

NATIONAL COUNCIL FOR TECHNICAL EDUCATION



JULY 2023

PROPOSED OCCUPATIONAL STANDARDS

**OCCUPATION: AIRCRAFT MAINTENANCE ENGINEERING TECHNICIAN
(AIRFRAME & POWER-PLANT)**

LEVEL: NTA 4

FOREWORD

The National Council for Technical Education (NACTE) is a corporate body established by the National Council for Technical Education Act, Cap.129. The Act provides a legal framework for the Council to coordinate the provision of technical education and training in Tanzania. The mandate of NACTE is three-fold, namely; Regulatory, Quality Assurance and Policy Advisory.

In discharging its mandate, the Council has been charged with the responsibilities, among others, to:

- (a) assist technical institutions in the transmission of knowledge, principles and training in the field of technical education and training for the benefit of the people of Tanzania;
- (b) assist technical institutions in the overall development of the quality of education they provide and to promote and to maintain approved academic standards;
- (c) establish and make awards in technical education which are consistent in standard and comparable to related awards in Tanzania and internationally; and
- (d) ensure that the quality of education required for the awards is met and maintained throughout the duration of the delivery of the course.

In the course of execution of these responsibilities, the Council has been instituting various measures aiming at advancing the quality of training provided in technical institutions in respect of the changing demands of the labour market, both local and international.

To achieve the above obligation, NACTE, under the Ministry of Education, Science and Technology implemented the East Africa Skills for Transformation and Regional Integration Project (EASTRIP), a project aiming at promoting regional integration through supporting the regional corridors and sector markets, developing common standards and qualifications, and promoting mobility of students, faculty, and graduates. The project supports the Government of Tanzania to address shortage of skills in five sectors namely:

- (a) Energy;
- (b) Construction;
- (c) Information and Communication Technology (ICT);
- (d) Transportation; and
- (e) Agri-business.

To address the skills, miss-match and shortage in the five (5) sectors in the country, the project funded, among others, a component of Development of Occupational Standards for Technical and Vocational Education and Training (TVET). In this regard, NACTE endeavoured to identify qualified and highly experienced experts in the five sectors from both the industry and training institutions to carry out the development of Occupational Standards. The exercise was carried out at Morogoro Teachers College – Morogoro from 27th August to 24th September, 2021. The output of the exercise is Occupational Standards for 14 occupations. Occupational standards for Aircraft Maintenance Engineering Technician are among the occupational standards which have been developed.

Since Occupational Standards are statements of work performance reflecting the ability to successfully complete the functions required in an occupation, as well as the application of knowledge, skills, attitudes and understanding in an occupation, it is the Council's expectations that the developed standards will form a robust base for decision making and provide explicit guidance to policy makers, curriculum developers, educators, employers and other stakeholders in matters related to manpower planning as well as execution of Technical and Vocational Education and Training undertakings.

Prof. J. W. Kondoro
CHAIRMAN

Dar es Salaam
SEPTEMBER, 2021

ACKNOWLEDGEMENT

The National Council for Technical Education (NACTE) is charged with the mandate to be the Quality Assurance organ of the Government in matters related to Technical and Vocational Education and Training (TVET) and production of qualified manpower for both local and international labour markets. In order to realize this obligation, NACTE endeavours to institute policies, guidelines and standards and to set the quality benchmarks for training institutions.

However, this is only possible if there is a strong base, linking the training institutions on one hand and the demands of the industry/labour market for relevant manpower on the other hand. Therefore, the Council undertook a step to develop Occupational Standards in sectors considered to be the engine to steer the country's desire to achieve an industrial economy. This exercise would not be a success without the input and support from our stakeholders. I am indebted to acknowledge some of them here.

I wish to acknowledge and appreciate the support from the Ministry of Education, Science and Technology through the East Africa Skills for Transformation and Regional Integration Project (EASTRIP) for the financial support which facilitated the preparation of this document. I wish also to appreciate Mrs Leah Lukindo and Eng. Dr Simon Baregu for the tireless efforts and commitment in facilitating and guiding the standards development process, Ms. Eileen Tzamburakis, Ms. Chausiku Yakweli Ibrahim and Ms. Nuru Shirima for compiling and type setting the final document; and the NACTE Secretariat for coordinating the whole activity.

In a very special way, I wish further to extend my sincere gratitude to this team of wonderful experts who tirelessly dedicated their time and availed their invaluable intellect in the preparation of this document. I would like to recognise the colossal inputs of the following experts:

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ABBREVIATIONS

AMM	Aircraft Maintenance Manual
AMO	Approved Maintenance Organization
AMP	Approved Maintenance Program
AOA	Angle Of Attack
APU	Auxiliary Power Unit
ELT	Emergency Locator Transmitter
FIM	Fault Isolation Manual
HP	High Pressure
LP	Low Pressure
MPM	Maintenance Procedure Manual
MPU	Magnetic Pick-up Unit
NACTE	National Council for Technical Education
NOS	National Occupational Standards
OS	Occupational Standards
OSG	Over-speed Governor
PBE	Protective Breathing Equipment
PCU	Pitch Control Unit
PEC	Propeller Electronic Control
PPE	Personal Protective Equipment
SRM	Structural Repair Manual
TCAA	Tanzania Civil Aviation Authority
TET	Technical Education and Training
TVET	Technical and Vocational Education and Training

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 program 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 analysis:	A process used to identify the tasks that are important to employees in any given occupation
Occupational area	This is a broad grouping of related jobs. Example: food service
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 performance tool of assessment of the pre – scribed outcomes.
Occupational/job analysis:	A process used to identify the tasks that are important to employees in any given occupation.
Performance criteria:	Indicate the expected end results or outcome in form of

evaluative statements.

Skill: 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.

Standard: it is 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, related knowledge, attitudes, performance standards, tools and materials needed, and safety concerns required of employees performing it.

Task: A work activity that has a definite beginning and ending, is observable or measurable, consists of two or more definite steps, and leads to a product, service, or decision.

Underpinning Knowledge: This is crucial knowledge that an individual must acquire in order to demonstrate competences that are associated in performing a given task.

Verification: The process of having experts review and conform 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.

Occupational Competence The application of knowledge and skills to perform consistently to the standards required in the work context.

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. 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 Education has begun the job of drafting Occupational Standards that will eventually be adopted as National Occupational Standards for TET in order to ensure that it meets the needs of the labour market and the country's economic agenda.

National Occupational Standards (NOS) are performance criteria that are matched with labour market demands. Each National Occupation Standard describes functions, performance standards, and knowledge/understanding for one important function or task. They combine skills, knowledge, and attitudes to describe best practice. They are useful tools for establishing job roles, personnel recruiting, supervision, and appraisal, as well as TET standards. They're also helpful for benchmarking and harmonizing 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 delivery across all public and private institutions.

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

In TET delivery, Tanzania adopted the Competence Based Education (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) programs. TET institutions will be required to benchmark their curricula with relevant occupational standards.

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 (TET).

The Aircraft Maintenance Engineer Occupation has its own set of occupational standards. 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.

1.0. OCCUPATIONAL STANDARD DEVELOPMENT PROCESS

The Occupational standards development process began with an examination of major documents that guide Tanzanian skill development. The 10-year National Skills Development Strategy (2016-2026) was one of the documents reviewed, and it outlined six (6) economic sectors that should be prioritized when developing skills development programmes. These sectors include: Transport and logistics, Tourism and Hospitality, Agribusiness, Construction, Energy and ICT. NACTE 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 workshop comprised of expert workers and educators with substantial knowledge and experience in the occupation conducted an occupational analysis utilizing the DACUM approach to produce the occupational profile. The analysis resulted in DACUM Charts, which are attached as **Appendix 1** to this document.

The workshop thereafter continued with the development of occupational standards. Experts in Occupational Analysis and Occupational Standards Development facilitated the workshop. Interviews, online surveys, and a stakeholder forum were used to validate the occupational standards. Engineers, supervisory technicians on the job, and experienced Aircraft Maintenance technicians were key informants in the survey to discover occupational trends. This information was used to gain insight from the workplaces regarding trends and changes in the profession, including how well graduates are prepared for working in the occupation. A total of online surveys were completed by experts from the labour market across the country. Apart from the survey aiding in defining the scope for the occupational analysis, they served to engage a wide cross-section of experts in the occupation. The stakeholders' forum was attended by participants from different parts of the country representing various companies.

2.0. THE SCOPE AND OVERVIEW OF THE OCCUPATION STANDARDS FOR AIRCRAFT MAINTENANCE ENGINEERING TECHNICIAN

These standards cover a broad range of duties and tasks that can be performed by Aircraft Maintenance Engineering Technician. However, the occupational standards are not meant to replace individual job descriptions, they are to be used for guidance in defining skill levels and knowledge for the technician in specific settings or positions. The Aircraft Maintenance Engineering Technician may perform tasks in a number of key areas of the occupational standards, but not necessarily in all areas. For example, in large Approved Maintenance Organizations (AMO) other individuals may be employed or designated to perform specific tasks.

The Aircraft Maintenance Engineering Technician works in the Approved Maintenance Organization (AMO) to maintain, repair and service different aircrafts operating in the air transport industry. Air transport includes cargo-carrying and passenger-carrying aircraft, these aircrafts are called commercial aircrafts. Commercial aircraft move goods and people from one part of the world to the other through air, operated by a cadre of trained and qualified staff. There are many types of aircrafts and of various sizes, models, and different operating specifications. Aircraft Maintenance Engineering Technicians play an important role in ensuring compliance with airworthiness requirements of an aircraft in accordance with Tanzania Civil Aviation Authority (TCAA) Regulations. Aircraft Maintenance Engineering Technician covers the following duties under supervision of certifying Aircraft Maintenance Engineer:

- a) Perform routine cleaning of aircraft components and equipment, routine component replacement and maintenance of aircraft systems;
- b) Clean aircraft airframe structure, perform routine general visual inspection of aircraft airframe structure and maintenance of aircraft airframe structure;
- c) Clean auxiliary power unit and accessories, perform routine component replacement and maintenance of Aircraft Auxiliary Power Unit (APU);
- d) Clean piston engine and accessories, perform routine component replacement and maintenance of aircraft piston engine;
- e) Clean gas turbine engine and accessories, perform routine component replacement and maintenance aircraft gas turbine engine;

- f) Clean aircraft propeller and accessories, perform routine component replacement and maintenance of aircraft propellers;
- g) Verify aircraft airworthiness compliance with Tanzania Civil Aviation Regulations; and
- h) Perform aircraft ground handling operations.

