

Part 6 - Approved Maintenance Organizations



CIVIL AVIATION RULES AND STANDARDS

FEDERAL DEMOCRATIC REPUBLIC OF ETHIOPIA

PART 6 — APPROVED MAINTENANCE ORGANIZATIONS

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Part 6 - Approved Maintenance Organizations

AMENDMENTS

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01	November 2017	Definitions transferred to ECARAS Part 1
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02	November 2019	6.5.1.8 (b) & (e) added and the paragraphs rearranged
02	November 2019	IS: 6.2.1.3 new AMO Certificate template added
03	June 2021	Maintenance organization records: falsification, reproduction, alteration, or omission
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6.1 GENERAL

6.1.1.1 APPLICABILITY

- (a) Part 6 prescribes the requirements for issuing approvals to organizations for the maintenance, preventive maintenance, and modifications of aircraft and aeronautical products and prescribes the general operating rules for an Approved Maintenance Organization (AMO).

6.1.1.2 DEFINITIONS

Definitions are contained in ECARAS Part 1.

6.1.1.3 ABBREVIATIONS

- (a) The following abbreviations are used in Part 6.
 - (1) AAT – Approved Airworthiness Tag.
 - (2) AMO – Approved Maintenance Organization.
 - (3) AMT – Aviation Maintenance Technician.
 - (4) ARS – Aviation Repairman Specialist.
 - (5) ECAA – Ethiopian Civil Aviation Authority
 - (6) ECARAS – Ethiopian Civil Aviation Rules and Standards
 - (7) NDT – Non-Destructive Testing.
 - (8) PAH - Production Approval Holder.
 - (9) TSO – Technical Standard Order.

6.1.1.4 EXEMPTION AUTHORITY

- (a) The Authority may, upon consideration of the circumstances of a particular maintenance organization, issue an exemption providing relief from specified sections of this Part, provided that the Authority finds that the circumstances presented warrant the exemption and that a level of safety will be maintained equal to that provided by the rule from which the exemption is sought.
- (b) An exemption may be terminated or amended at any time by the Authority.
- (c) A request for exemption must be made in accordance with the requirements in ECARAS Part 1.
- (d) Each approved maintenance organization that receives an exemption must have a means of notifying the appropriate management, certifying staff, and personnel of the exemption.

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6.1.1.5 MAINTENANCE ORGANIZATION RECORDS: FALSIFICATION, REPRODUCTION, ALTERATION, OR OMISSION.

- (a) No person may make or cause to be made:
 - (1) Any fraudulent or intentionally false entry in:
 - (i) Any application for an approved maintenance organization certificate or rating (including in any document used in support of that application); or
 - (ii) Any record or report that is made, kept, or used to show compliance with any requirement under this part;
 - (2) Any reproduction, for fraudulent purpose, of any application (including any document used in support of that application), record, or report under this part; or
 - (3) Any alteration, for fraudulent purpose, of any application (including any document used in support of that application), record, or report under this part.
- (b) No person may, by omission, knowingly conceal or cause to be concealed, a material fact in:
 - (1) Any application for a maintenance organization certificate or rating (including in any document used in support of that application); or
 - (2) Any record or report that is made, kept, or used to show compliance with any requirement under this part.
- (c) The commission by any person of an act prohibited under paragraphs (a) or (b) of this section is a basis for any one or any combination of the following:
 - (1) Suspending or revoking the repair station certificate and any certificate, approval, or authorization issued by the ECAA and held by that person.
 - (2) A civil penalty.
 - (3) The denial of an application under this part.

6.2 CERTIFICATION OF A MAINTENANCE ORGANISATION AND CONTINUED VALIDITY

6.2.1.1 APPLICABILITY

- (a) This section prescribes the requirements for the certification of a maintenance organization and continued validity of the certificate.

6.2.1.2 GENERAL

- (a) No person may operate as an approved maintenance organization without, or in violation of, an approved maintenance organization certificate, ratings or operations specifications issued under this part.

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- (b) The certificate and operations specifications issued to an approved maintenance organization must be available on the premises for inspection by the public and the Authority.
- (c) The approval of an AMO by the Authority shall be dependent upon the applicant demonstrating compliance with the requirements of this part including the safety management requirements of subpart 6.4.1.9 of this Part.

6.2.1.3 APPROVED MAINTENANCE ORGANIZATION CERTIFICATE

- (a) The AMO certificate shall consist of two documents:-
 - (1) A one page certificate signed by the Authority; and
 - (2) A multi-page operations specifications signed by the Accountable Manager and the Authority containing the terms, conditions, and authorizations.
- (b) An approved maintenance organization may perform maintenance, preventive maintenance, or modifications on an aircraft, airframe, aircraft engine, propeller, appliance, component, or part thereof only for which it is rated and within the terms, conditions, and authorizations placed in its operations specifications
- (c) The AMO certificate shall contain the following items and be in a format as shown in IS:
 - 6.2.1.3—
 - (1) The certificate number specifically assigned to the AMO;
 - (2) The name and location (main place of business) of the AMO;
 - (3) The date of issue and period of validity;
 - (4) The ratings issued to the AMO; and
 - (5) Authority signature.
- (d) The AMO operations specifications shall contain
 - (1) The certificate number specifically assigned to the AMO;
 - (2) The class or limited ratings issued in detail, including special approvals and limitations issued;
 - (3) The date issued or revised;
 - (4) Accountable manager and Authority signatures; and
 - (5) The certificate issued to each certificated maintenance organization must be

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available in the premises for inspection by the public and the Authority.

6.2.1.4 ADVERTISING

- (a) No approved maintenance organization may advertise as an approved maintenance organization until approved maintenance organization certificate has been issued to that facility.
- (b) No approved maintenance organization may make any statement, either in writing or orally, about itself that is false or is designed to mislead any person.
- (c) Whenever the advertising of an approved maintenance organization indicates that it is certificated, the advertisement must clearly state the approved maintenance organization's certificate number.

6.2.1.5 APPLICATION FOR AN AMO CERTIFICATE

- (a) The Authority will require an applicant for approval of a maintenance organization to submit the following:-
 - (1) An application in a form and manner prescribed by the Authority, as contained in IS: 6.2.1.5;
 - (2) The Maintenance Procedures Manual in duplicate;
 - (3) A list by type, make, or model, as appropriate, of each article for which the application is made;
 - (4) An organizational chart of the maintenance organization and the names and titles of managing and certifying staff personnel;
 - (5) A description of the housing and facilities, including the physical address;
 - (6) A list of the maintenance contract by another approved maintenance organization functions, for approval by the ECAA, to be performed for the maintenance organization under
 - (7) A training program for approval by the ECAA;
 - (8) A list of all AMO certificates and ratings pertinent to those certificates issued by any contracting State other than Ethiopia;
 - (9) Documentation of the maintenance organization's Quality Management System;
 - (10) List of qualified/authorized personnel;
 - (11) Safety Management Manual; and
 - (12) Any additional information the Authority requires the applicant to submit.
- (b) The equipment, personnel, technical data, and housing and facilities required for the certificate and rating, or for an additional rating, must be in place for inspection at the time of certification or rating approval by the ECAA. However, the requirement to have the

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equipment in place at the time of initial certification or rating approval may be met if the applicant has a contract acceptable to the ECAA with another organization/person to make the equipment available to the maintenance organization at any time it is necessary when the relevant work is being performed.

