedures.
CIRCUMSTANTIAL KNOWLEDGE	Detailed knowledge about: <ol style="list-style-type: none"> 1. Safety operation of equipment and tools; 2. Occupational health and safety; 3. AMMs.

OCCUPATION	AVIONICS MAINTENANCE ENGINEER	OCCUPATION CODE	
DUTY TITLE	CONDUCT ANALYSIS AND ISOLATION OF FAULTS IN AIRCRAFT ELECTRICAL CONTROL AND OPERATING SYSTEMS	DUTY NO.	705
TASK TITLE	CARRY OUT MANAGEMENT OF AIRCRAFT ELECTRICAL CONTROL AND OPERATING SYSTEMS MAINTENANCE	TASK NO.	7051
PERFORMANCE CRITERIA	The person performing this task must be able to carry out management of aircraft electrical control and operating systems maintenance in accordance with approved technical specifications and procedures.		
RANGE STATEMENT	<p>The task can be performed in an AMO under the supervision of an airline's quality department. The equipment and tools to be used include:</p> <ol style="list-style-type: none"> 1. Maintenance documents: airworthiness regulations, rules, procedures and maintenance manuals; 2. Computer with accessories; 3. Electrician's complete tools kit; 4. Aviation materials and consumables; 5. Transportation equipment; 6. Safety gear; 7. Work bench. 		
EVIDENCE REQUIREMENT			
PRACTICAL PERFORMANCE		UNDERPINNING KNOWLEDGE	
<p>The person performing this task must be able to do the following:</p> <ol style="list-style-type: none"> 1. Select the appropriate tools, equipment and safety devices; 2. Consult maintenance instructions; 3. Review all applicable airworthiness directives and service bulletins; 4. Assign suitable responsibilities and duties to relevant personnel; 5. Develop the maintenance plans for aircraft power supply systems; 6. Organize the implementation of aircraft power supply system maintenance; 		<p>Detailed knowledge about:</p> <p>1.0 Methods</p> <p>The person performing this task must be able to explain how to:</p> <ol style="list-style-type: none"> 1.1 Manage teams; 1.2 Control the schedule and quality of work; 1.3 Coordinate resources of all sides to ensure the smooth completion of work. <p>2.0 Principles</p> <p>The person performing this task must be able to explain the following principles:</p> <ol style="list-style-type: none"> 2.1 Principles of preventative maintenance; 2.2 Principles of troubleshooting and repair; 2.3 Principles of compliance with standards and procedures; 2.4 Principles of data recording and analysis. 	

<ul style="list-style-type: none"> 7. Communicate with and coordinate interactions between relevant departments; 8. Promote the conduct and implementation of work; 9. Supervise the schedule and quality of work; 10. Evaluate results; 11. Hold toolbox meetings; 12. Establish an effective incentive mechanism; 13. Prepare maintenance budget; 14. Control movement of spare parts and materials; 15. Manage stocks of parts and materials; 16. Manage movement of tools and equipment. 	<p>3.0 Theories</p> <p>The person performing this task must be able to explain the following:</p> <ul style="list-style-type: none"> 3.1 Job responsibilities of maintenance personnel; 3.2 Responsibilities and work procedures of management personnel; 3.3 Aircraft electrical control and operating system maintenance schemes. <p>4.0 Essential skills</p> <ul style="list-style-type: none"> 4.1 Technical document reading competence; 4.2 Teamwork skills; 4.3 Communication skills; 4.4 Customer service competence; 4.5 Report writing competence; 4.6 Computer application competence.
<p>DESCRIPTION OF THE END PRODUCT / SERVICE</p>	<p>Management of aircraft electrical control and operating systems maintenance is carried out in accordance with approved technical specifications and procedures.</p>
<p>CIRCUMSTANTIAL KNOWLEDGE</p>	<p>Detailed knowledge about:</p> <ul style="list-style-type: none"> 1. Safety operation of equipment and tools; 2. Occupational safety and health; 3. Safe disposal of materials.

OCCUPATION	AVIONICS MAINTENANCE ENGINEER	OCCUPATION CODE	
DUTY TITLE	CONDUCT ANALYSIS AND ISOLATION OF FAULTS IN AIRCRAFT ELECTRICAL CONTROL AND OPERATING SYSTEMS	DUTY NO.	705
TASK TITLE	PERFORM ANALYSIS AND ISOLATION OF FAULTS IN ELECTRICAL CONTROL SYSTEMS OF AIRCRAFT FIRE PROTECTION SYSTEMS	TASK NO.	7052
PERFORMANCE CRITERIA	The person performing this task must be able to analyse and isolate faults in electrical control systems of aircraft fire protection systems in accordance with approved technical specifications and procedures.		
RANGE STATEMENT	<p>The task can be performed in an AMO's aircraft under the supervision of a certified aircraft maintenance engineer.</p> <p>The equipment and tools to be used include:</p> <p>Equipment and tools:</p> <ol style="list-style-type: none"> 1. Personal protective equipment; 2. Computers with accessories; 3. Electrician's complete tool kit; 4. Fire extinguisher squib circuit testers; 5. Fire detection test devices; 6. Multimeters; 7. Heat guns; 8. Anti-static wrist straps; 9. Soldering guns; 10. Crimping tools; 11. Pin pick-up and delivery tools; 12. Safety gear; 13. Work bench. <p>Materials:</p> <ol style="list-style-type: none"> 1. Fuses; 2. Strapping tapes; 3. Cleaners; 4. Pin cleaners; 5. Pin enhancers; 6. Splice tubes; 7. Wires; 8. Welding materials; 9. Sealants; 10. Heat shrinkable tubes. 		
EVIDENCE REQUIREMENT			

PRACTICAL PERFORMANCE	UNDERPINNING KNOWLEDGE
<p>The person performing this task must be able to do the following:</p> <ol style="list-style-type: none"> 1. Select tools, equipment and safety gear; 2. Observe health and safety regulations; 3. Verify aircraft status reports; 4. Review all applicable airworthiness directives and service bulletins; 5. Execute all applicable airworthiness directives and service bulletin instructions; 6. Assign responsibilities and to maintenance personnel; 7. Develop maintenance plan for analyzing and isolating faults in electrical control systems for aircraft fire protection systems according to the corresponding test reports and troubleshooting manuals; 8. Organize team members for maintenance work; 9. Perform inspections and tests on the following items: <ol style="list-style-type: none"> a. Lavatory smoke detector; b. Cargo hold smoke detector; c. Overheat sensor; d. APU fire detection loop; e. Engine fire detection loop; f. Wing-body overheat detection loop; g. Fire warning component; h. Overheat sensor; i. APU fire extinguisher gauge pressure; j. Engine fire extinguisher gauge pressure; k. Fire extinguisher release switch; l. Pressure relief disc; m. Fire alarm panel; n. Portable fire extinguisher. 10. Perform system-level fault analysis of the following: <ol style="list-style-type: none"> a. Engine fire protection system; b. Engine fire extinguishing system; c. APU fire protection system; d. APU fire extinguishing system; 	<p>Detailed knowledge about:</p> <p>1.0 Methods</p> <p>The person performing this task must be able to explain how to:</p> <ol style="list-style-type: none"> 1.1 Analyse aircraft fire protection system reports; 1.2 Determine possible fault causes of aircraft fire protection systems; 1.3 Troubleshoot aircraft fire protection systems. <p>2.0 Principles</p> <p>The person performing this task must be able to explain the following principles:</p> <ol style="list-style-type: none"> 2.1 Circuit control principles of electrical control systems for aircraft fire protection systems; 2.2 Fault diagnosis principles of electrical control systems for aircraft fire protection systems; <p>3.0 Theories</p> <p>The person performing this task must be able to explain the following:</p> <ol style="list-style-type: none"> 3.1 Recognition and testing methods for electronic components; 3.2 Methods of connecting and overhauling electrical circuits; 3.3 Recognition and testing methods for digital components; 3.4 Aircraft maintenance, test and troubleshooting methods; 3.5 Recognition and testing methods for electrical control systems for aircraft fire protection systems; 3.6 Troubleshooting methods for electrical control systems for aircraft fire protection systems. <p>4.0 Essential skills</p> <ol style="list-style-type: none"> 4.1 Computer skills; 4.2 Teamwork skills; 4.3 Problem-solving competence; 4.4 Communication skills; 4.5 Engineering technical report writing competence; 4.6 Standard circuit construction competence; 4.7 Effective work execution competence.