The Occupational standards have been clustered into NTA qualification levels i.e. NTA level 4, 5 and 6

3.0. VALIDITY PERIOD

The occupational standards will be valid for 3-5 years due to the fast-changing nature of technology. The review will proceed in the same manner as the previous one, with new occupational standards being developed based on current labour market Information.

4.0. OCCUPATIONAL STANDARDS

OCCUPATION	AIRCRAFT MAINTENANCE ENGINEERING TECHNICIAN (AIRFRAME & POWERPLANT)	OCCUPATION CODE	3143
DUTY TITLE	PERFORM ROUTINE CLEANING OF AIRCRAFT COMPONENTS AND EQUIPMENT ON AIRCRAFT SYSTEMS	DUTY NO.	401
TASK TITLE	CLEAN COMPONENTS ON AIR CONDITIONING SYSTEM	TASK NO.	4011
Performance criteria	The person performing this task must be able to clean components on aircraft’s air conditioning system as updated procedures for Tanzania Civil Aviation Authority TCAA and AMM manual approval.		
Range statement	The task will be performed in a hangar or ramp area under the supervision of a certifying Aircraft Maintenance Engineer or senior technical staff. The following equipment, tools and materials will be needed in performing the task: P.P.E including gloves , masks or others, Brush, Non-abrasive cloth, Approved cleaning Materials and Water , Pneumatic tools (e.g. air guns or pneumatic brushes) and hand tools (e.g. wrenches, screwdrivers, pliers) , Vacuum cleaners, steam cleaners, pipe cleaning tools such as pipe brushes, high pressure air guns.		
EVIDENCE REQUIREMENTS			
PRACTICAL PERFORMANCE		UNDERPINNING KNOWLEDGE	
The person performing this task must be able to do the following: 1. Identify components to be cleaned 2. Select right tools, equipment and safety gears for the task 3. Observe health and safety when		Detailed knowledge about: 1.0. Methods The person performing this task must be able to explain how to : 1.1 Replacement of filters 1.2 Clean condenser and evaporator	

performing the task 4. Observe AMM instructions and limitations 5. Clean dust and moisture on: a) Heat exchanger b) Pressure sensor c) Temperature sensor d) Air conditioning ducts e) Recirculation air filter f) Air conditioning valves filters 6. Return aircraft to normal configuration 7. Clean work area, tools and equipment 8. Store tools, equipment and safety gear appropriately 9. Submit aircraft cleaning checklist to be signed by certifying Aircraft Maintenance Engineer	1.3 Clean air ducts 1.4 Deal with bacteria and mold 2.0. Principles The person performing this task must be able to explain the following principles: 2.1 Principles of the Refrigeration Cycle in Aircraft Air Conditioning Systems 2.2 Principles of Filtration in Aircraft Air Conditioning Systems 2.3 TCCA Regulations and AMM Directives and Restrictions 3.0. Theories The person performing the task must be able to explain: 3.1 Refrigeration and heat transfer 3.2 Filtration Technology 3.3 Aviation safety regulations 4.0. Essential skills 4.1. Communication skills 4.2. Time management skills 4.3. Commitment 4.4. Problem solving skills 4.5. Ability to work under pressure 4.6. Interpersonal skills
Description of the end products/ service	Cleaning of aircraft's air conditioning system components is performed as updated procedures for Tanzania Civil Aviation Authority TCAA and AMM manual approval.
Circumstantial knowledge	Detailed knowledge about: 1. properties, uses and applications of cleaning materials 2. the structure and function of evaporator and condenser 3. types of filters, periodic replacement cycles and cleaning methods 4. the location, function and operation of the control panel and various sensors 5. occupational safety and health

OCCUPATION	AIRCRAFT MAINTENANCE ENGINEERING TECHNICIAN (AIRFRAME & POWERPLANT)	OCCUPATION CODE	3143
DUTY TITLE	PERFORM ROUTINE CLEANING OF AIRCRAFT COMPONENTS AND EQUIPMENT ON AIRCRAFT SYSTEMS	DUTY NO.	401
TASK TITLE	CLEAN COMPONENTS ON FLIGHT CONTROL SYSTEM	TASK NO.	4012
Performance criteria	The person performing this task must be able to clean components on aircraft's flight control system as updated procedures for Tanzania Civil Aviation Authority TCAA and AMM manual approval.		
Range statement	The task will be performed in a hangar or ramp area under the supervision of a certifying Aircraft Maintenance Engineer. The following equipment, tools and materials will be needed in performing the task: P.P.E including gloves , masks or others, Brush, Non-abrasive cloth, Approved cleaning Materials and Water , Pneumatic tools (e.g. air guns or pneumatic brushes) and hand tools		

	(e.g. wrenches, screwdrivers, pliers) , Vacuum cleaners, spray guns and static eliminators.
EVIDENCE REQUIREMENTS	
PRACTICAL PERFORMANCE	UNDERPINNING KNOWLEDGE
The person performing this task must be able to do the following: 1. Identify components to be cleaned 2. Select right tools, equipment and safety gears for the task 3. Observe health and safety when performing the task 4. Observe AMM instructions and limitations 5. Clean dust and stains on: a) Elevator b) Rudder c) Aileron 6. Return aircraft to normal configuration 7. Clean work area, tools and equipment 8. Store tools, equipment and safety gear appropriately 9. Submit aircraft cleaning checklist to be signed by certifying Aircraft Maintenance Engineer	Detailed knowledge about: 1.0. Methods The person performing this task must be able to explain how to: 1.1 Clean surfaces 1.2 Inspect and remove dust 1.3 Protect electronic components 2.0. Principles The person performing this task must be able to explain the following principles: 2.1 Working Principles of Aircraft Flight Control Systems 2.2 TCCA Regulations and AMM Directives and Limitations 3.0. Theories The person performing this task must be able to explain: 3.1 Structure and Composition of Flight Control Systems 3.2 Flight control system surface treatment and coating technologies 3.3 Cleaning materials, tools and equipment for flight control systems and their components 3.4 Troubleshooting Methods for Flight Control Systems 4.0. Essential skills 4.1. Communication skills 4.2. Time management skills 4.3. Commitment 4.4. Problem solving skills 4.5. Ability to work under pressure 4.6. Interpersonal skills
Description of the end products/ service	Cleaning of aircraft's flight control system components is performed as updated procedures for Tanzania Civil Aviation Authority TCAA and AMM manual approval.
Circumstantial knowledge	Detailed knowledge about: 1. properties, uses and applications of cleaning materials

	2. Inspection and testing 3. cleaning procedures and steps 4. maintenance manuals and technical specifications 5. safe operation and environmental protection
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OCCUPATION	AIRCRAFT MAINTENANCE ENGINEERING TECHNICIAN (AIRFRAME & POWERPLANT)	OCCUPATION CODE	3143
DUTY TITLE	PERFORM ROUTINE CLEANING OF AIRCRAFT COMPONENTS	DUTY NO.	401

	AND EQUIPMENT ON AIRCRAFT SYSTEMS		
TASK TITLE	CLEAN COMPONENTS ON HYDRAULIC SYSTEM	TASK NO.	4013
Performance criteria	The person performing this task must be able to clean components on aircraft’s hydraulic system as updated procedures for Tanzania Civil Aviation Authority TCAA and AMM manual approval.		
Range statement	The task will be performed in a hangar or ramp area under the supervision of a certifying Aircraft Maintenance Engineer. The following equipment, tools and materials will be needed in performing the task: P.P.E including gloves , masks or others , Brush, Non-abrasive cloth, Approved cleaning Materials and Water , hand tools (e.g. wrenches, screwdrivers, pliers) , Vacuum cleaners, air guns, hydraulic system test equipment (including pressure gauges, flow meters, leak detectors, etc.), hydraulic system operator's manuals.		
EVIDENCE REQUIREMENTS			
PRACTICAL PERFORMANCE		UNDERPINNING KNOWLEDGE	
The person performing this task must be able to do the following: 1. Identify components to be cleaned 2. Select right tools, equipment and safety gears for the task 3. Observe health and safety when performing the task 4. Observe AMM instructions and limitations 5. Clean dust, moisture and oil stains on: a) Hydraulic pipes b) Hydraulic actuators c) Hydraulic pumps d) Hydraulic bays 6. Return aircraft to normal configuration 7. Clean work area, tools and equipment 8. Store tools, equipment and safety gear appropriately 9. Submit aircraft cleaning checklist to be signed by certifying Aircraft Maintenance Engineer		Detailed knowledge about: 1.0. Methods The person performing this task must be able to explain how to: 1.1 Clean the hydraulic system 1.2 Replace hydraulic filters 1.3 Check seals 1.4 Maintain and replace valves 2.0.Principles The person performing this task must be able to explain the following principles : 2.1 Working principle of aircraft hydraulic system 2.2 Principles of Cleaning Aircraft Hydraulic Systems 2.3 TCCA Regulations and AMM Directives and Restrictions 3.0.Theories The person performing this task must be able to explain: 3.1 Principles of Aircraft Hydraulic System Operation 3.2 Aircraft hydraulic system components and assemblies 3.3 Cleaning Materials, Tools, and Equipment for Aircraft Hydraulic Systems 3.4 Aircraft Hydraulic System Material Compatibility and Environmental Requirements	

	4.0. Essential skills 4.1.Communication skills 4.2.Time management skills 4.3.Commitment 4.4.Problem solving skills 4.5.Ability to work under pressure 4.6.Interpersonal skills
Description of the end products/ service	Cleaning of aircraft's hydraulic system components is performed as updated procedures for Tanzania Civil Aviation Authority TCAA and AMM manual approval.
Circumstantial knowledge	Detailed knowledge about: 1. properties, uses and application of cleaning materials 2. Preparation of aircraft hydraulic system components for cleaning 3. cleaning procedures for aircraft hydraulic system components 4. types, properties and specifications of hydraulic fluids 5. common hydraulic system failure phenomenon, causes and troubleshooting methods