- (c) In addition to meeting the other applicable requirements for a maintenance organization certificate and rating, an applicant for a maintenance organization certificate and rating located outside Ethiopia must meet the following requirements:
 - (1) The applicant must show that the repair station certificate and/or rating is necessary for maintaining or altering Ethiopian-registered aircraft and articles for use on Ethiopian-registered aircraft,
 - (2) The applicant must show that the fee prescribed by the ECAA has been paid.
- (d) An application for an additional rating, amended maintenance organization certificate, or renewal of a maintenance organization certificate must be made in a format acceptable to the ECAA. The application must include only that information necessary to substantiate the change or renewal of the certificate. The application shall be signed by the accountable manager of the AMO. If applicable, the AMO shall submit the required amendment to the Maintenance Procedures Manual to the Authority for approval.
- (e) The ECAA may deny an application for a maintenance organization certificate if ECAA finds that:
 - (1) The applicant holds a maintenance organization certificate in the process of being revoked, or previously held a maintenance organization certificate that was revoked;
 - (2) The applicant intends to fill or fills a management position with an individual who exercised control over or who held the same or a similar position with a certificate holder whose maintenance organization certificate was revoked, or is in the process of being revoked, and that individual materially contributed to the circumstances causing the revocation or causing the revocation process; or
 - (3) An individual who will have control over or substantial ownership interest in the applicant had the same or similar control or interest in a certificate holder whose maintenance organization certificate was revoked, or is in the process of being revoked, and that individual materially contributed to the circumstances causing the revocation or causing the revocation process.

6.2.1.6 ISSUANCE OF AN AMO CERTIFICATE

- (a) An applicant may be issued an AMO certificate if, after investigation, the Authority finds that the applicant:-
 - (1) Meets the applicable rules and standards for an AMO certificate, and
 - (2) Is properly and adequately equipped for the performance of maintenance of aircraft or aeronautical product for which it seeks approval
 - (3) Has paid fees and charges prescribed by the authority

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6.2.1.7 DURATION AND RENEWAL OF AMO CERTIFICATE

- (a) A certificate or rating issued to an approved maintenance organization located either inside or outside the Ethiopia is effective from the date of issue until:-
 - (1) The last day of the 12th month after the date on which it was issued;
 - (2) The approved maintenance organization surrenders the certificate; or
 - (3) The Authority suspends or revokes the certificate.
- (b) The holder of a certificate that expires or is surrendered, suspended, or revoked by the Authority must return the certificate and operations specifications to the Authority within 5 working days of expiration, surrender or receipt from the Authority of notice of suspension or revocation
- (c) An approved maintenance organization that applies for a renewal of its approved maintenance organization certificate must submit its request for renewal no later than 45 days before the approved maintenance organization's current certificate expires. If a request for renewal is not made within this period, the approved maintenance organization must follow the application procedure prescribed by the Authority.

6.2.1.8 CONTINUED VALIDITY OF APPROVAL

- (a) Unless the approval has previously been surrendered, superseded, suspended, revoked or expired by virtue of exceeding any expiration date that may be specified in the approval certificate, the continued validity of approval is dependent upon:-
 - (1) The AMO remaining in compliance with this Part;
 - (2) The Authority being granted access to the organization's facilities to determine continued compliance with this Rules and Standards; and
 - (3) The payment of any charges prescribed by the Authority.

6.2.1.9 CHANGES TO THE AMO AND CERTIFICATE AMENDMENTS

- (a) To enable the Authority to determine continued compliance with this Part, the AMO shall provide written notification to the approving Authority either prior to, or within a time period determined by the Authority to be as soon as practicable after, any of the following changes:-
 - (1) The name of the organization;
 - (2) The location of the organization;
 - (3) The housing, facilities, equipment, tools, material, procedures, work scope and

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certifying staff that could affect the AMO rating or ratings; and/or

- (4) The addition, amendment or deletion of ratings held by the AMO, whether granted by the Authority or held through an AMO certification issued by another contracting State;
 - (5) Additional locations of the organization;
 - (6) The accountable manager; or
 - (7) The list of management personnel identified as described in the Maintenance Procedures Manual.
 - (8) Items in the Maintenance Procedures Manual
- (b) The Authority will amend the AMO certificate if the AMO notifies the Authority of a change in:
- (1) Location or housing and facilities;
 - (2) Additional locations of the organization;
 - (3) Rating, including deletions;
 - (4) Name of the organization with same ownership; or
 - (4) Ownership.
 - (5) Items in the Maintenance Procedures Manual
- (c) The Authority may amend the AMO certificate if the AMO notifies the Authority of a change in:-
- (1) The accountable manager; or
 - (2) The list of management personnel identified as described in the Maintenance Procedure Manual.
 - (3) Items in the Maintenance Procedures Manual
- (d) When the Authority issues an amendment to an AMO certificate because of new ownership of the AMO, the Authority will assign a new certificate number to the amended AMO certificate.
- (e) The Authority may:-
- (1) Prescribe, in writing, the conditions under which the AMO may continue to operate during any period of implementation of the changes noted in subparagraph (a); and
 - (2) Hold the AMO certificate in abeyance if the Authority determines that approval of the AMO certificate should be delayed; the Authority will notify the AMO certificate holder, in writing, of the reasons for any such delay.
- (f) If changes are made by the AMO to the items listed in subparagraph (a) without notification

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to the Authority and amendment of the AMO certificate by the Authority, the AMO certificate may be suspended, or revoked, by the Authority.

6.2.1.10 RATINGS OF THE AMO

- (a) The following ratings are issued under this Subpart:-
- (1) Airframe ratings.
 - (i) Class A1: Large Aeroplanes - Aeroplanes with maximum take-off mass over 5700kg;
 - (ii) Class A2: Small Aeroplanes — Aeroplanes with maximum take-off mass up to 5700kg;
 - (iii) Class A3: Helicopters.
 - (iv) Class A4: other kind of aircraft (such as glider, balloon, airship, light sport aircraft).
 - (2) Power plant ratings.
 - (i) Class B1: Reciprocating Engines.
 - (ii) Class B2: Turbine engines.
 - (iii) Class B3: Auxiliary Power Unit (APU).
 - (3) Propeller ratings.
 - (i) Class 1: Fixed-pitch and ground-adjustable propellers of wood, metal or composite construction.
 - (ii) Class 2: Other propellers, by make.
 - (4) Avionics/radio ratings.
 - (i) Class 1: Communication equipment: Radio transmitting equipment or receiving equipment, or both, used in aircraft to send or receive communications, regardless of carrier frequency or type of modulation used; including auxiliary and related aircraft interphone systems, amplifier systems, electrical or electronic inter-crew signaling devices, and similar equipment; but not including equipment used for navigation of the aircraft or as an aid to navigation, equipment for measuring altitude or terrain clearance, other measuring equipment operated on radio or radar principles, or mechanical, electrical, gyroscopic, or electronic instruments that are a part of communications radio equipment.
 - (ii) Class 2: Navigational equipment: A radio system used in aircraft for en-route, approach navigation, to include the flight director system, except

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equipment operated on radar or pulsed radio frequency principles, but not including equipment for measuring altitude or terrain clearance or other distance measuring equipment operated on pulsed radio frequency principles.