<ul style="list-style-type: none"> e. Cargo hold fire protection system; f. Cargo hold fire extinguishing system; g. Lavatory fire protection system; h. Fuselage overheat detection system. <p>11. According to tested states and system fault analysis results, isolate possible faults in:</p> <ul style="list-style-type: none"> a. Lavatory smoke detector; b. Lavatory fire extinguisher pressure switch; c. APU fire detector; d. APU fire extinguisher squib firing circuit; e. APU fire extinguisher pressure switch; f. Cargo hold smoke detector; g. Cargo hold fire extinguisher squib firing circuit; h. Cargo hold fire extinguisher pressure switch; i. Fuselage overheat detector; j. Fire and overheat alarm circuits; k. Engine fire detector; l. Engine fire extinguisher squib firing circuit; m. Engine fire extinguisher pressure switch. <p>12. Perform final inspections and sign corresponding task cards;</p> <p>13. Submit task cards to the certification engineer for certification and aircraft delivery for use;</p> <p>14. Restore the aircraft to its normal state.</p> <p>15. Clean tools, equipment and the workplace;</p> <p>16. Store the tools and equipment.</p>	
<p>DESCRIPTION OF THE END PRODUCT / SERVICE</p>	<p>Faults in the electrical control systems of aircraft fire protection systems are analysed and isolated in accordance with approved technical specifications and procedures.</p>
<p>CIRCUMSTANTIAL KNOWLEDGE</p>	<p>Detailed knowledge about:</p> <ul style="list-style-type: none"> 1. Safety operation of equipment and tools; 2. Occupational health and safety; 3. AMMs.

OCCUPATION	AVIONICS MAINTENANCE ENGINEER	OCCUPATION CODE	
DUTY TITLE	CONDUCT ANALYSIS AND ISOLATION OF FAULTS IN AIRCRAFT ELECTRICAL CONTROL AND OPERATING SYSTEMS	DUTY NO.	705
TASK TITLE	CONDUCT ANALYSIS AND ISOLATION OF FAULTS IN AIRCRAFT FLIGHT CONTROL ELECTRICAL SYSTEMS	TASK NO.	7053
PERFORMANCE CRITERIA	The person performing this task must be able to analyse and isolate faults in aircraft flight control electrical systems in accordance with approved technical specifications and procedures.		
RANGE STATEMENT	<p>The task can be performed in an AMO's aircraft under the supervision of a certified aircraft maintenance engineer.</p> <p>The equipment and tools to be used include:</p> <p>Equipment and tools:</p> <ol style="list-style-type: none"> 1. Personal protective equipment; 2. Computers with accessories; 3. Electrician's complete tool kit; 4. Fire extinguisher squib circuit testers; 5. Fire detection test devices; 6. Multimeters; 7. Heat guns; 8. Anti-static wrist straps; 9. Soldering guns; 10. Crimping tools; 11. Pin pick-up and delivery tools; 12. Safety gear; 13. Work bench. <p>Materials:</p> <ol style="list-style-type: none"> 1. Fuses; 2. Strapping tapes; 3. Cleaners; 4. Pin cleaners; 5. Pin enhancers; 6. Splice tubes; 7. Wires; 8. Welding materials; 9. Sealants; 10. Heat shrinkable tubes. 		
EVIDENCE REQUIREMENT			
PRACTICAL PERFORMANCE		UNDERPINNING KNOWLEDGE	

<p>The person performing this task must be able to do the following:</p> <ol style="list-style-type: none"> 1. Select tools, equipment and safety gear; 2. Observe health and safety regulations; 3. Verify aircraft status reports; 4. Review all applicable airworthiness directives and service bulletins; 5. Execute all applicable airworthiness directives and service bulletin instructions; 6. Assign responsibilities and duties to maintenance personnel; 7. Develop maintenance plan for analyzing and isolating faults in aircraft flight control electrical systems according to the corresponding test reports and troubleshooting manuals; 8. Organize team members for maintenance work; 9. Perform operation and function inspections on the following items: <ol style="list-style-type: none"> a. Flight control/power control unit; b. Flap motor control system; c. Flap protection system; d. Trim motor control system; e. Stabilizer trim limiting switches; f. Stabilizer trim cut-off switches; g. Stabilizer trim override switches; h. Joystick stabilizer trim arm and direction switches; i. Flap skew and asymmetry system; j. Spoiler electrical system relays; k. Leading-edge device indicating system. 10. Perform analysis of system faults of the following: <ol style="list-style-type: none"> a. Aircraft flap/slat control system; b. Horizontal stabilizer control system; c. Spoiler control system; 11. According to tested states and system fault analysis results, isolate possible faults in: <ol style="list-style-type: none"> a. Motor; b. Actuator-clutch and brake; c. Limit switch; d. Microswitch; e. Proximity detector; f. Power control unit; g. Flap motor protection and control; 	<p>Detailed knowledge about:</p> <p>1.0 Methods</p> <p>The person performing this task must be able to explain how to:</p> <ol style="list-style-type: none"> 1.1 Analyse aircraft flight control electrical system test reports; 1.2 Determine possible fault causes of aircraft flight control electrical systems; 1.3 Troubleshoot aircraft flight control electrical systems. <p>2.0 Principles</p> <p>The person performing this task must be able to explain the following principles:</p> <ol style="list-style-type: none"> 2.1 Circuit control principles of aircraft flight control electrical systems; 2.2 Fault diagnosis principles of aircraft flight control electrical systems. <p>3.0 Theories</p> <p>The person performing this task must be able to explain the following:</p> <ol style="list-style-type: none"> 3.1 Recognition and testing methods for electronic components; 3.2 Methods of connecting and overhauling electrical circuits; 3.3 Recognition and testing methods for digital components; 3.4 Aircraft maintenance, test and troubleshooting methods; 3.5 Recognition and testing methods for components of aircraft flight control electrical systems; 3.6 Troubleshooting methods for aircraft flight control electrical systems. <p>4.0 Essential skills</p> <ol style="list-style-type: none"> 4.1 Computer skills; 4.2 Teamwork skills; 4.3 Problem-solving competence; 4.4 Communication skills; 4.5 Engineering technical report writing competence; 4.6 Standard circuit construction competence; 4.7 Effective work execution competence.
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<p>h. Trim motor;</p> <p>12. Perform final inspections and sign corresponding task cards;</p> <p>13. Submit task cards to the certification engineer for certification and aircraft delivery for use;</p> <p>14. Restore the aircraft to its normal state.</p> <p>15. Clean the workplace, tools and equipment;</p> <p>16. Store the tools and equipment.</p>	
<p>DESCRIPTION OF THE END PRODUCT / SERVICE</p>	<p>Faults in the flight control electrical systems of aircraft are analysed and isolated in accordance with approved technical specifications and procedures.</p>
<p>CIRCUMSTANTIAL KNOWLEDGE</p>	<p>Detailed knowledge about:</p> <ol style="list-style-type: none"> 1. Safety operation of equipment and tools; 2. Occupational health and safety; 3. AMMs.

OCCUPATION	AVIONICS MAINTENANCE ENGINEER	OCCUPATION CODE	
DUTY TITLE	CONDUCT ANALYSIS AND ISOLATION OF FAULTS IN AIRCRAFT ELECTRICAL CONTROL AND OPERATING SYSTEMS	DUTY NO.	705
TASK TITLE	IMPLEMENT ANALYSIS AND ISOLATION OF FAULTS IN ELECTRICAL CONTROL SYSTEMS FOR AIRCRAFT FUEL SYSTEMS	TASK NO.	7054
PERFORMANCE CRITERIA	The person performing this task must be able to analyse and isolate faults in electrical control systems for aircraft fuel systems in accordance with approved technical specifications and procedures.		
RANGE STATEMENT	<p>The task can be performed in an AMO's aircraft under the supervision of a certified aircraft maintenance engineer.</p> <p>The equipment and tools to be used include:</p> <p>Equipment and tools:</p> <ol style="list-style-type: none"> 1. Personal protective equipment; 2. Computers with accessories; 3. Electrician's complete Tool kit; 4. Hydraulic system test devices; 5. Multimeters; 6. Heat guns; 7. Anti-static wrist straps; 8. Soldering guns; 9. Crimping tools; 10. Pin pick-up and delivery tools; 11. Safety gear; 12. Work bench. <p>Materials:</p> <ol style="list-style-type: none"> 1. Fuses; 2. Strapping tapes; 3. Cleaners; 4. Pin cleaners; 5. Pin enhancers; 6. Splice tubes; 7. Wires; 8. Welding materials; 9. Sealants; 10. Heat shrinkable tubes. 		
EVIDENCE REQUIREMENT			
PRACTICAL PERFORMANCE		UNDERPINNING KNOWLEDGE	