OCCUPATION	AIRCRAFT MAINTENANCE ENGINEERING TECHNICIAN (AIRFRAME & POWERPLANT)	OCCUPATION CODE	3143
DUTY TITLE	PERFORM ROUTINE CLEANING OF AIRCRAFT COMPONENTS AND EQUIPMENT ON AIRCRAFT SYSTEMS	DUTY NO.	401
TASK TITLE	CLEAN COMPONENTS ON OXYGEN SYSTEM	TASK NO.	4014
Performance criteria	The person performing this task must be able to clean components on aircraft’s oxygen system as updated procedures for Tanzania Civil Aviation Authority TCAA and AMM manual approval.		
Range statement	The task will be performed in a hangar or ramp area under the supervision of a certifying Aircraft Maintenance Engineer. The following equipment, tools and materials will be needed in performing the task: P.P.E including gloves , masks or others , Brush, Non-abrasive cloth, Approved cleaning Materials and Water , Sponges, oxygen system cleaning tools (e.g., cleaning guns) , Air compressors or cylinders, pneumatic tools (e.g., air guns or pneumatic brushes), hand tools (e.g., wrenches, screwdrivers, pliers), inspection tools (e.g., pressure gauges and leak detectors).		
EVIDENCE REQUIREMENTS			
PRACTICAL PERFORMANCE		UNDERPINNING KNOWLEDGE	
The person performing this task must be able to do the following: 1. Identify components to be cleaned 2. Select right tools, equipment and safety gears for the task 3. Observe health and safety when performing the task		Detailed knowledge about: 1.0. Methods The person performing this task must be able to explain how to: 1.1 Disassembling and assembling oxygen system components 1.2 Relieve oxygen system pressure	

4. Observe AMM instructions and limitations 5. Clean dust and stains on: a) Oxygen masks b) Smoke goggles 6. Return aircraft to normal configuration 7. Clean work area, tools and equipment 8. Store tools, equipment and safety gear appropriately 9. Submit aircraft cleaning checklist to be signed by certifying Aircraft Maintenance Engineer	1.3 Clean oxygen system components including supply lines 2.0. Principles The person performing this task must be able to explain the following principles: 2.1 Working Principle of Aircraft Oxygen System 2.2 Principles of Cleaning Aircraft Oxygen Systems 2.3 TCCA Regulations and AMM Directives and Restrictions 3.0. Theories The person performing this task must be able to explain: 3.1 Working Principle of Aircraft Oxygen System 3.2 Components of Aircraft Oxygen System 3.3 Types, Properties and Uses of Oxygen System Cleaners 4.0. Essential skills 4.1. Communication skills 4.2. Time management skills 4.3. Commitment 4.4. Problem solving skills 4.5. Ability to work under pressure 4.6. Interpersonal skills
Description of the end products/ service	Cleaning of aircraft's oxygen system components is performed as updated procedures for Tanzania Civil Aviation Authority TCAA and AMM manual approval.
Circumstantial knowledge	Detailed knowledge about: 1. types, properties and use of cleaning materials; 2. preparation of aircraft oxygen system components for cleaning 3. cleaning procedures for aircraft oxygen system components 4. safety operation procedures and precautions 5. maintenance and repair methods for aircraft oxygen system components

OCCUPATION	AIRCRAFT MAINTENANCE ENGINEERING TECHNICIAN (AIRFRAME & POWERPLANT)	OCCUPATION CODE	3143
DUTY TITLE	PERFORM ROUTINE CLEANING OF AIRCRAFT COMPONENTS AND EQUIPMENT ON AIRCRAFT SYSTEMS	DUTY NO.	401
TASK TITLE	CLEAN COMPONENTS ON ICE AND RAIN PROTECTION SYSTEM	TASK NO.	4015
Performance criteria	The person performing this task must be able to clean components on aircraft's ice and rain protection system as updated procedures for		

	Tanzania Civil Aviation Authority TCAA and AMM manual approval.
Range statement	The task will be performed in a hangar or ramp area under the supervision of a certifying Aircraft Maintenance Engineer. The following equipment, tools and materials will be needed in performing the task: P.P.E including gloves , masks or others , Brush, Non-abrasive cloth, Approved cleaning Materials and Water , hand tools (e.g. wrenches, screwdrivers, pliers) , Microscope or magnifying glass, vacuum cleaner, high-pressure spray/water gun.
EVIDENCE REQUIREMENTS	
PRACTICAL PERFORMANCE	UNDERPINNING KNOWLEDGE
The person performing this task must be able to do the following: 1. Identify components to be cleaned 2. Select right tools, equipment and safety gears for the task 3. Observe health and safety when performing the task 4. Observe AMM instructions and limitations 5. Clean clogged pitot-static probes drain holes 6. Return aircraft to normal configuration 7. Clean work area, tools and equipment 8. Store tools, equipment and safety gear appropriately 9. Submit aircraft cleaning checklist to be signed by certifying Aircraft Maintenance Engineer	Detailed knowledge about: 1.0. Methods The person performing this task must be able to explain how to: 1.1 Regular maintenance 1.2 Removing and installing lines 1.3 Flushing of lines 2.0. Principles The person performing this task must be able to explain the following principles: 2.1 Working Principle of Aircraft Ice and Rain Protection Systems 2.2 Essentials of cleaning aircraft anti-icing and rain protection systems 2.3 TCCA Regulations and AMM Directives and Restrictions 3.0. Theories: The person performing this task must be able to explain: 3.1 Principle and working mechanism of the system 3.2 Frequently asked questions and malfunctions 3.3 Types, properties and use of cleaning materials 4.0. Essential skills 4.1. Communication skills 4.2. Time management skills 4.3. Commitment 4.4. Problem solving skills 4.5. Ability to work under pressure 4.6. Interpersonal skills
Description of the end products/ service	Cleaning of aircraft's ice and rain protection system components is performed as updated procedures for

	Tanzania Civil Aviation Authority TCAA and AMM manual approval.
Circumstantial knowledge	Detailed knowledge about: 1. types, properties and use of cleaning materials 2. the preparation of aircraft anti-ice and anti-rain system components for cleaning 3. the purpose, methods and precautions for cleaning of aircraft anti-ice and rain protection systems 4. disassembly, installation and commissioning of aircraft anti-icing and rain protection system components 5. Occupational safety and health

OCCUPATION	AIRCRAFT MAINTENANCE ENGINEERING TECHNICIAN (AIRFRAME & POWERPLANT)	OCCUPATION CODE	3143
DUTY TITLE	PERFORM ROUTINE CLEANING OF AIRCRAFT COMPONENTS AND EQUIPMENT ON AIRCRAFT SYSTEMS	DUTY NO.	401
TASK TITLE	CLEAN COMPONENTS ON LANDING GEAR SYSTEM	TASK NO.	4016
Performance criteria	The person performing this task must be able to clean components on aircraft’s landing gear system as updated procedures for Tanzania Civil Aviation Authority TCAA and AMM manual approval.		
Range statement	The task will be performed in a hangar or ramp area under the supervision of a certifying Aircraft Maintenance Engineer. The following equipment, tools and materials will be needed in performing the task: P.P.E including gloves , masks or others , Brush, Non-abrasive cloth, Approved cleaning Materials and Water , hand tools (e.g. wrenches, screwdrivers, pliers) , High-pressure spray gun/water gun, stabilizing support tools.		
EVIDENCE REQUIREMENTS			
PRACTICAL PERFORMANCE		UNDERPINNING KNOWLEDGE	
The person performing this task must be able to do the following: 1. Identify components to be cleaned 2. Select right tools, equipment and safety gears for the task 3. Observe health and safety when performing the task 4. Observe AMM instructions and limitations 5. Clean dust and oil strains on: a) Nose landing gear assemblies b) Main landing gear assemblies 6. Return aircraft to normal configuration 7. Clean work area, tools and equipment 8. Store tools, equipment and safety gear appropriately 9. Submit aircraft cleaning checklist to be signed by certifying Aircraft		Detailed knowledge about: 1.0. Methods The person performing this task must be able to explain how to: 1.1 Scrape cleaning 1.2 Air blowing 1.3 Water spray cleaning 2.0. Principles The person performing this task must be able to explain the following principles: 2.1 Working Principle of Aircraft Landing Gear Parts 2.2 Essentials of Cleaning Aircraft Landing Gear Components 2.3 TCCA Regulations and AMM Directives and Restrictions 3.0. Theories The person performing this task must be able to explain: 3.1 Landing gear structure and composition	

Maintenance Engineer	3.2 Landing gear materials and coatings 3.3 Types of Dirt and Oil 4.0. Essential skills 4.1. Communication skills 4.2. Time management skills 4.3. Commitment 4.4. Problem solving skills 4.5. Ability to work under pressure 4.6. Interpersonal skills
Description of the end products/ service	Cleaning of aircraft's landing gear system components is performed as updated procedures for Tanzania Civil Aviation Authority TCAA and AMM manual approval.
Circumstantial knowledge	Detailed knowledge about: 1. type and suitability of cleaning materials 2. maintenance records and inspections 3. cleaning procedures 4. airline regulations and guidelines 5. safety precautions

OCCUPATION	AIRCRAFT MAINTENANCE ENGINEERING TECHNICIAN (AIRFRAME & POWERPLANT)	OCCUPATION CODE	3143
DUTY TITLE	PERFORM ROUTINE CLEANING OF AIRCRAFT COMPONENTS AND EQUIPMENT ON AIRCRAFT SYSTEMS	DUTY NO.	401
TASK TITLE	CLEAN COMPONENTS ON WATER AND WASTE SYSTEM	TASK NO.	4017
Performance criteria	The person performing this task must be able to clean components on aircraft’s water and waste system as updated procedures for Tanzania Civil Aviation Authority TCAA and AMM manual approval.		
Range statement	The task will be performed in a hangar or ramp area under the supervision of a certifying Aircraft Maintenance Engineer. The following equipment, tools and materials will be needed in performing the task: P.P.E including gloves , masks or others , Brush, Non-abrasive cloth, Approved cleaning Materials and Water , Broom, dustpan, wet mop, rags and wiping tools, toilet brush , Disinfectants, air fresheners, garbage bags and trash cans , dust catcher.		
EVIDENCE REQUIREMENTS			
PRACTICAL PERFORMANCE		UNDERPINNING KNOWLEDGE	
The person performing this task must be able to do the following: 1. Identify components to be cleaned 2. Select right tools, equipment and safety gears for the task 3. Observe health and safety when performing the task 4. Observe AMM instructions and limitations 5. Clean dusts stains and sticky objects on: a) Ground service panel		Detailed knowledge about: 1.0. Methods The person performing this task must be able to explain how to : 1.1 Scrape cleaning 1.2 Air blowing 1.3 Water spray cleaning 2.0. Principles The person performing this task must be able to explain the following principles :	

b) Fill adaptor c) Drain mast d) Water tank assembly 6. Return aircraft to normal configuration 7. Clean work area, tools and equipment 8. Store tools, equipment and safety gear appropriately 9. Submit aircraft cleaning checklist to be signed by certifying Aircraft Maintenance Engineer	2.1 Working Principle of Aircraft Landing Gear Parts 2.2 Essentials of Cleaning Aircraft Landing Gear Components 2.3 TCCA Regulations and AMM Directives and Restrictions 3.0. Theories: The person performing this task must be able to explain: 3.1 Landing gear structure and composition 3.2 Landing gear materials and coatings 3.3 Types of Dirt and Oil 4.0. Essential skills 4.1. Communication skills 4.2. Time management skills 4.3. Commitment 4.4. Problem solving skills 4.5. Ability to work under pressure 4.6. Interpersonal skills
Description of the end products / service	Cleaning of aircraft's water and waste system components is performed as updated procedures for Tanzania Civil Aviation Authority TCAA and AMM manual approval.
Circumstantial knowledge	Detailed knowledge about: 1. Selection of cleaning materials and disinfectants 2. Steps and procedures for cleaning the aircraft cabin 3. the correct use of cleaning utensils and equipment 4. knowledge of sanitation and disinfection 5. waste classification, collection and disposal methods