- (iii) Class 3: Pulsed equipment: Any aircraft electronic system operated on pulsed radio frequency principles.
- (5) Instrument ratings.
 - (i) Class 1: Mechanical: Any diaphragm, bourdon tube, aneroid, optical, or mechanically driven centrifugal instrument that is used on aircraft or to operate aircraft, including tachometers, airspeed indicators, pressure gauges, drift sights, magnetic compasses, altimeters, or similar mechanical instruments.
 - (ii) Class 2: Electrical: Any self-synchronous and electrical indicating instruments and systems, including remote indicating instruments, cylinder head temperature gauges, or similar electrical instruments.
 - (iii) Class 3: Gyroscopic: Any instrument or system using gyroscopic principles and motivated by air pressure or electrical energy, including automatic pilot control units, turn and bank indicators, directional gyros, and their parts, and flux gate and gyrosyn compasses.
 - (iv) Class 4: Electronic: Any instruments whose operation depends on electron tubes, transistors, electronic displays, or similar devices including capacitance type quantity gauges, system amplifiers, and engine analyzers.
- (6) Accessory ratings.
 - (i) Class 1: Mechanical. The accessories that depend on friction, hydraulics, mechanical linkage, or pneumatic pressure for operation, including aircraft brakes, mechanically driven pumps, carburetors, aircraft wheel assemblies, shock absorber struts and hydraulic servo units.
 - (ii) Class 2: Electrical. The accessories that depend on electrical energy for operation, and generators, including starters, voltage regulators, electric motors, electrically driven fuel pumps, magnetos, or similar electrical accessories.
 - (iii) Class 3: Electronic. The accessories that depend on the use of an electron tube transistors, or similar device, including supercharger, temperature, air conditioning controls, or similar electronic controls.

6.2.1.11 AMO LIMITED RATINGS.

- (a) Whenever the Authority finds it appropriate, it may issue a limited rating to an AMO that

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maintains or alters only a particular type of airframe, power plant, propeller, radio, instrument, or accessory, or parts thereof, or performs only specialized maintenance requiring equipment and skills not ordinarily found in an AMO. Such a rating may be limited to a specific model aircraft, engine, or constituent part, or to any number of parts made by a particular manufacturer.

(b) Limited ratings are issued for:-

- (1) Airframes of a particular make and model;
- (2) Power plants of a particular make and model
- (3) Propellers of a particular make and model;
- (4) Radio equipment of a particular make and model;
- (5) Instruments of a particular make and model;
- (6) Accessories of a particular make and model;
- (7) Landing gear components;
- (8) Floats, by make;
- (9) Nondestructive inspection, testing, and processing;
- (10) Emergency equipment;
- (11) Rotor blades, by make and model;
- (12) Aircraft fabric work; and
- (13) Any other purpose for which the Authority finds the applicant's request appropriate.

(c) Specialized service ratings. A specialized service rating may be issued to a maintenance organization to perform specific maintenance or processes. The operating specifications of the approved maintenance organization must identify the specification used in performing that specialized service. The specification may be:-

- (1) A civil or military specification that is currently used by industry and approved by the Authority; or
- (2) A specification developed by the approved maintenance organization and approved by the Authority.

6.2.1.12 MAINTENANCE PROCEDURES AND QUALITY ASSURANCE SYSTEM

(a) The AMO shall establish maintenance quality procedures acceptable to the Authority to ensure

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- good maintenance practices and compliance with all relevant requirements of this Rules and Standards by providing a system of inspection to ensure that all maintenance is properly performed such that aircraft and aeronautical products may be properly released to service.
- (b) The Approved Maintenance Organization shall ensure compliance with paragraph (a) by either:
 - (1) establishing an independent quality assurance system to monitor compliance with and adequacy of the procedures; or
 - (2) Providing a system of inspection to ensure that all maintenance is properly performed.
 - (c) The AMO shall establish and maintain a quality system acceptable to the ECAA that ensures the airworthiness of the articles on which the maintenance organization or any of its contractors performs maintenance, preventive maintenance, or alterations.
 - (d) The AMO personnel must follow the quality system when performing maintenance, preventive maintenance, or alterations under the maintenance organization certificate and operations specifications.
 - (e) The AMO shall designate a quality manager to monitor compliance with all relevant requirements of this Part, and adequacy of, procedures required to ensure safe maintenance practices and airworthy aircraft. Compliance monitoring shall include a feedback system to the accountable manager to ensure corrective action as necessary.
 - (f) The quality system, and the quality manager, shall be acceptable to the Authority.
 - (g) Personnel assigned to quality control and assurance duties shall be:
 - (1) Sufficiently experienced in the AMO's systems and procedures and shall have technical knowledge of the aircraft being maintained so as to enable them to perform their duties satisfactorily;
 - (2) Experienced in the techniques of quality control and assurance or be appropriately trained before taking up their duties;
 - (3) Given clearly defined terms of reference and responsibility within the organization; and
 - (4) Licensed in accordance with ECARAS Part 2, if they are required to sign for proper completion of maintenance tasks under the quality control system.
 - (h) Each AMO shall ensure that the quality system includes a quality assurance programme that contains procedures designed to monitor compliance with required aircraft and aircraft component standards and adequacy of the procedures to ensure that such procedures invoke good maintenance practices and airworthy aircraft and aircraft components.
 - (i) The quality assurance system shall include a procedure to initially qualify and periodically perform audits on persons performing work on behalf of the AMO.
 - (j) The department responsible for quality control and assurance shall establish procedures to ensure that personnel performing quality audit in accordance with the audit programme are not involved in the performance of the tasks or activities to be audited.
 - (k) The quality system shall include a feedback system to the person or group of persons specified in 6.4.1.1, and ultimately to the accountable manager to ensure, as necessary, proper and timely corrective action is taken in response to reports resulting from the independent audits. Such a system shall be acceptable to the Authority.