<p>The person performing this task must be able to do the following:</p> <ol style="list-style-type: none"> 1. Select tools, equipment and safety gear; 2. Observe health and safety regulations; 3. Verify aircraft status reports; 4. Review all applicable airworthiness directives and service bulletins; 5. Execute all applicable airworthiness directives and service bulletin instructions; 6. Assign responsibilities and duties to maintenance personnel; 7. Develop maintenance plan for analyzing and isolating faults in electrical control systems for aircraft fuel systems according to the corresponding test reports and troubleshooting manuals; 8. Organize team members for maintenance work; 9. Perform operation and function inspections on the following items: <ol style="list-style-type: none"> a. Booster pump control and indicating system; b. Ejector system; c. Crossover, fuel supply and shut-off valves - normal and emergency; d. Fuel quantity indicating system. 10. Perform analysis of system faults of the following: <ol style="list-style-type: none"> a. Aircraft fuel supply system; b. Aircraft fuel indicating system; 11. According to tested states and system fault analysis results, isolate possible faults in: <ol style="list-style-type: none"> a. Booster pump control and protection system components; b. Ejector system components; c. Fuel heater; d. Crossover, fuel supply and shut-off valves - normal and emergency; e. Fuel quantity indicating components. 12. Perform final inspections and sign corresponding task cards; 	<p>Detailed knowledge about:</p> <p>1.0 Methods</p> <p>The person performing this task must be able to explain how to:</p> <ol style="list-style-type: none"> 1.1 Analyse the test reports of electrical control systems for aircraft fuel systems; 1.2 Determine possible fault causes of electrical control systems for aircraft fuel systems; 1.3 Troubleshoot electrical control systems for aircraft fuel systems. <p>2.0 Principles</p> <p>The person performing this task must be able to explain the following principles:</p> <ol style="list-style-type: none"> 2.1 Circuit control principles of electrical control systems for aircraft fuel systems; 2.2 Fault diagnosis principles of electrical control systems for aircraft fuel systems. <p>3.0 Theories</p> <p>The person performing this task must be able to explain the following:</p> <ol style="list-style-type: none"> 3.1 Recognition and testing methods for electronic components; 3.2 Methods of connecting and overhauling electrical circuits; 3.3 Recognition and testing methods for digital components; 3.4 Aircraft maintenance, test and troubleshooting methods; 3.5 Recognition and testing methods for components of electrical control systems for aircraft fuel systems; 3.6 Troubleshooting methods for electrical control systems for aircraft fuel systems. <p>4.0 Essential skills</p> <ol style="list-style-type: none"> 4.1 Data analysis competence; 4.2 Engineering technical report writing competence; 4.3 Computer skills; 4.4 Critical thinking; 4.5 Problem-solving competence; 4.6 Stress management; 4.7 Teamwork; 4.8 Communication skills.
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<p>13. Submit task cards to the certification engineer for certification and aircraft delivery for use;</p> <p>14. Restore the aircraft to its normal state;</p> <p>15. Clean tools, equipment and the workplace,</p> <p>14. Store tools equipment and; safety gear</p>	
<p>DESCRIPTION OF THE END PRODUCT / SERVICE</p>	<p>Faults in electrical control systems for aircraft fuel systems are analysed and isolated in accordance with approved technical specifications and procedures.</p>
<p>CIRCUMSTANTIAL KNOWLEDGE</p>	<p>Detailed knowledge about:</p> <ol style="list-style-type: none"> 1. Scope of duties; 2. Safety operation of equipment and tools; 3. Occupational health and safety; 4. AMMs.

OCCUPATION	AVIONICS MAINTENANCE ENGINEER	OCCUPATION CODE	
DUTY TITLE	CONDUCT ANALYSIS AND ISOLATION OF FAULTS IN AIRCRAFT ELECTRICAL CONTROL AND OPERATING SYSTEMS	DUTY NO.	705
TASK TITLE	CARRY OUT ANALYSIS AND ISOLATION OF FAULTS IN ELECTRICAL CONTROL SYSTEMS FOR AIRCRAFT HYDRAULIC SYSTEMS	TASK NO.	7055
PERFORMANCE CRITERIA	The person performing this task must be able to analyse and isolate faults in electrical control systems for aircraft hydraulic systems in accordance with approved technical specifications and procedures.		
RANGE STATEMENT	<p>The task can be performed in an AMO's aircraft under the supervision of a certified aircraft maintenance engineer.</p> <p>The equipment and tools to be used include:</p> <p>Equipment and tools:</p> <ol style="list-style-type: none"> 1. Personal protective equipment; 2. Computers with accessories; 3. Fitter's complete tool kit; 4. Hydraulic system test devices; 5. Multimeters; 6. Heat guns; 7. Anti-static wrist straps; 8. Soldering guns; 9. Crimping tools; 10. Pin pick-up and delivery tools; 11. Safety gear; 12. Work bench. <p>Materials:</p> <ol style="list-style-type: none"> 1. Fuses; 2. Strapping tapes; 3. Cleaners; 4. Pin cleaners; 5. Pin enhancers; 6. Splice tubes; 7. Wires; 8. Welding materials; 9. Sealants; 10. Heat shrinkable tubes. 		
EVIDENCE REQUIREMENT			

PRACTICAL PERFORMANCE	UNDERPINNING KNOWLEDGE
<p>The person performing this task must be able to do the following:</p> <ol style="list-style-type: none"> 1. Select tools, equipment and safety gear; 2. Observe health and safety regulations; 3. Verify aircraft status reports; 4. Review all applicable airworthiness directives and service bulletins; 5. Execute all applicable airworthiness directives and service bulletin instructions; 6. Assign responsibilities and duties to maintenance personnel; 7. Develop maintenance plan for analysing and isolating faults in electrical control systems for aircraft hydraulic systems according to the corresponding test reports and troubleshooting manuals; 8. Organise team members for maintenance work; 9. Perform inspections and tests on the following items: <ol style="list-style-type: none"> a. Hydraulic pump control and indicating system; b. Pressure warning system; c. Overheat warning system; d. Fuel supply/shut-off valve normal and emergency control; e. Oil detection; f. Hydraulic pump electrical plug connection; g. Pipeline clamps; h. Hydraulic pump and hydraulic pipeline oil leakage. 10. Perform system-level fault analysis of the following: <ol style="list-style-type: none"> a. Hydraulic source system; b. Hydraulic indicating system; c. Hydraulic oil leakage; d. Hydraulic oil detection. 11. According to tested states and system fault analysis results, isolate possible faults in: <ol style="list-style-type: none"> a. Hydraulic pump control and indicating system components; b. Pressure switch system components; 	<p>Detailed knowledge about:</p> <p>1.0 Methods The person performing this task must be able to explain how to:</p> <ol style="list-style-type: none"> 1.1 Analyse the test reports of electrical control systems for aircraft hydraulic systems; 1.2 Determine possible fault causes of electrical control systems for aircraft hydraulic systems; 1.3 Troubleshoot electrical control systems for aircraft hydraulic systems. <p>2.0 Principles The person performing this task must be able to explain the following principles:</p> <ol style="list-style-type: none"> 2.1 Circuit control principles of electrical control systems for aircraft hydraulic systems; 2.2 Fault diagnosis principles of electrical control systems for aircraft hydraulic systems. <p>3.0 Theories The person performing this task must be able to explain the following:</p> <ol style="list-style-type: none"> 3.1 Recognition and testing methods for electronic components; 3.2 Methods of connecting and overhauling electrical circuits; 3.3 Recognition and testing methods for digital components; 3.4 Aircraft maintenance, test and troubleshooting methods; 3.5 Recognition and testing methods for components of electrical control systems for aircraft hydraulic systems; 3.6 Troubleshooting methods for electrical control systems for aircraft hydraulic systems; 3.7 Methods of using basic tools and testing equipment. <p>4.0 Essential skills</p> <ol style="list-style-type: none"> 4.1 Computer skills; 4.2 Teamwork skills; 4.3 Problem-solving competence; 4.4 Communication skills; 4.5 Fault analysis and isolation competence; 4.6 Engineering technical report writing competence; 4.7 Effective work execution competence.