OCCUPATION	AIRCRAFT MAINTENANCE ENGINEERING TECHNICIAN (AIRFRAME & POWERPLANT)	OCCUPATION CODE	3143
DUTY TITLE	PERFORM ROUTINE CLEANING OF AIRCRAFT COMPONENTS AND EQUIPMENT ON AIRCRAFT SYSTEMS	DUTY NO.	401
TASK TITLE	CLEAN COMPONENTS ON FIRE PROTECTION SYSTEM	TASK NO.	4018
Performance criteria	The person performing this task must be able to clean components on aircraft's fire protection system as updated procedures for Tanzania Civil Aviation Authority TCAA and AMM manual approval.		
Range statement	The task will be performed in a hangar or ramp area under the supervision of a certifying Aircraft Maintenance Engineer. The following equipment, tools and materials will be needed in performing the task: P.P.E including gloves , masks or others, Brush, Non-abrasive cloth, Approved cleaning Materials and Water , Long-		

	handled brush, bucket or detergent sprayer, cleaning cloths , broom, bustpan , vacuum cleaners or air pressure blowers.
EVIDENCE REQUIREMENTS	
PRACTICAL PERFORMANCE	UNDERPINNING KNOWLEDGE
The person performing this task must be able to do the following: 1. Identify components to be cleaned 2. Select right tools, equipment and safety gears for the task 3. Observe health and safety when performing the task 4. Observe AMM instructions and limitations 5. Clean dust, and sticky objects on: a) Heat blanket b) Sensing elements 6. Clean work area, tools and equipment 7. Store tools, equipment and safety gear appropriately 8. Submit aircraft cleaning checklist to be signed by certifying Aircraft Maintenance Engineer	Detailed knowledge about: 1.0. Methods The person performing this task must be able to explain how to: 1.1 Air jet cleaning of thermal blankets 1.2 Electronics, cleaning solution to clean sensing elements 2.0. Principles The person performing this task must be able to explain the following principles : 2.1 Principles of operation of aircraft fire protection systems 2.2 Operational specifications for cleaning the components on the firefighting system 2.3 Periodic maintenance and inspection records 2.4 TCCA regulations and AMM directives and restrictions 3.0. Theories The person performing this task must be able to explain: 3.1 Principles of operation of fire protection systems 3.2 Composition of components on a fire protection system 3.3 Cleaning procedures 3.4 Safe handling and protective measures 4.0. Essential skills 4.1. Communication skills 4.2. Time management skills 4.3. Commitment 4.4. Problem solving skills 4.5. Ability to work under pressure 4.6. Interpersonal skills
Description of the end products / service	Cleaning of aircraft's fire protection system components is performed as updated procedures for Tanzania Civil Aviation Authority TCAA and AMM manual approval.
Circumstantial knowledge	Detailed knowledge about:

	1. Nature and characteristics of cleaning materials 2. Troubleshooting and maintenance techniques 3. Monitoring and testing methods 4. Cleaning procedures and codes of practice 5. occupational safety and health
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OCCUPATION	AIRCRAFT MAINTENANCE ENGINEERING TECHNICIAN (AIRFRAME & POWERPLANT)	OCCUPATION CODE	3143
DUTY TITLE	PERFORM ROUTINE CLEANING	DUTY NO.	402

	OF AIRCRAFT AIRFRAME STRUCTURE		
TASK TITLE	CLEAN COMPONENTS ON AIRCRAFT STABILIZERS	TASK NO.	4021
Performance criteria	The person performing this task must be able to clean components on aircraft stabilizers as updated procedures for Tanzania Civil Aviation Authority TCAA and AMM manual approval.		
Range statement	The task will be performed in a hangar or ramp area under the supervision of a certifying Aircraft Maintenance Engineer. The following equipment, tools and materials will be needed in performing the task: P.P.E including gloves , masks or others, Brush, Non-abrasive cloth, Approved cleaning Materials and Water , hand broom or soft bristle brush, cleaning cloths , wiping tools (e.g. rubber wiping strips, sponges or fine bristle brushes), surface protectants , high-pressure air guns/air compressors, vacuum cleaners.		
EVIDENCE REQUIREMENTS			
PRACTICAL PERFORMANCE		UNDERPINNING KNOWLEDGE	
The person performing this task must be able to do the following: 1. Identify components to be cleaned 2. Select right tools, equipment and safety gears for the task 3. Observe health and safety when performing the task 4. Observe AMM instructions and limitations 5. Clean dusts, moisture and stains on: a) Horizontal stabilizer b) Vertical stabilizer 6. Return aircraft to normal configuration 7. Clean work area, tools and equipment 8. Store tools, equipment and safety gear appropriately 9. Submit aircraft cleaning checklist to be signed by certifying Aircraft Maintenance Engineer		Detailed knowledge about: 1.0. Methods The person performing this task must be able to explain how to: 1.1 Dry and wet wiping 1.2 Blowing and vacuuming 1.3 Stain remover cleaning 1.4 Surface protection 2.0. Principles The person performing this task must be able to explain the following principles : 2.1 Use of suitable cleaning agents 2.2 Gentle handling and attention to detail 2.3 Protection against water ingress 2.4 Safe Handling 2.5 TCCA Regulations and AMM Directives and Restrictions 3.0. Theories The person performing this task must be able to explain: 3.1 Composition of aircraft stabilizing surfaces and their components 3.2 Surface Materials of Aircraft Stabilizing Surfaces 3.3 Types of Contaminants on Aircraft Stable Surfaces	

	3.4 Cleaning Procedures and Methods 4.0. Essential skills 4.1. Communication skills 4.2. Time management skills 4.3. Commitment 4.4. Problem solving skills 4.5. Ability to work under pressure 4.6. Interpersonal skills
Description of the end products / service	Cleaning of components on aircraft stabilizers is performed as updated procedures for Tanzania Civil Aviation Authority TCAA and AMM manual approval.
Circumstantial knowledge	Detailed knowledge about: 1. the composition of aircraft stabilizing surfaces 2. Properties and characteristics of aircraft stabilized surface materials 3. Selection and proportion of cleaning materials 4. Cleaning sequence and steps 5. Use of cleaning tools and equipment 6. safety precautions

OCCUPATION	AIRCRAFT MAINTENANCE ENGINEERING TECHNICIAN (AIRFRAME & POWERPLANT)	OCCUPATION CODE	3143
DUTY TITLE	PERFORM ROUTINE CLEANING OF AIRCRAFT AIRFRAME STRUCTURES	DUTY NO.	402
TASK TITLE	CLEAN COMPONENTS ON AIRCRAFT FUSELAGE	TASK NO.	4022
Performance criteria	The person performing this task must be able to clean components on aircraft fuselage as updated procedures for Tanzania Civil Aviation Authority TCAA and AMM manual approval.		
Range statement	The task will be performed in a hangar or ramp area under the supervision of a certifying Aircraft Maintenance Engineer. The following equipment, tools and materials will be needed in performing the task: P.P.E including gloves , masks , safety footwear or others, Brush, Non-abrasive cloth, Approved cleaning Materials and Water , cleaning cloths or sponges , Spraying equipment (including high-pressure nozzles, lances and spray cans), lifting equipment (e.g., ladders, steps, work platforms), long poles or extensions (e.g., scrubber poles, spray sticks or telescopic handles).		
EVIDENCE REQUIREMENTS			
PRACTICAL PERFORMANCE		UNDERPINNING KNOWLEDGE	
The person performing this task must be able to do the following: 1. Identify components to be cleaned 2. Select right tools, equipment and safety gears for the task 3. Observe health and safety when performing the task 4. Observe AMM instructions and		Detailed knowledge about: 1.0. Methods The person performing this task must be able to explain how to: 1.1 Spray cleaner, brush and wipe the surface 1.2 Rinse and dry 1.3 Inspect and clean up residues	

limitations 5. Clean dusts, moisture and stains on: a) Nose section b) Centre section c) Aft section 6. Return aircraft to normal configuration 7. Clean work area, tools and equipment 8. Store tools, equipment and safety gear appropriately 9. Submit aircraft cleaning checklist to be signed by certifying Aircraft Maintenance Engineer	2.0. Principles The person performing this task must be able to explain the following principles : 2.1 Spray cleaning materials evenly 2.2 The cleaning environment is at a suitable temperature 2.3 Thorough rinsing and drying 2.4 TCCA regulations and AMM directives and limits 3.0. Theories The person performing this task must be able to explain: 3.1 Aircraft Fuselage Structure and Components 3.2 Aircraft Fuselage Surface Treatments 3.3 Aircraft Fuselage Cleaning Procedures 3.4 Safety and Environmental Protection at Work at Height 4.0. Essential skills 4.1. Communication skills 4.2. Time management skills 4.3. Commitment 4.4. Problem solving skills 4.5. Ability to work under pressure 4.6. Interpersonal skills
Description of the end products / service	Cleaning of components on aircraft fuselage is performed as updated procedures for Tanzania Civil Aviation Authority TCAA and AMM manual approval.
Circumstantial knowledge	Detailed knowledge about: 1. Selection and use of cleaning agents 2. aircraft fuselage surface materials and coatings 3. aircraft fuselage cleaning procedures and standards 4. safety and environmental considerations

OCCUPATION	AIRCRAFT MAINTENANCE ENGINEERING TECHNICIAN (AIRFRAME & POWERPLANT)	OCCUPATION CODE	3143
DUTY TITLE	PERFORM ROUTINE CLEANING OF AIRCRAFT AIRFRAME STRUCTURES	DUTY NO.	402
TASK TITLE	CLEAN COMPONENTS ON AIRCRAFT WINDOWS	TASK NO.	4023
Performance criteria	The person performing this task must be able to clean components on aircraft windows as updated procedures for Tanzania Civil Aviation Authority TCAA and AMM manual approval.		
Range statement	The task will be performed in a hangar or ramp area under the supervision of a certifying Aircraft Maintenance Engineer. The following equipment, tools and materials will be needed in performing the task: P.P.E including gloves , masks or others, Brush		