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- (l) The maintenance inspection procedures shall cover all aspects of maintenance activity and describe standards to which the AMO intends to work. The aircraft/aircraft component design standards, AMO standards, and aircraft operator standards must be taken into account.
- (m) The AMO's quality system shall be sufficient to review all maintenance procedures, as described in the Maintenance Control Manual and the Maintenance Procedures Manual, in accordance with an approved program once a year.
- (n) The AMO's quality system shall indicate when audits are due, when completed, and establish a system of audit reports, which can be seen by visiting Authority staff on request. The audit system shall clearly establish a means by which audit reports containing observations about non-compliance or poor standards are communicated to the accountable manager.
- (o) If the AMO is a small organization, the independent audit part of the quality system may be contracted to another organization approved under this part or a person with appropriate technical knowledge and proven satisfactory audit experience such as ISO 9000 qualification.
- (p) Where the AMO is part of an AOC under Part 9, the AOC holder's quality management system may be combined with the requirements of an AMO and submitted for acceptance to the Authority.
- (q) An AMO using an independent quality assurance system shall include the audit procedures.
- (r) The AMO must prepare and keep current a quality manual in a format acceptable to ECAA that includes the following:
 - (1) A description of the system and procedures used for—
 - (i) Inspecting incoming raw materials to ensure acceptable quality;
 - (ii) Performing preliminary inspection of all articles that are maintained;
 - (iii) Inspecting all articles that have been involved in an accident for hidden damage before maintenance, preventive maintenance, or alteration is performed;
 - (iv) Establishing and maintaining proficiency of inspection personnel;
 - (v) Establishing and maintaining current technical data for maintaining articles;
 - (vi) Qualifying and surveilling noncertificated persons who perform maintenance, prevention maintenance, or alterations for the maintenance organization;
 - (vii) Performing final inspection and return to service of maintained articles;
 - (viii) Calibrating measuring and test equipment used in maintaining articles, including the intervals at which the equipment will be calibrated; and
 - (ix) Taking corrective action on deficiencies;

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- (2) References, where applicable, to the manufacturer's inspection standards for a particular article, including reference to any data specified by that manufacturer;
 - (3) A sample of the inspection and maintenance forms and instructions for completing such forms or a reference to a separate forms manual; and
 - (4) Procedures for revising and submitting for approval to ECAA the quality manual required under this section.
- (s) Each AMO shall describe the quality system in relevant documentation as outlined in IS: 6.2.1.12.

6.2.1.13 SUSPENSION OR REVOCATION

The Authority may suspend or revoke an AMO certificate if it is established that a certificate holder has not met, or no longer meets the requirements of Part 6.

6.2.1.14 LOCATION OF THE AMO

- (a) Principal place of business. An applicant for, or holder of, a certificated AMO under this Part shall establish and maintain a principal place of business office that is physically located at the address shown on its certificate.
- (b) Additional fixed locations. An AMO may have additional fixed locations without certifying each facility as a stand-alone AMO, which may be approved by the Authority provided that –
 - (1) All of the facilities are localized and within a defined area, and
 - (2) All locations operate under the approval of the AMO certificate and operations specifications.
- (c) Foreign locations of AMOs. An AMO approved by the Authority may be located in a country outside Ethiopia and is subject to all the applicable requirements of this Part.

6.2.1.15 SATELLITE APPROVED MAINTENANCE ORGANIZATIONS

- (a) An approved maintenance organization under the managerial control of another approved maintenance organization may operate as a satellite approved maintenance organization with its own certificate issued by the ECAA. A satellite approved maintenance organization:
 - (1) May not hold a rating not held by the certificated approved maintenance organization with managerial control;
 - (2) Must meet the requirements for each rating it holds;
 - (3) Must submit an approved maintenance procedures manual acceptable to the ECAA; and
 - (4) Must submit a quality manual acceptable to the ECAA

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- (b) Unless ECAA indicates otherwise, personnel and equipment from the approved maintenance organization with managerial control and from each of the satellite approved maintenance organizations may be shared. However, certifying/inspection personnel must be designated for each satellite approved maintenance organization and available at the satellite approved maintenance organization any time a determination of airworthiness or return to service is made. In other circumstances, inspection personnel may be away from the premises but must be available by telephone, radio, or other electronic means.
- (c) A satellite approved maintenance organization may not be located in a country other than the domicile country of the approved maintenance organization with managerial control.

6.2.1.16 LINE MAINTENANCE

- (a) Line maintenance is a maintenance carried out on the apron, during turnarounds, while the aircraft remains in its operating environment. Usually line maintenance is defined as any maintenance tasks that can be performed outside of a hangar, under open skies. Tasks related to line maintenance are relatively straightforward, and often involve routine in-service inspections, daily check actions, trouble-shooting and rectifications. Components designated as Line Replaceable Units (LRUs) can be replaced during this time. Line maintenance is usually limited by the availability of ground support equipment.
- (b) Line maintenance shall be understood as any maintenance that is carried out before flight to ensure that the aircraft is fit for the intended flight.
 - (1) Line maintenance may include:
 - (i) Trouble shooting.
 - (ii) Defect rectification.
 - (iii) deferral of malfunctions and defects according to the operator's Minimum Equipment List/Configuration Deviation List of the particular type of aircraft.
 - (iv) Line replaceable units (LRU) replacement with use of external test equipment if required. Component replacement may include components such as engines and propellers.
 - (v) Scheduled maintenance and/or checks including visual inspections that will detect obvious unsatisfactory conditions/discrepancies but do not require extensive in depth inspection. It may also include internal structure, systems and powerplant items which are visible through quick opening access panels/doors.
 - (vi) Minor repairs and modifications which do not require extensive disassembly and can be accomplished by simple means.

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- (2) For temporary or occasional cases (ADs, SBs), the Authority may accept base maintenance tasks to be performed by a line maintenance organization provided all requirements are fulfilled as required by the Authority.
- (3) Any maintenance tasks falling outside the criteria that are given above for line maintenance are considered to be base maintenance.
- (4) Aircraft maintained in accordance with 'progressive' type programmes shall be individually assessed in relation to this paragraph. In principle, the decision to allow some 'progressive' checks to be carried out shall be determined by the assessment that all tasks within the particular check can be carried out safely to the required standards at the designated line maintenance station.
- (c) For the purpose of these Rules and Standards, the following services fall outside the scope of line maintenance so defined:
 - (1) Civil aircraft arrival and departure marshaling, parking, pushing out, towing, wheel chocking, and fitting and removal of the protection devices;
 - (2) Connect ground power and pneumatic supplies; water servicing (fill and drain); fuelling and de-fuelling; air and oxygen charging;
 - (3) Necessary cleaning; de-icing and removal of snow and frost;
 - (4) Other necessary servicing work.
- (d) For the small size maintenance organization or the maintenance organization that only provides specialized service or line maintenance service, the posts and responsibilities of Accountable Manager and Quality Manager may be taken by one person.
- (e) The line maintenance work of the operator's maintenance organization at any other locations other than the main base may be partially or entirely contracted out to the maintenance organization with the approval from ECAA provided that the following requirements are fulfilled:
 - (1) The contracted maintenance organization shall operate under the control of the quality system of the operator's maintenance organization, and the operator shall take the full responsibility for the line maintenance work;
 - (2) The operator shall have a specific maintenance agreement/contract with the contracted maintenance organization, and the following information shall be included at least:
 - (i) The technical documents and data provided by the operator as well as the relevant management procedure and requirement thereof;

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- (ii) The tools, equipment and material provided by the operator as well as the management requirement thereof, including the borrowed tools, equipment and material;
- (iii) The training provided by the operator;
- (iv) The scope of work contracted by the operator and the authorizations so granted by the operator;
- (v) The means of recording and reporting; and
- (vi) Other relevant specifications.