<ul style="list-style-type: none"> c. Overheat warning system components; d. Fuel supply/shut-off valves - normal and emergency; e. Oil filter components; f. Hydraulic system actuating component sealing rings. <p>12. Perform final inspections and sign corresponding task cards.</p> <p>13. Submit task cards to the certification engineer for certification and aircraft delivery for use;</p> <p>14. Restore the aircraft to its normal state.</p> <p>15. Clean tools, equipment and the workplace;</p> <p>16. Store tools, equipment and safety gear;</p>	
<p>DESCRIPTION OF THE END PRODUCT / SERVICE</p>	<p>Faults in electrical control systems for aircraft hydraulic systems are analysed and isolated in accordance with approved technical specifications and procedures.</p>
<p>CIRCUMSTANTIAL KNOWLEDGE</p>	<p>Detailed knowledge about:</p> <ul style="list-style-type: none"> 1. Safety operation of equipment and tools; 2. Occupational safety and health; 3. Safe disposal of materials.

OCCUPATION	AVIONICS MAINTENANCE ENGINEER	OCCUPATION CODE	
DUTY TITLE	CONDUCT ANALYSIS AND ISOLATION OF FAULTS IN AIRCRAFT ELECTRICAL CONTROL AND OPERATING SYSTEMS	DUTY NO.	705
TASK TITLE	PERFORM ANALYSIS AND ISOLATION OF FAULTS IN AIRCRAFT LANDING GEAR ELECTRICAL CONTROL SYSTEMS	TASK NO.	7056
PERFORMANCE CRITERIA	The person performing this task must be able to analyse and isolate faults in aircraft landing gear electrical control systems in accordance with approved technical specifications and procedures.		
RANGE STATEMENT	<p>The task can be performed in an AMO's aircraft under the supervision of aircraft release engineers.</p> <p>The equipment and tools to be used include:</p> <p>Equipment and tools:</p> <ol style="list-style-type: none"> 1. Personal protective equipment; 2. Computers with accessories; 3. Electrician's complete tool kit; 4. Go-no-go gauges; 5. Near/far test targets; 6. Anti-skid testers; 7. Anti-skid tester adapters; 8. Multimeters; 9. Heat guns; 10. Anti-static wrist straps; 11. Soldering guns; 12. Crimping tools; 13. Connector pick-up and delivery tools; 14. Safety gear; 15. Work bench. <p>Materials:</p> <ol style="list-style-type: none"> 1. Fuses; 2. Strapping tapes; 3. Cleaners; 4. Pin cleaners; 5. Pin enhancers; 6. Splice tubes; 7. Wires; 8. Welding materials; 9. Sealants; 		

10. Heat shrinkable tubes.

EVIDENCE REQUIREMENT

PRACTICAL PERFORMANCE	UNDERPINNING KNOWLEDGE
<p>The person performing this task must be able to do the following:</p> <ol style="list-style-type: none"> 1. Select tools, equipment and safety devices for the task; 2. Observe health and safety regulations; 3. Verify task cards and maintenance instructions; 4. Review all applicable airworthiness directives and service bulletins; 5. Execute all applicable airworthiness directives and service bulletin instructions; 6. Analyze and isolate faults in the following: <ol style="list-style-type: none"> a. Drive motor and selection and control system; b. Indicating system-proximity sensor and microswitch; c. Air/ground sensing system; d. Anti-skid system - operation, control and override; e. Automatic brake system - input, control and override; f. Landing gear retraction/extension mechanism. 7. Perform final inspections and sign task cards; 8. Submit task cards to the certification engineer for certification and aircraft delivery for use; 9. Restore the aircraft to its normal state; 10. Clean tools, equipment and the workplace; 11. Store tools equipment and safety gear. 	<p>Detailed knowledge about:</p> <p>1.0 Methods</p> <p>The person performing this task must be able to explain how to:</p> <ol style="list-style-type: none"> 1.1 Analyse the test reports of aircraft landing gear electrical control systems; 1.2 Determine possible fault causes of aircraft landing gear electrical control systems; 1.3 Troubleshoot aircraft landing gear electrical control systems. <p>2.0 Principles</p> <p>The person performing this task must be able to explain the following principles:</p> <ol style="list-style-type: none"> 2.1 Working principles of aircraft landing gear electrical control systems; 2.2 Principles of human factors' influence on aircraft maintenance; 2.3 Principles of using civil aviation regulations. <p>3.0 Theories</p> <p>The person performing this task must be able to explain the following:</p> <ol style="list-style-type: none"> 3.1 Methods of connecting and overhauling electrical circuits; 3.2 Recognition and testing methods for electronic components; 3.3 Basic types and applications of aircraft landing gear electrical control systems; 3.4 Working processes of aircraft landing gear electrical control systems; 3.5 Methods of using basic tools and testing equipment; 3.6 Methods of using AMMs; 3.7 Methods of using FIMs; 3.8 Methods of using wiring diagram manuals (WDMs); 3.9 Methods of using system schematic manuals (SSMs). <p>4.0 Essential skills</p> <ol style="list-style-type: none"> 4.1 Problem-solving competence; 4.2 Critical thinking;

	<p>4.3 Computer skills;</p> <p>4.4 Competence in working in defined environments;</p> <p>4.5 Teamwork;</p> <p>4.6 Communication skills;</p> <p>4.7 Team management.</p>
DESCRIPTION OF THE END PRODUCT / SERVICE	Faults in aircraft landing gear electrical control systems are analysed and isolated in accordance with approved technical specifications and procedures.
CIRCUMSTANTIAL KNOWLEDGE	<p>Detailed knowledge about:</p> <ol style="list-style-type: none"> 1. Safety operation of equipment and tools; 2. Occupational safety and health; 3. Safe disposal of materials.

OCCUPATION	AVIONICS MAINTENANCE ENGINEER	OCCUPATION CODE	
DUTY TITLE	CONDUCT ANALYSIS AND ISOLATION OF FAULTS IN AIRCRAFT ELECTRICAL CONTROL AND OPERATING SYSTEMS	DUTY NO.	705
TASK TITLE	CONDUCT ANALYSIS AND ISOLATION OF FAULTS IN AIRCRAFT ENGINE AND PROPELLER CONTROL SYSTEMS	TASK NO.	7057
PERFORMANCE CRITERIA	The person performing this task must be able to analyse and isolate faults in aircraft engine and propeller control systems in accordance with approved technical specifications and procedures.		
RANGE STATEMENT	<p>The task can be performed in an AMO's aircraft under the supervision of a certified person.</p> <p>The equipment and tools to be used include:</p> <p>Equipment and tools:</p> <ol style="list-style-type: none"> 1. Personal protective equipment; 2. Engine-related system testing instruments; 3. External power supplies; 4. Computers with accessories; 5. Multimeters; 6. Electrician's complete tool kit; 7. Heat guns; 8. Anti-static wrist straps; 9. Soldering guns; 10. Crimping tools; 11. Pin pick-up and delivery tools; 12. Safety gear; 13. Work bench. <p>Materials:</p> <ol style="list-style-type: none"> 1. Fuses; 2. Strapping tapes; 3. Cleaners; 4. Pin cleaners; 5. Pin enhancers; 6. Splice tubes; 7. Wires; 8. Welding materials; 9. Sealants; 10. Heat shrinkable tubes. 		
EVIDENCE REQUIREMENT			
PRACTICAL PERFORMANCE		UNDERPINNING KNOWLEDGE	