	Non-abrasive cloth, Approved cleaning Materials and Water , Cleaning cloth or sponge , Soft scraper or plastic scraper , Spray bottles or guns, ladders or lifting equipment.
EVIDENCE REQUIREMENTS	
PRACTICAL PERFORMANCE	UNDERPINNING KNOWLEDGE
The person performing this task must be able to do the following: 1. Identify components to be cleaned 2. Select right tools, equipment and safety gears for the task 3. Observe health and safety when performing the task 4. Observe AMM instructions and limitations 5. Clean dusts, stains and moisture on: a) Flight compartment windshield b) Flight compartment side windows c) Passenger compartment windows 6. Return aircraft to normal configuration 7. Clean work area, tools and equipment 8. Store tools, equipment and safety gear appropriately 9. Submit aircraft cleaning checklist to be signed by certifying Aircraft Maintenance Engineer	Detailed knowledge about: 1.0. Methods The person performing this task must be able to explain how to : 1.1 Dry and wet cleaning 1.2 Vacuuming 2.0. Principles The person performing this task must be able to explain the following principles : 2.1 Principles of aircraft window cleaning 2.2 Gentle cleaning of aircraft windows 2.3 Thorough Cleaning of Aircraft Windows 2.3 TCCA Regulations and AMM Directives and Restrictions 3.0. Theories: The person performing this task must be able to explain: 3.1 Types and properties of window surface materials 3.2 Types, properties and use of window cleaning materials 3.3 Types, characteristics and treatment of window stains 3.4 Sequence of window cleaning and division of cleaning areas 4.0. Essential skills 4.1. Communication skills 4.2. Time management skills 4.3. Commitment 4.4. Problem solving skills 4.5. Ability to work under pressure 4.6. Interpersonal skills
Description of the end products / service	Cleaning of components on aircraft windows is performed as updated procedures for Tanzania Civil Aviation Authority TCAA and AMM manual approval.
Circumstantial knowledge	Detailed knowledge about:

	1. properties, uses and application of cleaning materials 2. safety requirements and procedures for aircraft window cleaning 3. surface materials and types of dirt on aircraft windows 4. handling of special cases
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OCCUPATION	AIRCRAFT MAINTENANCE ENGINEERING TECHNICIAN (AIRFRAME & POWERPLANT)	OCCUPATION CODE	3143
DUTY TITLE	PERFORM ROUTINE CLEANING OF AIRCRAFT AIRFRAME STRUCTURES	DUTY NO.	402
TASK TITLE	CLEAN COMPONENTS ON AIRCRAFT WINGS	TASK NO.	4024
Performance criteria	The person performing this task must be able to clean components on aircraft wings as updated procedures for Tanzania Civil Aviation Authority TCAA and AMM manual approval.		
Range statement	The task will be performed in a hangar or ramp area under the supervision of a certifying Aircraft Maintenance Engineer. The following equipment, tools and materials will be needed in performing the task: P.P.E including gloves , masks or others , Brush Non-abrasive cloth, Approved cleaning Materials and Water , scraper, high pressure spray gun or spray can , Work-at-height equipment (e.g., ladders or platforms).		
EVIDENCE REQUIREMENTS			
PRACTICAL PERFORMANCE		UNDERPINNING KNOWLEDGE	
The person performing this task must be able to do the following: 1. Identify components to be cleaned 2. Select right tools, equipment and safety gears for the task 3. Observe health and safety when performing the task 4. Observe AMM instructions and limitations 5. Clean dusts, stains and moisture on wings with non-abrasive cloth 6. Return aircraft to normal configuration 7. Clean work area, tools and equipment 8. Store tools, equipment and safety gear appropriately 9. Submit aircraft cleaning checklist to be signed by certifying Aircraft Maintenance Engineer		Detailed knowledge about: 1.0. Methods The person performing this task must be able to explain how to : 1.1 Manual wiping 1.2 Dry brushing 1.3 Detergent dissolution 1.4 High-pressure water jet cleaning 2.0. Principles The person performing this task must be able to explain the following principles : 2.1 Physical removal 2.2 Chemical dissolution 2.3 Surface Protection 2.4 TCCA Regulations and AMM Directives and Restrictions 3.0. Theories The person performing this task must be able to explain: 3.1 Aircraft wing composition and its components 3.2 Materials and Coatings for Aircraft Wings 3.3 Dirt and Contaminants on Aircraft Wings	

	3.3 Cleaning procedures for aircraft wings 4.0. Essential skills 4.1. Communication skills 4.2. Time management skills 4.3. Commitment 4.4. Problem solving skills 4.5. Ability to work under pressure 4.6. Interpersonal skills
Description of the end products / service	Cleaning of components on aircraft wings is performed as updated procedures for Tanzania Civil Aviation Authority TCAA and AMM manual approval.
Circumstantial knowledge	Detailed knowledge about: 1. properties, uses and applications of cleaning materials 2. cleaning procedures for aircraft wing components 3. Safety requirements

OCCUPATION	AIRCRAFT MAINTENANCE ENGINEERING TECHNICIAN (AIRFRAME & POWERPLANT)	OCCUPATION CODE	3143
DUTY TITLE	PERFORM ROUTINE CLEANING OF AIRCRAFT AIRFRAME STRUCTURES	DUTY NO.	402
TASK TITLE	CLEAN COMPONENTS ON AIRCRAFT DOORS	TASK NO.	4025
Performance criteria	The person performing this task must be able to clean components on aircraft doors as updated procedures for Tanzania Civil Aviation Authority TCAA and AMM manual approval.		
Range statement	The task will be performed in a hangar or ramp area under the supervision of a certifying Aircraft Maintenance Engineer. The following equipment, tools and materials will be needed in performing the task: P.P.E including gloves , masks or others, Brush Non-abrasive cloth, Approved cleaning Materials and Water , Clean rag or sponge , disinfectants , vacuum cleaners, push washers, high pressure water guns.		
EVIDENCE REQUIREMENTS			
PRACTICAL PERFORMANCE		UNDERPINNING KNOWLEDGE	
The person performing this task must be able to do the following: 1. Identify components to be cleaned 2. Select right tools, equipment and safety gears for the task 3. Observe health and safety when performing the task 4. Observe AMM instructions and limitations 5. Clean dusts, moisture and stains on: a) Passenger doors b) Service doors		Detailed knowledge about: 1.0. Methods The person performing this task must be able to explain how to : 1.1 Wipe cleaning 1.2 High-pressure water jet cleaning 1.3 Aerosol cleaning 2.0. Principles The person performing this task must be able to explain the following principles : 2.1 Principles of Cleanliness and Hygiene of Aircraft	

c) Emergency doors 6. Return aircraft to normal configuration 7. Clean work area, tools and equipment 8. Store tools, equipment and safety gear appropriately 9. Submit aircraft cleaning checklist to be signed by certifying Aircraft Maintenance Engineer	Hatches 2.2 Principles of aircraft hatch cleaning and safety 2.3 Principles of aircraft hatch cleaning and environmental protection 2.4 Principles of Cleaning and Sanitizing Aircraft Hatches 2.5 TCCA Regulations and AMM Directives and Restrictions 3.0. Theories The person performing this task must be able to explain: 3.1 Structure and composition of aircraft hatches 3.2 Types of materials, properties and surface treatments used for aircraft hatches 3.3 Stains and types of contamination on aircraft hatches 3.4 Cleaning procedures and processes 3.5 Health and safety standards 4.0. Essential skills 4.1. Communication skills 4.2. Time management skills 4.3. Commitment 4.4. Problem solving skills 4.5. Ability to work under pressure 4.6. Interpersonal skills
Description of the end products / service	Cleaning of components on aircraft doors is performed as updated procedures for Tanzania Civil Aviation Authority TCAA and AMM manual approval.
Circumstantial knowledge	Detailed knowledge about: 1. selection and use of cleaning materials 2. aircraft hatch types and characteristics 3. aircraft hatch surface cleaning techniques 4. cleaning records and reports 5. aviation safety regulations 6. seal maintenance

OCCUPATION	AIRCRAFT MAINTENANCE ENGINEERING TECHNICIAN (AIRFRAME & POWERPLANT)	OCCUPATION CODE	3143
DUTY TITLE	CLEAN APU AND ACCESSORIES	DUTY NO.	403
TASK TITLE	CLEAN APU STRUCTURE	TASK NO.	4031
Performance criteria	The person performing this task must be able to clean APU structure as updated procedures for Tanzania Civil Aviation Authority TCAA and AMM manual approval.		
Range statement	The task will be performed in a hangar or ramp area under the supervision of a certifying Aircraft Maintenance Engineer. The following equipment, tools and materials will be needed in		

	performing the task: P.P.E including gloves, masks, respirators or others , Brush Non-abrasive cloth, Approved cleaning Materials and Water , Sprayer or gun , degreaser , vacuum cleaner.
EVIDENCE REQUIREMENTS	
PRACTICAL PERFORMANCE	UNDERPINNING KNOWLEDGE
The person performing this task must be able to do the following: 1. Identify components to be cleaned 2. Select right tools, equipment and safety gears for the task 3. Observe health and safety when performing the task 4. Observe AMM instructions and limitations 5. Clean dusts, moisture and stains on external structure of the APU using a dry non-abrasive cloth 6. Clean work area, tools and equipment 7. Store tools, equipment and safety gear appropriately 8. Submit aircraft cleaning checklist to be signed by certifying Aircraft Maintenance Engineer	Detailed knowledge about: 1.0. Methods The person performing this task must be able to explain how to : 1.1 Wet wipes 1.2 Spray cleaning 1.3 High-pressure water jet cleaning 2.0. Principles The person performing this task must be able to explain the following principles : 2.1 Working Principle of Aircraft APU Unit 2.2 Principles of Cleaning Aircraft APU Units 2.3 TCCA Regulations and AMM Directives and Restrictions 3.0. Theories The person performing this task must be able to explain: 3.1 Types of stains and contamination in aircraft APU units 3.2 Cleaning procedures and processes 3.3 Health and safety standards 4.0. Essential skills 4.1. Communication skills 4.2. Time management skills 4.3. Commitment 4.4. Problem solving skills 4.5. Ability to work under pressure 4.6. Interpersonal skills
Description of the end products / service	Cleaning of aircraft APU structure is performed as updated procedures for Tanzania Civil Aviation Authority TCAA and AMM manual approval.
Circumstantial knowledge	Detailed knowledge about: 1. Properties, applications and usage of cleaning materials 2. the basic principle and system composition of the aircraft APU 3. Aircraft APU operating procedures