6.3 HOUSING, FACILITIES, EQUIPMENT, MATERIALS AND DATA

6.3.1.1 GENERAL

- (a) An approved maintenance organization must provide, housing, facilities, equipment, materials, and data in quantity and quality that meet the standards required for the issuance of the certificate and ratings that the approved maintenance organization holds.

6.3.1.2 HOUSING AND FACILITY REQUIREMENTS

- (a) Housing for the facilities, equipment, materials, and personnel shall be provided appropriate for all planned work ensuring, in particular, protection from weather.
- (b) All work environments shall be appropriate for the task carried out and shall not impair the effectiveness of personnel.
- (c) Office accommodation shall be appropriate for the management of planned work including, in particular, the management of quality, planning, and technical records.
- (d) Specialized workshops and bays shall be segregated, as appropriate, to ensure that environmental and work area contamination is unlikely to occur.
- (e) Storage facilities shall be provided for parts, equipment, tools, and material.
- (f) A maintenance organization shall ensure that storage conditions provide segregation of serviceable from unserviceable parts; and provide adequate security and prevent deterioration of, and damage to, stored items such as parts, equipment, tools and material.
- (g) An AMO with an airframe rating shall provide suitable permanent housing to enclose the largest type and model of aircraft listed on its operations specifications.
- (h) An AMO may perform maintenance, preventive maintenance, or alterations on articles outside of its housing if it provides suitable facilities that are acceptable by the Authority.
- (i) Aircraft maintenance staff shall be provided with an area where they may study maintenance instructions and complete maintenance records in a proper manner.

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- (i) See IS: 6.3.1.2 for detailed requirements pertaining to housing and facilities.

6.3.1.3 EQUIPMENT, TOOLS, MATERIAL

- (a) The AMO shall have available and use the necessary equipment, tools and material to perform the approved scope of work and these items shall be under full control of the AMO.
- (b) Equipment and tools must be permanently available, except in the case of any tool or equipment that is so infrequently used that its permanent availability is not necessary. Such cases shall be detailed in the organization's maintenance procedures manual.
- (c) The Authority may exempt an AMO from possessing specific tools and equipment for maintenance or repair of an aircraft or aeronautical product specified in the AMO's approval, if these items can be acquired temporarily, by prior arrangement, and be under full control of the AMO when needed to perform required maintenance or repairs.
- (d) Where the manufacturer specifies a particular tool or equipment, the maintenance organization shall use that tool or equipment, unless the use of alternative tooling or equipment is agreed by the ECAA via procedures specified in the organization's maintenance procedures manual.
- (e) The AMO shall ensure that all tools, equipment and particularly test equipment, as appropriate, used for product acceptance and/or for making a finding of airworthiness are controlled and calibrated according to an officially recognized standard at a frequency to ensure serviceability and accuracy.
- (f) The AMO shall keep all records of calibrations and traceability to the standard used for calibration.
- (g) Once the applicant for approval has determined the intended scope of approval for consideration by ECAA, it will be mandatory to show that all tools and equipment as specified in the maintenance data can be made available when needed. All such tools and equipment that require to be controlled in terms of servicing or calibration by virtue of being necessary to measure specified dimensions and torque figures etc., shall be clearly identified and listed in a control register including any personal tools and equipment that the organization agrees can be used.
- (h) The control of these tools and equipment requires that the organization has a procedure to inspect/service and, where appropriate, calibrate such items on a regular basis and indicate to users that the item is within any inspection or service or calibration time-limit. A clear system of labelling all tooling, equipment and test equipment is therefore necessary giving information on when the next inspection or service or calibration is due and if the item is unserviceable for any other reason where it may not be obvious. A register shall be maintained for all precision tooling and equipment together with a record of calibrations and standards used.
- (i) Inspection, service or calibration on a regular basis shall be in accordance with the equipment manufacturers' instructions except where the organization can show by results that a different time period is appropriate in a particular case.

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- (j) In this context officially recognized standard means those standards established or published by an official body whether having legal personality or not, which are widely recognized by the air transport sector as constituting good practice or any other standard accepted by the ECAA.
- (k) The IS: 6.3.1.3 contains detailed requirements pertaining to tools, equipment, and test equipment.

6.4 ADMINISTRATION

6.4.1.1 PERSONNEL REQUIREMENTS

- (a) The maintenance organization shall appoint an accountable manager who, irrespective of other functions, has corporate authority for ensuring that all maintenance required by the customer can be financed and carried out to the standard required by this Rules and Standards. With regard to the accountable manager, it is normally intended to mean the chief executive officer of the approved maintenance organization, who by virtue of position has overall (including in particular financial) responsibility for running the organization. The accountable manager may be the accountable manager for more than one organization and is not required to be necessarily knowledgeable on technical matters as the maintenance organization Maintenance Procedures Manual defines the maintenance standards. When the accountable manager is not the chief executive officer the ECAA will need to be assured that such an accountable manager has direct access to chief executive officer and has a sufficiency of 'maintenance funding' allocation. The accountable manager shall:
 - (1) Ensure that all necessary resources are available to accomplish maintenance in accordance with applicable standards to support the organization approval;
 - (2) Establish and promote the safety and quality policy specified in this Rules and Standards; and
 - (3) Demonstrate a basic understanding of this Rules and Standards.
- (b) The maintenance organization shall nominate a person or group of persons, whose responsibilities include ensuring that the organization complies with this Rules and Standards. Such person(s) shall ultimately be responsible to the accountable manager.
 - (1) The person or persons nominated shall represent the maintenance management structure of the organization and be responsible for all functions specified in this Rules and Standards
 - (2) The person or persons nominated shall be identified and their credentials submitted in a form and manner established by the ECAA.
 - (3) The person or persons nominated shall be able to demonstrate relevant knowledge, background and satisfactory experience related to aircraft or component maintenance and demonstrate a working knowledge of Civil Aviation Rules and Standards.

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- (4) Procedures shall make clear who deputizes for any particular person in the case of lengthy absence of the said person.
- (c) The organization shall have, dependent upon the extent of approval, a base maintenance manager, a line maintenance manager, a workshop manager and a quality manager, all of whom shall report to the accountable manager except in small Part-6 organization where anyone manager may also be the accountable manager, as determined by the authority, he/she may also be the line maintenance manager or the workshop manager.
- (d) The person or persons nominated as manager(s) shall represent the maintenance management structure of the AMO, and be responsible for all functions specified in this Part.
- (e) Nominated managers shall be directly responsible to an accountable manager who shall be acceptable to the Authority.
- (f) The AMO shall employ sufficient personnel to plan, perform, supervise and inspect and release the work in accordance with the approval.
- (g) The maintenance organization shall have a maintenance man-hour plan showing that it has sufficient staff to plan, perform, supervise, inspect and quality monitor the organization in accordance with the approval. In addition the organization shall have a procedure to reassess work intended to be carried out when actual staff availability is less than the planned staffing level for any particular work shift or period.
- (h) The maintenance organization shall establish and control the competence of personnel involved in any maintenance, management and/or quality assurance audits in accordance with a procedure and to a standard acceptable to the Ethiopian Civil Aviation Authority. In addition to the necessary expertise related to the job function, competence must include an understanding of the application of human factors and human performance issues appropriate to that person's function in the organization.