<p>The person performing this task must be able to do the following:</p> <ol style="list-style-type: none"> 1. Select tools, equipment and safety gear; 2. Observe health and safety regulations; 3. Review aircraft status reports; 4. Analyze faults according to the corresponding test reports and troubleshooting manuals; 5. Analyze and isolate faults according to the corresponding troubleshooting manuals; 6. Perform fault analysis of the following: <ol style="list-style-type: none"> a. Engine fuel control; b. Ignition control system; c. Engine air control; d. EEC system; e. Indicating and alarm system; f. Engine exhaust system; g. Engine lubrication system; h. Start control system; i. Propeller rotational speed indicating system; j. Propeller de-icing control system; k. Temperature and speed limit system; l. Propeller feathering control system. 7. Isolate possible faults in: <ol style="list-style-type: none"> a. Engine fuel control; b. Ignition control system; c. Engine air control; d. EEC system; e. Indicating and alarm system; f. Engine exhaust system; g. Engine lubrication system; h. Start control system; i. Propeller rotational speed indicating system; j. Propeller de-icing control system; k. Temperature and speed limit system; l. Propeller feathering control system. 8. Perform final inspections and sign corresponding task cards; 9. Submit task cards to the certification engineer for certification and aircraft delivery for use; 10. Restore the aircraft to its normal state; 	<p>Detailed knowledge about:</p> <p>1.0 Methods</p> <p>The person performing this task must be able to explain how to:</p> <ol style="list-style-type: none"> 1.1 Analyze the electrical fault test reports of engine and propeller systems; 1.2 Eliminate electrical faults in engine and propeller systems. <p>2.0 Principles</p> <p>The person performing this task must be able to explain the following principles:</p> <ol style="list-style-type: none"> 2.1 Main components and electrical working principles of engine and propeller electrical systems; 2.2 Fault diagnosis principles of electrical problems of engine and propeller systems; 2.3 Working principles of troubleshooting tools and testing equipment. <p>3.0 Theories</p> <p>The person performing this task must be able to explain the following:</p> <ol style="list-style-type: none"> 3.1 Analysis and isolation processes of electrical system faults in engines and propellers; 3.2 Methods of using basic tools and testing equipment; 3.3 Methods of using AMMs; 3.4 Methods of developing aircraft maintenance schemes; 3.5 Methods of using FIMs; 3.6 Methods of using component maintenance manuals; 3.7 Methods of connecting and overhauling electrical circuits; 3.8 Recognition and testing methods for electronic components. <p>4.0 Essential skills</p> <ol style="list-style-type: none"> 4.1 Fault analysis, prejudgment and prediction competence; 4.2 Engineering technical report writing competence; 4.3 Computer skills; 4.4 Critical thinking; 4.5 Problem-solving competence; 4.6 Stress management; 4.7 Teamwork;
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<p>11. Clean tools, equipment and the workplace, 12. Store tools equipment and safety gear.</p>	<p>4.8 Communication skills.</p>
<p>DESCRIPTION OF THE END PRODUCT / SERVICE</p>	<p>Faults in aircraft engine and propeller control systems are analysed and isolated in accordance with approved technical specifications and procedures.</p>
<p>CIRCUMSTANTIAL KNOWLEDGE</p>	<p>Detailed knowledge about:</p> <ol style="list-style-type: none"> 1. Safety operation of equipment and tools; 2. Occupational health and safety; 3. AMMs.

OCCUPATION	AVIONICS MAINTENANCE ENGINEER	OCCUPATION CODE	
DUTY TITLE	CONDUCT ANALYSIS AND ISOLATION OF FAULTS IN AIRCRAFT ELECTRICAL CONTROL AND OPERATING SYSTEMS	DUTY NO.	705
TASK TITLE	IMPLEMENT ANALYSIS AND ISOLATION OF FAULTS IN ELECTRICAL CONTROL SYSTEMS FOR AIRCRAFT AIR CONDITIONING SYSTEMS	TASK NO.	7058
PERFORMANCE CRITERIA	The person performing this task must be able to analyse and isolate faults in electrical control systems for aircraft air conditioning systems in accordance with approved technical specifications and procedures.		
RANGE STATEMENT	<p>The task can be performed in an AMO's aircraft under the supervision of aircraft release engineers.</p> <p>The equipment and tools to be used include:</p> <p>Equipment and tools:</p> <ol style="list-style-type: none"> 1. Personal protective equipment; 2. Air conditioning system-related testing instruments; 3. External power supplies; 4. Computers with accessories; 5. Multimeters; 6. Electrician's tool kit; 7. Heat guns; 8. Anti-static wrist straps; 9. Soldering guns; 10. Crimping tools; 11. Pin pick-up and delivery tools; 12. Safety gear; 13. Work bench. <p>Materials:</p> <ol style="list-style-type: none"> 1. Fuses; 2. Strapping tapes; 3. Cleaners; 4. Pin cleaners; 5. Pin enhancers; 6. Splice tubes; 7. Wires; 8. Welding materials; 9. Sealants; 10. Heat shrinkable tubes. 		
EVIDENCE REQUIREMENT			

PRACTICAL PERFORMANCE	UNDERPINNING KNOWLEDGE
<p>The person performing this task must be able to do the following:</p> <ol style="list-style-type: none"> 1. Select appropriate tools, equipment and safety devices for the task; 2. Pay attention to health and safety when performing the task; 3. View task cards and maintenance instructions; 4. Review all applicable airworthiness directives and service bulletins; 5. Execute all applicable airworthiness directives and service bulletin instructions; 6. Analyze and isolate faults in the following: <ol style="list-style-type: none"> a. Distribution system; b. Pressurization system; c. Heating system; d. Cooling system; e. Temperature control system. 7. Perform final inspections and sign task cards; 8. Submit task cards to the certification engineer for certification and aircraft delivery for use; 9. Restore the aircraft to its normal state; 10. Clean tools, equipment and the workplace; 11. Store, tools equipment and safety gear. 	<p>Detailed knowledge about:</p> <p>1.0 Methods</p> <p>The person performing this task must be able to explain how to:</p> <ol style="list-style-type: none"> 1.1 Analyze the test reports of electrical control systems for aircraft air conditioning systems; 1.2 Determine possible fault causes of electrical control systems for aircraft air conditioning systems; 1.3 Troubleshoot electrical control systems for aircraft air conditioning systems. <p>2.0 Principles</p> <p>The person performing this task must be able to explain the following principles:</p> <ol style="list-style-type: none"> 2.1 Working principles of aircraft air conditioning electrical systems; 2.2 Principles of human factors' influence on aircraft maintenance; 2.3 Principles of using civil aviation regulations. <p>3.0 Theories</p> <p>The person performing this task must be able to explain the following:</p> <ol style="list-style-type: none"> 3.1 Methods of connecting and overhauling electrical circuits; 3.2 Recognition and testing methods for electronic components; 3.3 Basic types and applications of aircraft air conditioning electrical systems; 3.4 Working processes of aircraft air conditioning electrical systems; 3.5 Methods of using basic tools and testing equipment; 3.6 Methods of using AMMs; 3.7 Methods of using FIMs; 3.8 Methods of using WDMs; 3.9 Methods of using SSMs. <p>4.0 Essential skills</p> <ol style="list-style-type: none"> 4.1 Problem-solving competence; 4.2 Critical thinking; 4.3 Computer skills; 4.4 Competence in working in defined environments;

	<p>4.5 Teamwork;</p> <p>4.6 Communication skills;</p> <p>4.7 Team management.</p>
DESCRIPTION OF THE END PRODUCT / SERVICE	<p>Faults in electrical control systems for aircraft air conditioning systems are analysed and isolated in accordance with approved technical specifications and procedures.</p>
CIRCUMSTANTIAL KNOWLEDGE	<p>Detailed knowledge about:</p> <ol style="list-style-type: none"> 1. Safety operation of equipment and tools; 2. Occupational safety and health; 3. Safe disposal of materials.

OCCUPATION	AVIONICS MAINTENANCE ENGINEER	OCCUPATION CODE	
DUTY TITLE	CONDUCT ANALYSIS AND ISOLATION OF FAULTS IN AIRCRAFT ELECTRICAL CONTROL AND OPERATING SYSTEMS	DUTY NO.	705
TASK TITLE	CARRY OUT ANALYSIS AND ISOLATION OF FAULTS IN ELECTRICAL CONTROL SYSTEMS FOR AIRCRAFT ICE AND RAIN PROTECTION SYSTEMS	TASK NO.	7059
PERFORMANCE CRITERIA	The person performing this task must be able to analyse and isolate faults in electrical control systems for aircraft ice and rain protection systems in accordance with approved technical specifications and procedures.		
RANGE STATEMENT	<p>The task can be performed in an AMO 's aircraft under the supervision of aircraft release engineers.</p> <p>The equipment and tools to be used include:</p> <p>Equipment and tools:</p> <ol style="list-style-type: none"> 1. Personal protective equipment; 2. Ice and rain protection system-related testing instruments; 3. External power supplies; 4. Computers with accessories; 5. Multimeters; 6. Electrician’s tool kit; 7. Heat guns; 8. Anti-static wrist straps; 9. Soldering guns; 10. Crimping tools; 11. Pin pick-up and delivery tools; 12. Safety gear; 13. Work bench. <p>Materials:</p> <ol style="list-style-type: none"> 1. Fuses; 2. Strapping tapes; 3. Cleaners; 4. Pin cleaners; 5. Pin enhancers; 6. Splice tubes; 7. Wires; 8. Welding materials; 9. Sealants; 10. Heat shrinkable tubes. 		