	4. Aircraft APU troubleshooting 5. Occupational safety and health
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OCCUPATION	AIRCRAFT MAINTENANCE ENGINEERING TECHNICIAN (AIRFRAME & POWERPLANT)	OCCUPATION CODE	3143
DUTY TITLE	CLEAN APU AND ACCESSORIES	DUTY NO.	403

TASK TITLE	CLEAN APU ACCESSORIES	TASK NO.	4032
Performance criteria	The person performing this task must be able to clean APU accessories as updated procedures for Tanzania Civil Aviation Authority TCAA and AMM manual approval.		
Range statement	The task will be performed in a hangar or ramp area under the supervision of a certifying Aircraft Maintenance Engineer. The following equipment, tools and materials will be needed in performing the task: P.P.E including gloves , masks or others, Brush Non-abrasive cloth, Approved cleaning Materials and Water , sponge, cleaning cloth , nebulizer , high-pressure air supply, vacuum cleaner.		
EVIDENCE REQUIREMENTS			
PRACTICAL PERFORMANCE		UNDERPINNING KNOWLEDGE	
The person performing this task must be able to do the following: 1. Identify components to be cleaned 2. Select right tools, equipment and safety gears for the task 3. Observe health and safety when performing the task 4. Observe AMM instructions and limitations 5. Clean dusts and stains on external surfaces of: a) Starter generator b) Oil cooler c) Fuel metering unit d) Ignition exciter 6. Clean work area, tools and equipment 7. Store tools, equipment and safety gear appropriately 8. Submit aircraft cleaning checklist to be signed by certifying Aircraft Maintenance Engineer		Detailed knowledge about: 1.0. Methods The person performing this task must be able to explain how to : 1.1 Cleaning the surface of aircraft APU fittings 1.2 Penetration cleaning of aircraft APU fittings 1.3 High-pressure air blowing 1.4 Polishing 2.0. Principles The person performing this task must be able to explain the following principles: 2.1 Working Principle of Aircraft Air Conditioning System 2.2 Principles of Cleaning Aircraft Air Conditioning Systems 2.3 TCCA Regulations and AMM Directives and Restrictions 3.0. Theories The person performing this task must be able to explain: 3.1 Composition of air-conditioning systems and their components 3.2 Selection of cleaning materials for air-conditioning systems and their components 3.3 Cleaning procedures 4.0. Essential skills 4.1. Communication skills	

	4.2. Time management skills 4.3. Commitment 4.4. Problem solving skills 4.5. Ability to work under pressure 4.6. Interpersonal skills
Description of the end products / service	Cleaning of aircraft APU accessories is performed as updated procedures for Tanzania Civil Aviation Authority TCAA and AMM manual approval.
Circumstantial knowledge	Detailed knowledge about: 1. Properties, applications and usage of cleaning materials 2. The basic principle and system composition of aircraft APU fittings 3. Aircraft APU accessories operating procedures 4. Troubleshooting of aircraft APU fittings 5. Occupational safety and health

OCCUPATION	AIRCRAFT MAINTENANCE ENGINEERING TECHNICIAN (AIRFRAME & POWERPLANT)	OCCUPATION CODE	3143
DUTY TITLE	PERFORM ROUTINE CLEANING ON THE AIRCRAFT PISTON ENGINE AND ACCESSORIES	DUTY NO.	404
TASK TITLE	CLEAN AIRCRAFT’S PISTON ENGINE STRUCTURE	TASK NO.	4041
Performance criteria	The person performing this task must be able to clean aircraft’s piston engine structure as updated procedures for Tanzania Civil Aviation Authority TCAA and AMM manual approval.		
Range statement	The task will be performed in a hangar or ramp area under the supervision of a certifying Aircraft Maintenance Engineer. The following equipment, tools and materials will be needed in performing the task: P.P.E including gloves , masks or others , Brush Non-abrasive cloth, Approved cleaning Materials and Water , high-pressure water guns, spray guns , gas/steam washing equipment, lighting equipment, magnifiers.		
EVIDENCE REQUIREMENTS			
PRACTICAL PERFORMANCE		UNDERPINNING KNOWLEDGE	
The person performing this task must be able to do the following: 1. Identify components to be cleaned 2. Select right tools, equipment and safety gears for the task 3. Observe health and safety when performing the task , place a red "do not operate" warning sign on the cockpit engine starter handle or power door and disconnect the relevant circuit trip switches. 4. Observe AMM instructions and limitations 5. Clean dusts, moisture and oil stains on: a) Piston engine structure b) Piston engine accessories 6. After cleaning, lubricate the rocker arm, lever head, etc. according to the maintenance manual. 7. Clean work area, tools and equipment		Detailed knowledge about: 1.0. Methods The person performing this task must be able to explain how to : 1.1 Disconnect the power supply 1.2 Check ignition coil and spark plugs 1.3 Check connectors and leads 1.4 Perform tests 1.5 Mounting and fixing 2.0. Principles The person performing this task must be able to explain the following principles : 2.1 Principle of operation of piston engine ignition system of an airplane 2.2 Principles of cleaning piston engine ignition systems in aircraft 2.3 TCCA Regulations and AMM Directives and Restrictions 3.0. Theories The person performing this task must be able to	

8. Store tools, equipment and safety gear appropriately 9. Submit aircraft cleaning checklist to be signed by certifying Aircraft Maintenance Engineer	explain: 3.1 Components of the piston engine ignition system of an airplane 3.2 Principle of Ignition Coil Operation 3.3 Principle of Ignition System 3.4 Principle of Spark Plug Operation 4.0. Essential skills 4.1. Communication skills 4.2. Time management skills 4.3. Commitment 4.4. Problem solving skills 4.5. Ability to work under pressure 4.6. Interpersonal skills
Description of the end products / service	Cleaning of aircraft's piston engine structure is performed as updated procedures for Tanzania Civil Aviation Authority TCAA and AMM manual approval.
Circumstantial knowledge	Detailed knowledge about: 1. Ignition System Troubleshooting 2. Ignition Coil Types 3. Ignition Wiring Inspection 4. Spark Plug Selection and Installation 5. Codes and Standards

OCCUPATION	AIRCRAFT MAINTENANCE ENGINEERING TECHNICIAN (AIRFRAME & POWERPLANT)	OCCUPATION CODE	3143
DUTY TITLE	PERFORM ROUTINE CLEANING ON THE AIRCRAFT PISTON ENGINE AND ACCESSORIES	DUTY NO.	404
TASK TITLE	CLEAN AIRCRAFT’S PISTON ENGINE IGNITION SYSTEM	TASK NO.	4042
Performance criteria	The person performing this task must be able to clean aircraft’s piston engine ignition system as updated procedures for Tanzania Civil Aviation Authority TCAA and AMM manual approval.		
Range statement	The task will be performed in a hangar or ramp area under the supervision of a certifying Aircraft Maintenance Engineer. The following equipment, tools and materials will be needed in performing the task: P.P.E including gloves , masks or others, Brush Non-abrasive cloth, Approved cleaning Materials and Water , Ignition coil testers, ignition coil static dischargers, hand tools (e.g., wrenches, screwdrivers, pliers), ignition coil and spark plug extraction tools, compressed air tools.		
EVIDENCE REQUIREMENTS			
PRACTICAL PERFORMANCE		UNDERPINNING KNOWLEDGE	
The person performing this task must be able to do the following: 1. Identify components to be cleaned 2. Select right tools, equipment and		Detailed knowledge about: 1.0. Methods The person performing this task must be able to explain how to :	

safety gears for the task 3. Observe health and safety when performing the task , place a red "do not operate" warning sign on the cockpit engine starter handle or power door and disconnect the relevant circuit trip switches. 4. Observe AMM instructions and limitations 5. Clean dusts, stains and carbon deposits on piston engine spark plug 6. After cleaning, lubricate the rocker arm, lever head, etc. according to the maintenance manual. 7. Clean work area, tools and equipment 8. Store tools, equipment and safety gear appropriately 9. Submit aircraft cleaning checklist to be signed by certifying Aircraft Maintenance Engineer	1.1 Disconnect the power supply 1.2 Check ignition coil and spark plugs 1.3 Check connectors and leads 1.4 Perform tests 1.5 Mounting and fixing 2.0. Principles The person performing this task must be able to explain the following principles : 2.1 Principle of operation of piston engine ignition system of an airplane 2.2 Principles of cleaning piston engine ignition systems in aircraft 2.3 TCCA Regulations and AMM Directives and Restrictions 3.0. Theories The person performing this task must be able to explain: 3.1 Components of the piston engine ignition system of an airplane 3.2 Principle of Ignition Coil Operation 3.3 Principle of Ignition System 3.4 Principle of Spark Plug Operation 4.0. Essential skills 4.1. Communication skills 4.2. Time management skills 4.3. Commitment 4.4. Problem solving skills 4.5. Ability to work under pressure 4.6. Interpersonal skills
Description of the end products / service	Cleaning of aircraft's piston engine ignition system is performed as updated procedures for Tanzania Civil Aviation Authority TCAA and AMM manual approval.
Circumstantial knowledge	Detailed knowledge about: 1. Ignition System Troubleshooting 2. Ignition Coil Types 3. Ignition Wiring Inspection 4. Spark Plug Selection and Installation 5. Codes and Standards

OCCUPATION	AIRCRAFT MAINTENANCE ENGINEERING TECHNICIAN (AIRFRAME & POWERPLANT)	OCCUPATION CODE	3143
DUTY TITLE	PERFORM ROUTINE CLEANING ON THE AIRCRAFT PISTON ENGINE AND ACCESSORIES	DUTY NO.	404
TASK TITLE	CLEAN AIRCRAFT'S PISTON ENGINE OIL SYSTEM	TASK NO.	4043
Performance criteria	The person performing this task must be able to clean aircraft's piston engine oil system as updated procedures for Tanzania Civil		