Note: Human factors principles means principles which apply to aeronautical design, certification, training, operations and maintenance and which seek safe interface between the human and other system components by proper consideration of human performance. Human performance means human capabilities and limitations which have an impact on the safety and efficiency of aeronautical operations.

- (i) Each supervisor in the AMO shall hold an AMT license issued in accordance with Part 2, Personnel Licensing.
- (j) The person signing maintenance release or an approval for return to service shall be qualified in accordance with Part 2, as appropriate to the work performed and shall be acceptable to the Authority.
- (k) An AMO that uses Aviation Repairman Specialists (ARS) shall ensure that each ARS is employed by the AMO and is licensed in accordance with Part 2.

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- (l) If the person signing the maintenance release is a non-licensed person, the person shall meet the qualification requirements specified in ECARAS Part 2 to sign a maintenance release.
- (m) The maintenance personnel and the certifying staff shall meet the qualification requirements and receive initial, recurrent, and specialized training appropriate to their assigned tasks and responsibilities in accordance with a program acceptable to the Authority. The training program established by the AMO shall include training in knowledge and skills related to human performance, including co-ordination with other maintenance personnel and flight crew.
- (n) Each approved maintenance organization must ensure that it has a sufficient number of employees with the training or knowledge and experience in the performance of maintenance, preventive maintenance, or alterations authorized by the approved maintenance organization certificate and operations specifications to ensure all work is performed in accordance with all applicable Ethiopian Civil Aviation Rules & Standards.
- (o) The approved maintenance organization shall ensure that personnel who carry out and/or control a continued airworthiness non-destructive test of aircraft structures and/or components are appropriately qualified for the particular non-destructive test in accordance with the European or equivalent Standard which is acceptable to ECAA. Personnel who carry out any other specialized task shall be appropriately qualified in accordance with officially recognized Standards.
- (p) See IS: 6.4.1.1 for detailed personnel requirements.

6.4.1.2 CERTIFYING STAFF AND SUPPORT STAFF

- (a) The approved maintenance organization shall ensure that certifying staff and support staff have an adequate understanding of the relevant aircraft and/or components to be maintained together with the associated organization procedures. In the case of certifying staff, this must be accomplished before the issue or re-issue of the certification authorization.
 - (1) "Support Staff" means those staff holding aircraft maintenance license in category B1, B2 and/or B3 with the appropriate type ratings, working in base maintenance environment while not necessarily holding certification authorization.
 - (2) "Relevant aircraft and/or components" means those aircraft or components specified in the particular certification authorization.
 - (3) "Certification authorization" means the Authorization issued to certifying staff by the organization and which specifies the fact that they may sign certificates of release to service within the limitations stated in such Authorization on behalf of the approved organization.

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- (b) The approved maintenance organization may only issue a certification Authorization to certifying staff in relation to the basic categories or subcategories and any type rating listed on the aircraft maintenance license as required by ECARAS Part 2, subject to the license remaining valid throughout the validity period of the Authorization and the certifying staff remaining in compliance with ECARAS Part 2.
- (c) The approved maintenance organization shall ensure that all certifying staff and support staff are involved in at least six months of actual relevant aircraft or component maintenance experience in any consecutive two year period. For the purpose of this paragraph involved in actual relevant aircraft or component 'maintenance' means that the person has worked in an aircraft or component maintenance environment and has either exercised the privileges of the certification Authorization and/or has actually carried out maintenance on at least some of the aircraft type systems specified in the particular certification authorization.
- (d) The approved maintenance organization shall ensure that all certifying staff and support staff receive sufficient continuation training in each two year period to ensure that such staff have up-to-date knowledge of relevant technology, organization procedures and human factor issues.
- (e) The approved maintenance organization shall establish a programme for continuation training for certifying staff and support staff, including a procedure to ensure compliance with the relevant requirements as the basis for issuing certification authorizations under this Rules and Standards to certifying staff, and a procedure to ensure compliance with ECARAS Part 2.
- (f) The approved maintenance organization shall assess all prospective certifying staff for their competence, qualification and capability to carry out their intended certifying duties in accordance with a procedure as specified in the Maintenance Procedures Manual prior to the issue or re-issue of a certification Authorization under this regulation.
- (g) When the conditions of paragraphs (a), (b), (d), (f) and, where applicable, paragraph (c) have been fulfilled by the certifying staff, the organization shall issue a certification Authorization that clearly specifies the scope and limits of such authorization. Continued validity of the certification Authorization is dependent upon continued compliance with paragraphs (a), (b), (d), and where applicable, paragraph (c).
- (h) The certification Authorization must be in a style that makes its scope clear to the certifying staff and any authorized person who may require examining the authorization. Where codes are used to define scope, the organization shall make a code translation readily available. 'Authorized person' means the officials of the Authority who has responsibility for the oversight of the maintained aircraft or component.
- (i) The person responsible for the quality system shall also remain responsible on behalf of the organization for issuing certification authorizations to certifying staff. Such person may nominate other persons to actually issue or revoke the certification authorizations in accordance with a procedure as specified in the Maintenance Procedures Manual.

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- (j) The approved maintenance organization shall maintain a record of all certifying staff and support staff, which shall contain:
 - (1) The details of any aircraft maintenance license held under ECARAS Part 2; and
 - (2) All relevant training completed; and
 - (3) The scope of the certification authorizations issued, where relevant, and
 - (4) Particulars of staff with limited or one-off certification authorizations.

The organization shall retain the record for at least three years after the staff referred in this paragraph have ceased employment with the organization or as soon as the Authorization has been withdrawn. In addition, upon request, the maintenance organization shall furnish staff referred to in this paragraph with a copy of their personal record on leaving the organization. The staff referred to in this paragraph shall be given access on request to their personal records as detailed above.

- (k) The approved maintenance organization shall provide certifying staff with a copy of their certification Authorization in either a documented or electronic format.
- (l) Certifying staff shall produce their certification Authorization to any authorized person within 24 hours.
- (m) The minimum age for certifying staff and support staff is 21 years.
- (n) The holder of a category A aircraft maintenance license may only exercise certification privileges on a specific aircraft type following the satisfactory completion of the relevant category A aircraft task training carried out by an organization appropriately approved in accordance with ECARAS Part 6 or ECARAS Part 3. This training shall include practical hands on training and theoretical training as appropriate for each task authorized. Satisfactory completion of training shall be demonstrated by an examination or by workplace assessment carried out by the organization.
- (o) The holder of a category B2 aircraft maintenance license may only exercise the certification privileges described in ECARAS Part 2 following the satisfactory completion of:
 - (1) The relevant category A aircraft task training, and
 - (2) 6 months of documented practical experience covering the scope of the authorization that will be issued. The task training shall include practical hands on training and theoretical training as appropriate for each task authorized. Satisfactory completion of training shall be demonstrated by an examination or by workplace assessment. Task training and examination/assessment shall be carried out by the approved maintenance organization issuing the certifying staff authorization. The practical experience shall be also obtained within such maintenance organization.