EVIDENCE REQUIREMENT

PRACTICAL PERFORMANCE	UNDERPINNING KNOWLEDGE
<p>The person performing this task must be able to do the following:</p> <ol style="list-style-type: none"> 1. Select tools, equipment and safety gear; 2. Observe health and safety regulations; 3. Verify task cards and maintenance instructions; 4. Review all applicable airworthiness directives and service bulletins; 5. Execute all applicable airworthiness directives and service bulletin instructions; 6. Analyze and isolate faults in the following: <ol style="list-style-type: none"> a. Wing thermal anti-icing system; b. Inlet cowl anti-icing system; c. Air data sensor anti-icing system; d. Windshield, side window and door anti-icing system; e. Water pipe anti-icing system. 7. Perform final inspections and sign task cards; 8. Submit task cards to the certification engineer for certification and aircraft delivery for use; 9. Restore the aircraft to its normal state. 10. Clean tools equipment and the workplace, 11. Store tools, equipment and safety gear. 	<p>Detailed knowledge about:</p> <p>1.0 Methods</p> <p>The person performing this task must be able to explain how to:</p> <ol style="list-style-type: none"> 1.1 Analyse the test reports of electrical control systems for aircraft ice and rain protection systems; 1.2 Determine possible fault causes of electrical control systems for aircraft ice and rain protection systems; 1.3 Troubleshoot electrical control systems for aircraft ice and rain protection systems. <p>2.0 Principles</p> <p>The person performing this task must be able to explain the following principles:</p> <ol style="list-style-type: none"> 2.1 Working principles of electrical control systems for aircraft ice and rain protection systems; 2.2 Principles of human factors' influence on aircraft maintenance; 2.3 Principles of using civil aviation regulations. <p>3.0 Theories</p> <p>The person performing this task must be able to explain the following:</p> <ol style="list-style-type: none"> 3.1 Methods of connecting and overhauling electrical circuits; 3.2 Recognition and testing methods for electronic components; 3.3 Basic types and applications of aircraft ice and rain protection electrical systems; 3.4 Working processes of aircraft ice and rain protection electrical systems; 3.5 Methods of using basic tools and testing equipment; 3.6 Methods of using AMMs; 3.7 Methods of using FIMs; 3.8 Methods of using WDMs; 3.9 Methods of using SSMs. <p>4.0 Essential skills</p> <ol style="list-style-type: none"> 4.1 Problem-solving competence; 4.2 Critical thinking;

	<p>4.3 Computer skills;</p> <p>4.4 Competence in working in defined environments;</p> <p>4.5 Teamwork;</p> <p>4.6 Communication skills;</p> <p>4.7 Team management.</p>
DESCRIPTION OF THE END PRODUCT / SERVICE	Faults in electrical control systems for aircraft ice and rain protection systems are analysed and isolated in accordance with approved technical specifications and procedures.
CIRCUMSTANTIAL KNOWLEDGE	<p>Detailed knowledge about:</p> <ol style="list-style-type: none"> 1. Safety operation of equipment and tools; 2. Occupational safety and health; 3. Safe disposal of materials.

OCCUPATION	AVIONICS MAINTENANCE ENGINEER	OCCUPATION CODE	
DUTY TITLE	CONDUCT ANALYSIS AND ISOLATION OF FAULTS IN AIRCRAFT ELECTRICAL CONTROL AND OPERATING SYSTEMS	DUTY NO.	705
TASK TITLE	PERFORM ANALYSIS AND ISOLATION OF FAULTS IN AIRCRAFT GALLERY/LAVATORY ELECTRICAL SYSTEMS	TASK NO.	70510
PERFORMANCE CRITERIA	The person performing this task must be able to analyse and isolate faults in aircraft gallery/lavatory electrical systems in accordance with approved technical specifications and procedures.		
RANGE STATEMENT	<p>The task can be performed in an AMO's aircraft under the supervision of aircraft release engineers. The equipment and tools to be used include:</p> <p>Equipment and tools:</p> <ol style="list-style-type: none"> 1. Personal protective equipment; 2. Electrical testing instruments; 3. External power supplies; 4. Computers with accessories; 5. Multimeters; 6. Electrician's tool kit; 7. Heat guns; 8. Anti-static wrist straps; 9. Soldering guns; 10. Crimping tools; 11. Pin pick-up and delivery tools; 12. Safety gear; 13. Work bench. <p>Materials:</p> <ol style="list-style-type: none"> 1. Fuses; 2. Strapping tapes; 3. Cleaners; 4. Pin cleaners; 5. Pin enhancers; 6. Splice tubes; 7. Wires; 8. Welding materials; 9. Sealants; 10. Heat shrinkable tubes. 		
EVIDENCE REQUIREMENT			

PRACTICAL PERFORMANCE	UNDERPINNING KNOWLEDGE
<p>The person performing this task must be able to do the following:</p> <ol style="list-style-type: none"> 1. Select tools, equipment and safety gear; 2. Observe health and safety regulations; 3. Verify task cards and maintenance instructions; 4. Review all applicable airworthiness directives and service bulletins; 5. Execute all applicable airworthiness directives and service bulletin instructions; 6. Analyze and isolate faults in the following: <ol style="list-style-type: none"> a. Lavatory system; b. Meal trolley/gallery system. 7. Perform final inspections and sign task cards; 8. Submit task cards to the certification engineer for certification and aircraft delivery for use; 9. Restore the aircraft to its normal state. 10. Clean tools, equipment and the workplace; 9. Store the tools equipment and safety gear; 	<p>Detailed knowledge about:</p> <p>1.0 Methods</p> <p>The person performing this task must be able to explain how to:</p> <ol style="list-style-type: none"> 1.1 Replace and inspect gallery/lavatory electrical system components; 1.2 Determine faults in aircraft gallery/lavatory electrical systems; 1.3 Troubleshoot aircraft gallery/lavatory electrical systems. <p>2.0 Principles</p> <p>The person performing this task must be able to explain the following principles:</p> <ol style="list-style-type: none"> 2.1 Working principles of aircraft gallery/lavatory electrical systems; 2.2 Principles of human factors' influence on aircraft maintenance; 2.3 Principles of using civil aviation regulations. <p>3.0 Theories</p> <p>The person performing this task must be able to explain the following:</p> <ol style="list-style-type: none"> 3.1 Methods of connecting and overhauling electrical circuits; 3.2 Recognition and testing methods for electronic components; 3.3 Basic types and applications of aircraft gallery/lavatory electrical systems; 3.4 Working processes of aircraft gallery/lavatory electrical systems; 3.5 Methods of using basic tools and testing equipment; 3.6 Methods of using AMMs; 3.7 Methods of using FIMs; 3.8 Methods of using WDMs; 3.9 Methods of using SSMs. <p>4.0 Essential skills</p> <ol style="list-style-type: none"> 4.1 Problem-solving competence; 4.2 Critical thinking; 4.3 Computer skills; 4.4 Competence in working in defined environments; 4.5 Teamwork;

	<p>4.6 Communication skills;</p> <p>4.7 Team management.</p>
DESCRIPTION OF THE END PRODUCT / SERVICE	<p>Faults in aircraft gallery/lavatory electrical systems are analysed and isolated in accordance with approved technical specifications and procedures.</p>
CIRCUMSTANTIAL KNOWLEDGE	<p>Detailed knowledge about:</p> <ol style="list-style-type: none"> 1. Safety operation of equipment and tools; 2. Occupational safety and health; 3. Safe disposal of materials.