	Aviation Authority TCAA and AMM manual approval.
Range statement	The task will be performed in a hangar or ramp area under the supervision of a certifying Aircraft Maintenance Engineer. The following equipment, tools and materials will be needed in performing the task: P.P.E including gloves , masks or others , Brush Non-abrasive cloth, Approved cleaning Materials and Water , oil filter wrench, soft cloth or paper towel, oil drain pan, oil drain bucket , electric or manual sump pumps, compressed air equipment, containers for waste oils.
EVIDENCE REQUIREMENTS	
PRACTICAL PERFORMANCE	UNDERPINNING KNOWLEDGE
The person performing this task must be able to do the following: 1. Identify components to be cleaned 2. Select right tools, equipment and safety gears for the task 3. Observe health and safety when performing the task , place a red "do not operate" warning sign on the cockpit engine starter handle or power door and disconnect the relevant circuit trip switches. 4. Observe AMM instructions and limitations 5. Clean debris on piston engine oil system screens(filters) 6. After cleaning, lubricate the rocker arm, lever head, etc. according to the maintenance manual. 7. Clean work area, tools and equipment 8. Store tools, equipment and safety gear appropriately 9. Submit aircraft cleaning checklist to be signed by certifying Aircraft Maintenance Engineer	Detailed knowledge about: 1.0. Methods The person performing this task must be able to explain how to : 1.1 Change oil and filter 1.2 Use oil system cleaner 1.3 Perform oil system flush 1.4 Check and clean oil supply and drain lines 2.0. Principles The person performing this task must be able to explain the following principles : 2.1 Oil Filtration Principle 2.2 System circulation and circulating oil temperature control 2.3 Oil Additives 2.4 TCCA Regulations and AMM Directives and Restrictions 3.0. Theories The person performing this task must be able to explain: 3.1 Lubrication principle 3.2 Design of the oil circuit system 3.3 Heat transfer and cooling effect 3.4 Maintenance and servicing requirements 4.0. Essential skills 4.1. Communication skills 4.2. Time management skills 4.3. Commitment 4.4. Problem solving skills 4.5. Ability to work under pressure 4.6. Interpersonal skills

Description of the end products / service	Cleaning of aircraft's piston engine oil system is performed as updated procedures for Tanzania Civil Aviation Authority TCAA and AMM manual approval.
Circumstantial knowledge	Detailed knowledge about: 1. oil selection and specification 2. lubrication principles and oil circulation systems 3. oil filters and filtration principles 4. lubrication system inspection and maintenance 5. Occupational safety and health

OCCUPATION	AIRCRAFT MAINTENANCE ENGINEERING TECHNICIAN (AIRFRAME & POWERPLANT)	OCCUPATION CODE	3143
DUTY TITLE	PERFORM ROUTINE CLEANING OF THE AIRCRAFT GAS TURBINE ENGINE STRUCTURE, SYSTEMS AND ACCESSORIES	DUTY NO.	405
TASK TITLE	PERFORM CLEANING OF THE GAS TURBINE ENGINE AND ACCESSORIES	TASK NO	4051
Performance criteria	The person performing this task must be able to carry out cleaning of aircraft’s gas turbine engine structure and accessories as updated procedures for Tanzania Civil Aviation Authority TCAA and AMM manual approval.		
Range statement	The task will be performed in a hangar or ramp area under the supervision of a certifying Aircraft Maintenance Engineer. The following equipment, tools and materials will be needed in performing the task: P.P.E including gloves , masks or others , Brush Non-abrasive cloth, Approved cleaning Materials and Water , compressed air systems, brushes, spray guns, scrubbers , Hand tools (e.g., wrenches, screwdrivers, pliers) , Detection equipment (e.g. detectors, oil fillers), sealing tapes and protective sleeves.		
EVIDENCE REQUIREMENTS			
PRACTICAL PERFORMANCE		UNDERPINNING KNOWLEDGE	
The person performing this task must be able do the following: 1. Identify component to be cleaned 2. Select right tools, equipment and safety gears for the task 3. Observe health and safety when performing the task , place a red "do not operate" warning sign on the cockpit engine starter handle or power door and disconnect the relevant circuit trip switches. 4. Observe TCAA regulations 5. Place a cushion or carpet over the intake to prevent scratches to the intake.		Detailed knowledge about: 1.0. Methods The person performing this task must be able to explain how to : 1.1 Determine cleaning area 1.2 Brushing or wiping 1.3 Drying 1.4 Inspection and maintenance 2.0. Principles The person performing this task must be able to explain the following principles : 2.1 Working Principles of Aircraft Gas Turbine Engines 2.2 Principles of Cleaning Aircraft Gas Turbine	

6. Clean dusts, sand deposits, moisture and oil stains on: a) External engine structure b) Compressor and turbine assembly (desalination wash) 7. Return aircraft to normal configuration 8. After cleaning, lubricate the rocker arm, lever head, etc. according to the maintenance manual. 9. Clean work area, tools and equipment 10. Store tools, equipment and safety gear appropriately 11. Submit aircraft cleaning checklist to be signed by certifying Aircraft Maintenance Engineer	Engines 2.3 TCCA Regulations and AMM Directives and Restrictions 3.0. Theories The person performing this task must be able to explain: 3.1 Engine structure and working principle 3.2 Pollutant Types and Characteristics 3.3 Cleaning Technologies and Processes 4.0. Essential skills 4.1. Communication skills 4.2. Time management skills 4.3. Commitment 4.4. Problem solving skills 4.5. Ability to work under pressure 4.6. Interpersonal skills
Description on the end products / service	Cleaning of aircraft's gas turbine engine structure and accessories is performed as updated procedures for Tanzania Civil Aviation Authority TCAA and AMM manual approval.
Circumstantial knowledge	Detailed knowledge about: 1. properties, applications and usage of cleaning materials 2. types and characteristics of engine contaminants 3. Inspection and evaluation techniques 4. safety measures and environmental protection

OCCUPATION	AIRCRAFT MAINTENANCE ENGINEERING TECHNICIAN (AIRFRAME & POWERPLANT)	OCCUPATION CODE	3143
DUTY TITLE	PERFORM ROUTINE CLEANING OF THE AIRCRAFT GAS TURBINE ENGINE STRUCTURE, SYSTEMS AND ACCESSORIES	DUTY NO.	405
TASK TITLE	PERFORM CLEANING OF THE AIRCRAFT GAS TURBINE ENGINE AIR SYSTEM	TASK NO	4052
Performance criteria	The person performing this task must be able to carry out cleaning of aircraft’s gas turbine engine air system as updated procedures for Tanzania Civil Aviation Authority TCAA and AMM manual approval.		
Range statement	The task will be performed in a hangar or ramp area under the supervision of a certifying Aircraft Maintenance Engineer. The following equipment, tools and materials will be needed in performing the task: P.P.E including gloves, masks, earplugs or others, Brush Non-abrasive cloth, Approved cleaning Materials and Water , Scraping Tools , Hand tools (e.g., wrenches, screwdrivers, pliers) , Compressed air guns, vacuum cleaners, pipe cleaning tools (e.g., pipe brushes, high-pressure air guns).		
EVIDENCE REQUIREMENTS			
PRACTICAL PERFORMANCE		UNDERPINNING KNOWLEDGE	
The person performing this task must be able do the following: 1. Identify component to be cleaned 2. Select right tools, equipment and safety gears for the task 3. Observe health and safety when performing the task , place a red "do not operate" warning sign on the		Detailed knowledge about: 1.0. Methods The person performing this task must be able to explain how to : 1.1 Inspection and protection 1.2 Air jet cleaning 1.3 Dirt Removal 1.4 Vacuuming and inspection	

cockpit engine starter handle or power door and disconnect the relevant circuit trip switches. - Observe TCAA regulations - Clean dusts, stains, moisture and sticky objects on: - Engine bleed valves screens (filters) - Engine air passenger ducts - Return aircraft to normal configuration - After cleaning, lubricate the rocker arm, lever head, etc. according to the maintenance manual. - Clean work area, tools and equipment - Store tools, equipment and safety gear appropriately - Submit aircraft cleaning checklist to be signed by certifying Aircraft Maintenance Engineer	2.0. Principles The person performing this task must be able to explain the following principles : - Working Principle of Aircraft Gas Turbine Engine Air System - Principles of Aircraft Gas Turbine Engine Air System Cleaning - TCCA Regulations and AMM Directives and Restrictions 3.0. Theories The person performing this task must be able to explain: - Gas Turbine Engine Air System Structure and Function - Dirt formation and adhesion mechanism - Corrosion Mechanism and Protective Measures 4.0. Essential skills - Communication skills - Time management skills - Commitment - Problem solving skills - Ability to work under pressure - Interpersonal skills
Description on the end products / service	Cleaning of aircraft gas turbine engine air system is performed as updated procedures for Tanzania Civil Aviation Authority TCAA and AMM manual approval.
Circumstantial knowledge	Detailed knowledge about: - properties, uses and applications of cleaning materials - Atmospheric dynamics - Performance evaluation and monitoring - Troubleshooting and maintenance

OCCUPATION	AIRCRAFT MAINTENANCE ENGINEERING TECHNICIAN (AIRFRAME & POWERPLANT)	OCCUPATION CODE	3143
DUTY TITLE	PERFORM CLEANING OF THE AIRCRAFT PROPELLER AND ACCESSORIES	DUTY NO.	406
TASK TITLE	CLEAN PROPELLERS AND ACCESSORIES	TASK NO.	4061
Performance criteria	The person performing this task must be able to clean aircraft propellers and accessories as updated procedures for Tanzania Civil Aviation Authority TCAA and AMM manual approval.		
Range statement	The task will be performed in a hangar or ramp area under the supervision of a certifying Aircraft Maintenance Engineer. The following equipment, tools and materials will be needed in performing the task: P.P.E including gloves , masks or others , Brush Non-abrasive cloth, Approved cleaning Materials and Water , Sponge, soft cloth or fiber cloth , Manual or electric screwdriver , Sprayers, high-pressure air guns, safety supports.		
EVIDENCE REQUIREMENTS			
PRACTICAL PERFORMANCE		UNDERPINNING KNOWLEDGE	
The person performing this task must be able to do the following:		Detailed knowledge about: 1.0. Methods	

1. Identify components to be cleaned 2. Select right tools, equipment and safety gears for the task 3. Observe health and safety when performing the task , place a red "do not operate" warning sign on the cockpit engine starter handle or power door and disconnect the relevant circuit trip switches. 4. Observe AMM instructions and limitations 5. Clean dusts, moisture and stains: a) Propeller blade assembly b) Propeller spinner assembly c) Propeller hub assembly 6. After cleaning, lubricate the rocker arm, lever head, etc. according to the maintenance manual. 7. Clean work area, tools and equipment 8. Store tools, equipment and safety gear appropriately 9. Submit aircraft cleaning checklist to be signed by certifying Aircraft Maintenance Engineer	The person performing this task must be able to explain how to : 1.1 Wipe cleaning 1.2 Polishing 1.3 Inspection and Installation 2.0. Principles The person performing this task must be able to explain the following principles : 2.1 Working Principles of Aircraft Propellers and Accessories 2.2 Principles of cleaning aircraft propellers and accessories 2.3 TCCA Regulations and AMM Directives and Restrictions 3.0. Theories The person performing this task must be able to explain: 3.1 Structure and principles of propellers and accessories 3.2 Surface treatment and anti-corrosion measures 3.3 Characteristics and classification of dirt 4.0. Essential skills 4.1. Communication skills 4.2. Time management skills 4.3. Commitment 4.4. Problem solving skills 4.5. Ability to work under pressure 4.6. Interpersonal skills
Description of the end products / service	Cleaning of aircraft propellers and accessories is performed as updated procedures for Tanzania Civil Aviation Authority TCAA and AMM manual approval.
Circumstantial knowledge	Detailed knowledge about: 1. Properties, uses and applications of cleaning materials 2. Classification and treatment of dirt 3. Safe operation and environmental protection 4. Maintenance records and inspections