NOTE: The certification privileges are limited to the rating already endorsed in the category B2 aircraft maintenance license.

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- (p) Holding ECAA license with the relevant type/group rating does not mean by itself that the holder is qualified to be authorized as certifying staff and/or support staff. The organization is responsible for assessing the competence of the holder for the scope of maintenance to be authorized.
- (q) The sentence “the organization shall ensure that certifying staff and support staff have an adequate understanding of the relevant aircraft and/or components to be maintained together with the associated organization procedures” implies that the person has received training and has been successfully assessed on:
 - (1) the type of aircraft or component;
 - (2) the differences on:
 - (i) the particular model/variant;
 - (ii) the particular configuration.
- (r) The organization shall specifically ensure that the individual competencies have been established with regard to:
 - (1) Relevant knowledge, skills and experience in the product type and configuration to be maintained, taking into account the differences between the generic aircraft type rating training that the person received and the specific configuration of the aircraft to be maintained.
 - (2) Appropriate attitude towards safety and observance of procedures.
 - (3) Knowledge of the associated organization and operator procedures (i.e. handling and identification of components, MEL use, Technical Log use, independent checks, etc.)
- (s) Some special maintenance tasks may require additional specific training and experience, including but not limited to:
 - (1) In-depth troubleshooting;
 - (2) Very specific adjustment or test procedures;
 - (3) Rigging;
 - (4) engine run-up, starting and operating the engines, checking engine performance characteristics, normal and emergency engine operation, associated safety precautions and procedures;
 - (5) Extensive structural/system inspection and repair;
 - (6) Other specialized maintenance required by the maintenance programme.

For engine run-up training, simulators and/or real aircraft shall be used.

- (t) The satisfactory assessment of the competence shall be conducted in accordance with a procedure approved by ECAA in the organization’s Maintenance Procedures Manual.
- (u) The approved maintenance organization shall hold copies of all documents that attest the competence and recent experience for the period required by this Civil Aviation Rules and Standards.

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- (v) Before a certifying staff authorization can be extended to include coverage of aircraft of a type already held by the certifying staff but with some differences the holder shall undergo differences training that meet the following:
 - (1) All type training including differences courses intended to extend license coverage to include additional engine type shall be carried out in accordance with ECARAS Part 2 and ECARAS Part 3.
 - (2) All model/variant differences training (excluding new engine type) may be carried out either by the ECARAS Part-3 training organization or the ECARAS Part-6 approved maintenance organization provided it is conducted in accordance with an approved procedure contained in the Approved Training Organization's Procedure Manual or the Approved Maintenance Organization's Maintenance Procedures Manual.
 - (3) Self-study technique using CD, online self-training or any other means not complying with the standards defined in the Approved Maintenance Organization's Maintenance Procedures Manual or Training Program Manual is not acceptable.

- (w) The approved maintenance organization shall issue the certification Authorization when satisfied that compliance has been established with the appropriate paragraphs of ECARAS Part-6 and ECARAS Part-2. In granting the certification authorization the maintenance organization approved under ECARAS Part - 6 needs to be satisfied that the person holds a valid aircraft maintenance license.

- (x) Continuation training is a two way process to ensure that certifying staff remain current in terms of procedures, human factors and technical knowledge and that the organization receives feedback on the adequacy of its procedures and maintenance instructions. Due to the interactive nature of this training, consideration shall be given to the possibility that such training has the involvement of the quality department to ensure that feedback is actioned. Alternatively, there must be a procedure to ensure that feedback is formally passed from the training department to the quality department to initiate action.
 - (1) Continuation training must cover changes in relevant requirements such as ECARAS Part-6, changes in organization procedures and the modification standard of the products being maintained plus human factor issues identified from any internal or external analysis of incidents. It must also address instances where staff failed to follow procedures and the reasons why particular procedures are not always followed. In many cases the continuation training will reinforce the need to follow procedures and ensure that incomplete or incorrect procedures are identified to the company in order that they can be corrected. This does not preclude the possible need to carry out a quality audit of such procedures.
 - (2) Continuation training shall be of sufficient duration in each 2 year period and may be split into a number of separate elements. Such training needs to keep certifying staff updated in terms of relevant technology, procedures and human factors issues which means it is one part of ensuring quality. Therefore sufficient duration shall be related

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to relevant quality audit findings and other internal/external sources of information available to the organization on human errors in maintenance. This means that in the case of an organization that maintains aircraft with few relevant quality audit findings, continuation training could be limited to days rather than weeks, whereas a similar organization with a number of relevant quality audit findings, such training may take several weeks. For an organization that maintains aircraft components, the duration of continuation training would follow the same philosophy but shall be scaled down to reflect the more limited nature of the activity. For example certifying staff who release hydraulic pumps may only require a few hours of continuation training whereas those who release turbine engine may only require a few days of such training. The content of continuation training shall be related to relevant quality audit findings and it is recommended that such training is reviewed at least once in every 24 month period.

- (3) The elements, general content and length of such training shall be specified in the maintenance procedures manual unless such training is undertaken by an organization approved under ECARAS Part-3 when such details may be specified under the approval and cross referenced in the maintenance procedures manual.
- (y) The training programme for continuation training shall list all certifying staff and support staff and when training will take place, the elements of such training and an indication that it was carried out reasonably on time as planned. Such information shall subsequently be transferred to the certifying staff and support staff record.
- (z) The approved maintenance organization shall assess all prospective certifying staff and support staff for competence related to their intended duties.
- (1) The following minimum information as applicable shall be kept on record in respect of each certifying staff and support person:
 - (i) Name
 - (ii) Date of Birth
 - (iii) Basic Training
 - (iv) Type Training
 - (v) Continuation Training
 - (vi) Experience
 - (vii) Qualifications relevant to the authorization
 - (viii) Scope of the authorization
 - (ix) Date of first issue of the authorization
 - (x) If appropriate - expiry date of the authorization
 - (xi) Identification Number of the authorization
- (2) The record may be kept in any format but shall be controlled by the organization's quality department. This does not mean that the quality department should run the record system.

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- (3) Persons authorized to access the system shall be maintained at a minimum to ensure that records cannot be altered in an unauthorized manner or that such confidential records become accessible to unauthorized persons.
- (4) The authority is an authorized person when investigating the records system for initial and continued approval or when the ECAA has cause to doubt the competence of a particular person.
- (5) When issuing category A certifying staff authorization, the approved maintenance organization shall ensure that the task training received by this person covers all the tasks to be authorized.