OCCUPATION	AVIONICS MAINTENANCE ENGINEER	OCCUPATION CODE	
DUTY TITLE	CONDUCT ANALYSIS AND ISOLATION OF FAULTS IN AIRCRAFT ELECTRICAL CONTROL AND OPERATING SYSTEMS	DUTY NO.	705
TASK TITLE	IMPLEMENT ANALYSIS AND ISOLATION OF FAULTS IN AIRCRAFT AUXILIARY POWER UNITS (APUS)	TASK NO.	70511
PERFORMANCE CRITERIA	The person performing this task must be able to analyse and isolate aircraft auxiliary power units (APUs) in accordance with approved technical specifications and procedures.		
RANGE STATEMENT	<p>The task can be performed in an AMO's aircraft under the supervision of aircraft release engineers. The equipment and tools to be used include:</p> <p>Equipment and tools:</p> <ol style="list-style-type: none"> 1. Personal protective equipment; 2. APU-related testing instruments; 3. External power supplies; 4. Computers with accessories; 5. Multimeters; 6. Electronics technician's Tool kit; 7. Heat guns; 8. Anti-static wrist straps; 9. Soldering guns; 10. Crimping tools; 11. Pin pick-up and delivery tools; 12. Safety gear; 13. Work bench. <p>Materials:</p> <ol style="list-style-type: none"> 1. Fuses; 2. Strapping tapes; 3. Cleaners; 4. Pin cleaners; 5. Pin enhancers; 6. Splice tubes; 7. Wires; 8. Welding materials; 9. Sealants; 10. Heat shrinkable tubes. 		
EVIDENCE REQUIREMENT			
PRACTICAL PERFORMANCE		UNDERPINNING KNOWLEDGE	

<p>The person performing this task must be able to do the following:</p> <ol style="list-style-type: none"> 1. Select tools, equipment and safety gear; 2. Observe health and safety regulations; 3. Verify task cards and maintenance instructions; 4. Review all applicable airworthiness directives and service bulletins; 5. Execute all applicable airworthiness directives and service bulletin instructions; 6. Analyze and isolate faults in the following: <ol style="list-style-type: none"> a. Ignition/Start system; b. Air system; c. APU control; d. Indicating system; e. Lubrication system. 7. Perform final inspections and sign task cards; 8. Submit task cards to the certification engineer for certification and aircraft delivery for use; 9. Restore the aircraft to its normal state. 10. Clean tools, equipment and the workplace; 11. Store the tools equipment and safety gear; 	<p>Detailed knowledge about:</p> <p>1.0 Methods</p> <p>The person performing this task must be able to explain how to:</p> <ol style="list-style-type: none"> 1.1 Analyse aircraft APU test reports; 1.2 Determine possible fault causes of aircraft APUs; 1.3 Troubleshoot aircraft APUs. <p>2.0 Principles</p> <p>The person performing this task must be able to explain the following principles:</p> <ol style="list-style-type: none"> 2.1 Working principles of aircraft APUs; 2.2 Principles of human factors' influence on aircraft maintenance; 2.3 Principles of using civil aviation regulations. <p>3.0 Theories</p> <p>The person performing this task must be able to explain the following:</p> <ol style="list-style-type: none"> 3.1 Methods of connecting and overhauling electrical circuits; 3.2 Recognition and testing methods for electronic components; 3.3 Basic types and applications of aircraft APUs; 3.4 Working processes of aircraft APUs; 3.5 Methods of using basic tools and testing equipment; 3.6 Methods of using AMMs; 3.7 Methods of using FIMs; 3.8 Methods of using WDMs; 3.9 Methods of using SSMs. <p>4.0 Essential skills</p> <ol style="list-style-type: none"> 4.1 Problem-solving competence; 4.2 Critical thinking; 4.3 Computer skills; 4.4 Competence in working in defined environments; 4.5 Teamwork; 4.6 Communication skills; 4.7 Team management.
<p>DESCRIPTION OF THE END PRODUCT / SERVICE</p>	<p>Faults in APUs are analysed and isolated in accordance with approved technical specifications and procedures.</p>

CIRCUMSTANTIAL KNOWLEDGE	Detailed knowledge about: <ol style="list-style-type: none">1. Safety operation of equipment and tools;2. Occupational safety and health;3. Safe disposal of materials.
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TABLE 1: DACUM CHARTS FOR AVIONICS MAINTENANCE ENGINEER - NTA 7

DUTIES	TASKS	ENABLERS
<p>1.0 Perform analysis and isolation of faults in aircraft power generation, distribution and conversion systems</p>	1.1 Carry out aircraft power system maintenance management.	<p>General skills and knowledge</p> <ul style="list-style-type: none"> • Safety operation of equipment and tools • Occupational health and safety • Use of AMMs • Standard circuit construction competence • Effective work execution competence • Use of standard circuit construction manuals • Corresponding aircraft model knowledge • Aerophysics theoretical knowledge • Aviation mathematics theoretical knowledge • Basic electronic theoretical knowledge • Basic electrical theoretical knowledge • Digital technology theoretical knowledge • Aircraft maintenance practice theoretical knowledge • Aircraft maintenance schemes <p>Tools and equipment</p> <ul style="list-style-type: none"> • Personal protective equipment • Voltage-stabilized power supplies • Computers • Toolkit • Multimeters • Heat guns • Anti-static wrist straps • Welding guns • Crimping tools • Connector pick-up and delivery tools • Torque wrenches • Insulation test tools
	1.2 Implement testing of aircraft AC power systems.	
	1.3 Conduct analysis and isolation of faults in aircraft AC power systems.	
	1.4 Carry out testing of aircraft DC power systems.	
	1.5 Perform analysis and isolation of faults in aircraft DC power systems.	
	1.6 Implement testing of aircraft auxiliary and emergency power systems.	
	1.7 Conduct analysis and isolation of faults in aircraft auxiliary and emergency power systems.	
	1.8 Carry out testing of aircraft secondary power systems.	
	1.9 Perform analysis and isolation of faults in aircraft secondary power systems.	
	1.10 Implement testing of aircraft power transmission and distribution systems.	
	<p>1.11 Conduct analysis and isolation of faults in aircraft power transmission and distribution systems</p> <p>1.12 Carry out assembly of typical aircraft power system circuits.</p>	

DUTIES	TASKS	ENABLERS						
		<ul style="list-style-type: none"> • Lap resistance test tools <p>Materials</p> <ul style="list-style-type: none"> • Fuses • Strapping tapes • Cleaners • Contact cleaners • Contact enhancers • Electrical jointing • Conductors • Welding materials • Sealants • Heat shrinkable sleeves • Aerial pins or receptacles • Splice tubes • Lugs • Cotton gloves • Rubber gloves <p>Requirements for employees</p> <ul style="list-style-type: none"> • Teamwork consciousness • Report writing competence • Computer application competence • Hands-on competence • Communication skills • Safety responsibility consciousness • Stress management 						
2.0 Conduct analysis and isolation of faults in aircraft lighting systems	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td data-bbox="440 1440 975 1529">2.1 Carry out aircraft lighting system maintenance management.</td> </tr> <tr> <td data-bbox="440 1529 975 1619">2.2 Implement testing of aircraft interior lighting systems.</td> </tr> <tr> <td data-bbox="440 1619 975 1742">2.3 Perform analysis and isolation of faults in aircraft interior lighting systems.</td> </tr> <tr> <td data-bbox="440 1742 975 1832">2.4 Implement testing of aircraft exterior lighting systems.</td> </tr> <tr> <td data-bbox="440 1832 975 1955">2.5 Conduct analysis and isolation of faults in aircraft exterior lighting systems.</td> </tr> <tr> <td data-bbox="440 1955 975 2069">2.6 Carry out comprehensive detection and diagnosis of faults in aircraft lighting systems.</td> </tr> </table>	2.1 Carry out aircraft lighting system maintenance management.	2.2 Implement testing of aircraft interior lighting systems.	2.3 Perform analysis and isolation of faults in aircraft interior lighting systems.	2.4 Implement testing of aircraft exterior lighting systems.	2.5 Conduct analysis and isolation of faults in aircraft exterior lighting systems.	2.6 Carry out comprehensive detection and diagnosis of faults in aircraft lighting systems.	<p>General skills and knowledge</p> <ul style="list-style-type: none"> • Safety operation of equipment and tools • Occupational health and safety • Query of AMMs • Standard circuit construction competence • Standard mechanical construction competence • Effective work execution competence • Corresponding aircraft model knowledge
2.1 Carry out aircraft lighting system maintenance management.								
2.2 Implement testing of aircraft interior lighting systems.								
2.3 Perform analysis and isolation of faults in aircraft interior lighting systems.								
2.4 Implement testing of aircraft exterior lighting systems.								
2.5 Conduct analysis and isolation of faults in aircraft exterior lighting systems.								
2.6 Carry out comprehensive detection and diagnosis of faults in aircraft lighting systems.								