**TABLE 1: DACUM CHARTS FOR AIRCRAFT MAINTENANCE ENGINEERING
TECHNICIAN (AIRFRAME & POWER-PLANT) LEVEL 4**

DUTIES	TASK	TASK ELEMENTS	ENABLERS
1.0. Perform routine cleaning of aircraft's components and equipment on aircraft systems	1.1. Clean components on air conditioning system	1.1.1. Clean dust and moisture on: a. Heat exchanger b. Pressure sensor c. Temperature sensor d. Air conditioning ducts e. Recirculation air filter f. Air conditioning valves filters	Generic skills and knowledge • Using communication skills to work with others and to supervisors Tools and Equipment • Personal Protective Equipment (PPE) safety shoes, coveralls, gloves • Cotton rags • Brush Worker behavior • Team spirit • Trustworthy • Time management • Commitment
	1.2. Clean components on Flight control system	1.2.1. Clean dust and stains on: a. Elevator b. Rudder c. Aileron	Generic skills and knowledge • Using communication skills to work with others and to supervisors Tools and Equipment • Personal Protective Equipment (PPE) safety shoes, coveralls, gloves • Cotton rags • Brush Worker behavior • Team spirit • Trustworthy • Time management • Commitment
	1.3. Clean components on hydraulic system	1.3.1. Clean dust, moisture and oil stains on: a. Hydraulic pipes b. Hydraulic actuators c. Hydraulic pumps d. Hydraulic bays	Generic skills and knowledge • Using communication skills to work with others and to supervisors Tools and Equipment

DUTIES	TASK	TASK ELEMENTS	ENABLERS
			- Personal Protection: safety shoes, cotton gloves - Cotton rags - Brush Worker behaviour - Team spirit - Trustworthy - Time management - Commitment
	1.4. Clean components on hydraulic system	1.4.1. Clean dust, moisture and oil stains on: a. Hydraulic pipes b. Hydraulic actuators c. Hydraulic pumps d. Hydraulic bays	Generic skills and competences - Using communication: work with others and to supervisors Tools and Equipment - Personal Protection: safety shoes, cotton gloves - Cotton rags - Brush Worker behaviour - Team spirit - Trustworthy - Time management - Commitment
	1.5. Clean components on oxygen system	1.5.1. Clean dust and stains on: a. Oxygen masks b. Smoke goggles	Generic skills and competences - Using communication: work with others and to supervisors Tools and Equipment - Personal Protection: safety shoes, cotton gloves - Cotton rags

DUTIES	TASK	TASK ELEMENTS	ENABLERS
			Worker behavior • Team spirit • Trustworthy • Time management • Commitment
	1.6. Clean components on ice and rain system	1.6.1. Clean blocked pitot-static probes	Generic skills and knowledge • Using communication skills to work with others and report to supervisors Tools and Equipment • Personal Protective Equipment (PPE): safety shoes, coveralls, gloves • Cotton rags Worker behavior • Team spirit • Trustworthy • Time management • Commitment
	1.7. Clean components on landing gear system	1.7.1. Clean dust and oil stains: a. Nose landing gear assemblies b. Main landing gear assemblies	Generic skills and knowledge • Using communication skills to work with others and report to supervisors Tools and Equipment • Personal Protective Equipment (PPE): safety shoes, coveralls, gloves • Cotton rags • Brush Worker behavior • Team spirit • Trustworthy • Time management • Commitment
	1.8. Clean components on water and waste	1.8.1. Clean dust and stains: a. Ground service panel	Generic skills and knowledge • Using communication skills to work with others and report to supervisors

DUTIES	TASK	TASK ELEMENTS	ENABLERS
	system	b. Fill adaptor c. Drain mast d. Water tank assembly	work with others to supervisors Tools and Equipment - Personal Protective Equipment (PPE): safety shoes, cotton gloves - Cotton rags - Brush Worker behaviours - Team spirit - Trustworthy - Time management - Commitment
	1.9. Clean components on aircraft fire protection system	1.9.1. Clean dust and sticky objects: a. Heat blanket b. Sensing elements	Generic skills and competencies - Using communication skills to work with others to supervisors Tools and Equipment - Personal Protective Equipment (PPE): safety shoes, cotton gloves - Cotton rags - Brush Worker behaviours - Team spirit - Trustworthy - Time management - Commitment
2.0. Clean aircraft airframe structure	2.1. Clean aircraft stabilizers	2.1.1. Clean dust, moisture and stains: a. Horizontal stabilizer b. Vertical stabilizer	Generic skills and competencies - Using communication skills to work with others to supervisors Tools and Equipment - Personal Protective Equipment (PPE): safety shoes, cotton gloves - Cotton rags - Brush

DUTIES	TASK	TASK ELEMENTS	ENABLERS
			Worker behavior • Team spirit • Trustworthy • Time manager • Commitment
	2.2. Clean aircraft fuselage	2.2.1. Clean dust, moisture and stains: - Nose section - Center section - Aft section	Generic skills and knowledge • Using communication skills to work with others and to supervisors Tools and Equipment • Personal Protective Equipment (PPE): safety shoes, coveralls, gloves • Cotton rags • Brush Worker behavior • Team spirit • Trustworthy • Time manager • Commitment
	2.3. Clean aircraft windows	2.3.1. Clean dust, moisture and stains: - Flight compartment windshield - Flight compartment side windows - Passenger compartment windows	Generic skills and knowledge • Using communication skills to work with others and to supervisors Tools and Equipment • Personal Protective Equipment (PPE): safety shoes, coveralls, gloves • Cotton rags • Brush Worker behavior • Team spirit • Trustworthy • Time manager • Commitment
	2.4. Clean aircraft wings	2.4.1. Clean dust and stains on wings	Generic skills and knowledge • Using communication skills to work with others and to supervisors

DUTIES	TASK	TASK ELEMENTS	ENABLERS
			work with others to supervisors Tools and Equipment - Personal Protective Equipment (PPE): safety shoes, cotton gloves - Cotton rags - Brush Worker behaviours - Team spirit - Trustworthy - Time management - Commitment
	2.5. Clean aircraft doors	2.5.1. Clean dust, moisture and stains on: - Passenger doors - Service doors - Emergency doors	Generic skills and competencies - Using communication skills to work with others to supervisors Tools and Equipment - Personal Protective Equipment (PPE): safety shoes, cotton gloves - Cotton rags - Brush Worker behaviours - Team spirit - Trustworthy - Time management - Commitment
3.0. Clean APU and accessories	3.1. Clean APU structure	3.1.1. Clean dust and stains on external casing of the APU	Generic skills and competencies - Using communication skills to work with others to supervisors Tools and Equipment - Personal Protective Equipment (PPE): safety shoes, cotton gloves - Cotton rags

DUTIES	TASK	TASK ELEMENTS	ENABLERS
			- Brush Worker behavior - Team spirit - Trustworthy - Time manager - Commitment
	3.2. Clean APU accessories	3.2.1. Clean dust and stains on external surfaces of: - Starter generator - Oil cooler - FMU - Ignition exciter	Generic skills and knowledge - Using communication skills to work with others and to supervisors Tools and Equipment - Personal Protective Equipment: safety shoes, cotton gloves - Cotton rags - Brush Worker behavior - Team spirit - Trustworthy - Time manager - Commitment
4.0. Perform routine cleaning on the aircraft's piston engine and accessories	4.1. Clean aircraft's piston engine structure	4.1.1. Clean dust, moisture and stains on: - Piston engine structure - Piston engine accessories	Generic skills and knowledge - Using communication skills to work with others and to supervisors Tools and Equipment - Personal Protective Equipment: safety shoes, cotton gloves - Cotton rags - Brush Worker behavior - Team spirit - Trustworthy - Time manager - Commitment
	4.2. Clean aircraft's piston	4.2.1. Clean dust, stains and carbon	Generic skills and knowledge

DUTIES	TASK	TASK ELEMENTS	ENABLERS
	engine ignition system	deposits on piston engine spark plug	- Using communal work with others to supervisors Tools and Equipment - Personal Protective safety shoes, cover gloves - Cotton rags - Brush Worker behavior - Team spirit - Trustworthy - Time management - Commitment
	4.3. Clean aircraft's piston engine oil system	4.3.1. Clean debris on piston engine oil system screens	Generic skills and competencies - Using communal work with others to supervisors Tools and Equipment - Personal Protective safety shoes, cover gloves - Cotton rags - Brush Worker behavior - Team spirit - Trustworthy - Time management - Commitment
5.0. Perform routine cleaning of the aircraft's gas turbine engine and accessories	5.1. Clean aircraft's gas turbine engine and accessories	5.1.1. Clean dust, sand deposits, moisture and oil stains on: a. External engine b. Compressor and turbine (desalination wash)	Generic skills and competencies - Using communal work with others to supervisors Tools and Equipment - Personal Protective safety shoes, cover gloves - Cotton rags

DUTIES	TASK	TASK ELEMENTS	ENABLERS
			- Brush Worker behavior - Team spirit - Trustworthy - Time manager - Commitment
	5.2. Clean aircraft's gas turbine engine air system	5.2.1. Clean dust, stains, moisture and sticky objects on: - Engine bleed valves screens (filters) - Engine air passage ducts	Generic skills and competencies - Using communication skills to work with others and report to supervisors Tools and Equipment - Personal Protective Equipment (PPE): safety shoes, coveralls, gloves - Cotton rags - Brush Worker behavior - Team spirit - Trustworthy - Time manager - Commitment
6.0. Perform cleaning of the aircraft's propeller and accessories	6.1. Clean propellers and accessories	6.1.1. Clean dust, moisture and stains: - Propeller blade assembly - Propeller spinner assembly - Propeller hub assembly	Generic skills and competencies - Using communication skills to work with others and report to supervisors Tools and Equipment - Personal Protective Equipment (PPE): safety shoes, coveralls, gloves - Cotton rags - Brush Worker behavior - Team spirit - Trustworthy - Time manager - Commitment