DUTIES	TASKS	ENABLERS
		<ul style="list-style-type: none"> • Use of maintenance documents Tools and equipment • Personal protective equipment • Computers • Toolkit • HAGNER evacuation route photometers • T-optical comparators • Multimeters • Heat guns • Anti-static wrist straps • Welding guns • Crimping tools • Connector pick-up and delivery tools • Instrument screwdrivers • Light blocking glasses • Aerial work safety belts Materials • Locking wires • Straps • Cleaners • Contact cleaners • Contact enhancers • Electrical jointing • Conductors • Welding materials • Sealants • Heat shrinkable sleeves • Aerial pins or receptacles • Splice tubes • Lugs • Cotton gloves • Rubber gloves Requirements for employees • Teamwork consciousness • Report writing competence • Computer application competence

DUTIES	TASKS	ENABLERS
		<ul style="list-style-type: none"> • Hands-on competence • Communication skills • Safety responsibility consciousness
3.0 Carry out analysis and isolation of faults in aircraft radio communication and navigation systems	3.1 Manage maintenance of aircraft radio communication and navigation systems.	General skills and knowledge <ul style="list-style-type: none"> • Aerophysics • Aviation mathematics • Electronic fundamentals • Electrical fundamentals • Digital technologies • Aircraft maintenance practice • Standard circuit construction • Use of tools and equipment • Human factors • Civil aviation regulations • Structures and principles of aircraft instrument systems • Use of AMMs • Aircraft maintenance schemes Tools and equipment <ul style="list-style-type: none"> • Personal protective equipment • Radio navigation test devices • Weld testers • Frequency counters • Voltage-stabilized power supplies • Oscilloscopes • Multimeters • Heat guns • Anti-static wrist straps • Welding guns • Crimping tools and connector pick-up and delivery tools Materials <ul style="list-style-type: none"> • Contact cleaners • Contact enhancers • Coaxial cables • Electrical jointing • Wires • Welding materials • Heat shrinkable sleeves
	3.2 Conduct testing of aircraft radio communication systems.	
	3.3 Implement analysis and isolation of faults in aircraft radio communication systems.	
	3.4 Perform testing of aircraft radio navigation systems.	
	3.5 Carry out analysis and isolation of faults in aircraft radio navigation systems.	
	3.6 Conduct testing of the aircraft air data inertial reference system (ADIRS).	
	3.7 Implement analysis and isolation of faults in the aircraft air data inertial reference system (ADIRS).	
	3.8 Perform design and analysis of aircraft radio communication and navigation system typical circuits.	

DUTIES	TASKS	ENABLERS
		<ul style="list-style-type: none"> • Cable accessories <p>Requirements for employees</p> <ul style="list-style-type: none"> • Data analysis competence • Engineering technical report writing competence • Fault analysis and isolation competence • Problem-solving competence • Stress management • Teamwork consciousness • Communication skills • Safety responsibility consciousness
4.0 Perform analysis and isolation of faults in aircraft instrument systems	4.1 Perform management of aircraft instrument system maintenance.	<p>General skills and knowledge</p> <ul style="list-style-type: none"> • Aerophysics • Aviation mathematics • Electronic fundamentals • Electrical fundamentals • Digital technologies • Aircraft maintenance practice • Standard circuit construction • Use of tools and equipment • Human factors • Civil aviation regulations • Structures and principles of aircraft instrument systems • Use of AMMs • Aircraft maintenance schemes <p>Tools and equipment</p> <ul style="list-style-type: none"> • Personal protective equipment • Digital turbine temperature testers • Pitot-static pressure test adapter kits • Target proximity sensor drives • Voltage-stabilized power supplies • Oscilloscopes • Multimeters • Heat guns
	4.2 Carry out testing of electronic display systems.	
	4.3 Implement analysis and isolation of faults in electronic display systems.	
	4.4 Conduct testing of engine instrument systems.	
	4.5 Perform analysis and isolation of faults in engine instrument systems.	
	4.6 Carry out testing of air data instrument systems.	
	4.7 Implement analysis and isolation of faults in air data instrument systems.	
	4.8 Conduct testing of gyro instrument systems.	
	4.9 Perform repair of aircraft gyro instrument systems.	
	4.10 Carry out testing of aircraft magnetic compass instrument systems.	
	4.11 Implement repair of aircraft magnetic compass instrument systems.	
	4.12 Conduct comprehensive testing and diagnosis of faults in aircraft instrument systems.	

DUTIES	TASKS	ENABLERS					
		<ul style="list-style-type: none"> • Anti-static wrist straps • Welding guns • Crimping tools and connector pick-up and delivery tools <p>Materials</p> <ul style="list-style-type: none"> • Contact cleaners • Contact enhancers • Coaxial cables • Electrical jointing • Wires • Welding materials • Heat shrinkable sleeves • Air filters <p>Requirements for employees</p> <ul style="list-style-type: none"> • Data analysis competence • Engineering technical report writing competence • Fault analysis and isolation competence • Problem-solving competence • Stress management • Teamwork consciousness • Communication skills • Safety responsibility consciousness 					
5.0 Conduct analysis and isolation of faults in aircraft electrical control and operating systems	<table border="1"> <tr> <td data-bbox="440 1341 975 1464">5.1 Carry out management of aircraft electrical control and operating systems maintenance.</td> </tr> <tr> <td data-bbox="440 1464 975 1626">5.2 Perform analysis and isolation of faults in electrical control systems for aircraft fire protection systems.</td> </tr> <tr> <td data-bbox="440 1626 975 1749">5.3 Conduct analysis and isolation of faults in aircraft flight control electrical systems.</td> </tr> <tr> <td data-bbox="440 1749 975 1872">5.4 Implement analysis and isolation of faults in electrical control systems for aircraft fuel systems.</td> </tr> <tr> <td data-bbox="440 1872 975 1995">5.5 Carry out analysis and isolation of faults in electrical control systems for aircraft hydraulic systems.</td> </tr> </table>	5.1 Carry out management of aircraft electrical control and operating systems maintenance.	5.2 Perform analysis and isolation of faults in electrical control systems for aircraft fire protection systems.	5.3 Conduct analysis and isolation of faults in aircraft flight control electrical systems.	5.4 Implement analysis and isolation of faults in electrical control systems for aircraft fuel systems.	5.5 Carry out analysis and isolation of faults in electrical control systems for aircraft hydraulic systems.	<p>General skills and knowledge</p> <ul style="list-style-type: none"> • Aerophysics • Aviation mathematics • Electronic fundamentals • Electrical fundamentals • Digital technologies • Maintenance practice • Human factors • Use of basic tools and testing equipment • Civil aviation regulations • Use of AMMs • Fault isolation manuals (FIMs)
5.1 Carry out management of aircraft electrical control and operating systems maintenance.							
5.2 Perform analysis and isolation of faults in electrical control systems for aircraft fire protection systems.							
5.3 Conduct analysis and isolation of faults in aircraft flight control electrical systems.							
5.4 Implement analysis and isolation of faults in electrical control systems for aircraft fuel systems.							
5.5 Carry out analysis and isolation of faults in electrical control systems for aircraft hydraulic systems.							

DUTIES	TASKS	ENABLERS
	5.6 Perform analysis and isolation of faults in aircraft landing gear electrical control systems.	<ul style="list-style-type: none"> • Wiring diagram manuals (WDMs) • System schematic manuals (SSMs)
	5.7 Conduct analysis and isolation of faults in aircraft engine and propeller control systems.	<p>Tools and equipment</p> <ul style="list-style-type: none"> • Personal protective equipment • Toolkit • Circuit testers
	5.8 Implement analysis and isolation of faults in electrical control systems for aircraft air conditioning systems.	<ul style="list-style-type: none"> • Aircraft fire test devices • Aircraft FCS test devices • Aircraft fuel system test devices
	5.9 Carry out analysis and isolation of faults in electrical control systems for aircraft ice and rain protection systems.	<ul style="list-style-type: none"> • Aircraft landing gear system test devices • Aircraft air conditioning system test devices • Aircraft ice and rain protection system test devices • Aircraft APU test devices • Aircraft engine and propeller system test devices • Multimeters • Heat guns • Anti-static wrist straps • Welding guns • Crimping tools • Pin pick-up and delivery tools
	5.10 Perform analysis and isolation of faults in aircraft gallery/lavatory electrical systems.	
	5.11 Implement analysis and isolation of faults in aircraft auxiliary power units (APUs).	<p>Materials</p> <ul style="list-style-type: none"> • Fuses • Strapping tapes • Cleaners • Pin cleaners • Pin enhancers • Splice tubes • Wires • Welding materials • Sealants • Heat shrinkable tubes <p>Requirements for employees</p> <ul style="list-style-type: none"> • Computer skills

DUTIES	TASKS	ENABLERS
		<ul style="list-style-type: none"> • Teamwork skills • Problem-solving competence • Communication skills • Fault analysis and isolation competence • Engineering technical report writing competence • Standard circuit construction competence • Effective work execution competence