6.4.1.3 INDOCTRINATION, INITIAL, RECURRENT, SPECIALISED AND REMEDIAL TRAINING

- (a) An AMO shall have an employee training program approved by the Authority that consists of indoctrination, initial, recurrent training, specialized and remedial training. An applicant for an approved maintenance organization certificate must submit a training program for approval by the ECAA.
- (b) An AMO shall develop and update its training program based on the job tasks associated with its scope of operating authority and capabilities.
- (c) An AMO is required to ensure that all maintenance personnel receive initial and continuation training appropriate to their assigned tasks and responsibilities. Training provided to personnel engaged in aircraft maintenance needs to keep track with the constant state of change of processes and technology in the industry.
- (d) The training program shall ensure that each employee assigned to perform maintenance, preventive maintenance, or alterations, and inspection functions is capable of performing the assigned task.
- (e) Consideration of policies for initial and refresher training shall be given to the needs of mechanics, quality control and quality assurance personnel, supervisors, planners and technical records personnel as well as of those persons signing a maintenance release.
- (f) An AMO shall note that training need not be limited to providing knowledge of the aeronautical products which are maintained by the organization. There is a need to ensure that all personnel are given training on the company procedures associated with the approval. Where the organization utilizes specialized techniques such as non-destructive inspection, welding or novel methods of repair, appropriate training shall be provided.
- (g) Since one component of an SMS framework is safety promotion, an element of which is training and education, the organization shall provide current information and training related to safety issues relevant to the specific operations and operational units of the organization.

The safety training shall consist of:

- (1) initial job-specific training including general safety;

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- (2) indoctrination/initial training incorporating SMS, including human and organizational factors; and
 - (3) Recurrent training.
- (h) An AMO shall submit revisions of its training program to the Authority for approval.
 - (i) An AMO shall document, in a form and manner acceptable to the Authority, the individual employee training required under this section. These training records must be retained for a minimum of two years.
 - (j) An AMO training program shall meet the detailed requirements contained in IS: 6.4.1.3.

6.4.1.4 HUMAN FACTORS TRAINING

- (a) In respect to the understanding of the application of human factors and human performance issues, all maintenance organization personnel shall receive an initial and continuation human factors training. This shall concern to a minimum:
 - (1) Post-holders, managers, supervisors;
 - (2) Certifying staff, support staff and mechanics;
 - (3) Technical support personnel such as planners, engineers, technical record staff;
 - (4) Quality control/assurance staff;
 - (5) Specialized services staff;
 - (6) Human factors staff/human factors trainers;
 - (7) Store department staff, purchasing department staff;
 - (8) Ground equipment operators.
- (b) Initial human factors training shall cover all the topics of the training syllabus specified in IS: 6.4.1.4 either as a dedicated course or else integrated within other training. The syllabus may be adjusted to reflect the particular nature of the organization. The syllabus may also be adjusted to meet the particular nature of work for each function within the organization. For example:
 - (1) small organizations not working in shifts may cover in less depth subjects related to teamwork and communication;
 - (2) planners may cover in more depth the scheduling and planning objective of the syllabus and in less depth the objective of developing skills for shift working.
- (c) All personnel, including personnel being recruited from any other organization shall receive initial human factors training compliant with the organization's training standards prior to commencing actual job function, unless their competence assessment justifies that there is no need for such training. Newly directly employed personnel working under direct supervision may receive training within 6 months after joining the maintenance organization.

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- (d) The purpose of human factors recurrent training is primarily to ensure that staff remain current in terms of human factors and also to collect feedback on human factors issues. Consideration shall be given to the possibility that such training has the involvement of the quality department. There shall be a procedure to ensure that feedback is formally passed from the trainers to the quality department to initiate action where necessary.
- (e) Human factors recurrent training shall be of an appropriate duration in each two year period in relation to relevant quality audit findings and other internal/external sources of information on human errors in maintenance available to the organization.
- (f) Human factors training may be conducted by the maintenance organization itself, or independent trainers, or any training organizations acceptable to the competent authority.
- (g) The human factors training procedures shall be specified in the Maintenance Procedures Manual of the approved maintenance organization.
- (h) Additional training in fuel tank safety as well as associated inspection standards and maintenance procedures shall be required for maintenance organizations' technical personnel, especially technical personnel involved in the compliance of critical design configuration control limitations (CDCCL) tasks.

6.4.1.5 PERSONNEL COMPETENCE ASSESSMENT

- (a) The competence assessment procedure shall require amongst others that planners, mechanics, specialized services staff, supervisors, certifying staff and support staff, whether employed or contracted, are assessed for competence before unsupervised work commences and competence is controlled on a continuous basis.
- (b) Competence shall be assessed by evaluation of:
 - (1) On-the-job performance and/or testing of knowledge by appropriately qualified personnel, and
 - (2) Records for basic, organizational, and/or product type and differences training, and
 - (3) Experience records.
- (c) Validation of the above could include a confirmation check with the organization(s) that issued such document(s). For that purpose, experience/training may be recorded in a document such as a log book or based on the template in IS: 6.4.1.5 (b).
- (d) As a result of the assessment, an individual's qualification shall determine:
 - (1) which level of ongoing supervision would be required or whether unsupervised work could be permitted.
 - (2) whether there is a need for additional training.
- (e) A record of such qualification and competence assessment shall be kept. This shall include copies of all documents that attest to qualification, such as the license and/or any authorization held, as applicable.
- (f) For a proper competence assessment of its personnel, the organization shall consider that:

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- (1) In accordance with the job function, adequate initial and recurrent training is provided and recorded to ensure continued competence so that it is maintained throughout the duration of employment/contract.
- (2) All staff are able to demonstrate knowledge of and compliance with the maintenance organization procedures, as applicable to their duties.
- (3) All staff are able to demonstrate an understanding of human factors and human performance issues in relation to their job function and be trained as per 6.4.1.4 requirements.
- (4) Job descriptions for each job function in the organization contain sufficient criteria to enable the required competence assessment.
- (5) Criteria shall allow the assessment to establish that, among others (titles might be different in each organization):
 - (i) Managers are able to properly manage the work output, processes, resources and priorities described in their assigned duties and responsibilities in a safe compliant manner in accordance with regulations and organization procedures.
 - (ii) Planners are able to interpret maintenance requirements into maintenance tasks, and have an understanding that they have no authority to deviate from the maintenance data.
 - (iii) Supervisors are able to ensure that all required maintenance tasks are carried out and, where not completed or where it is evident that a particular maintenance task cannot be carried out to the maintenance data, then such problems will be reported to the Quality Manager for appropriate action. In addition, for those supervisors, who also carry out maintenance tasks, that they understand such tasks shall not be undertaken when incompatible with their management responsibilities.
 - (iv) Mechanics are able to carry out maintenance tasks to any standard specified in the maintenance data and will notify supervisors of defects or mistakes requiring rectification to re-establish required maintenance standards.
 - (v) Specialized services staff are able to carry out specialized maintenance tasks to the standard specified in the maintenance data. They shall be able to communicate with supervisors and report accurately when necessary.
 - (vi) Support staff are able to determine that relevant tasks or inspections have been carried out to the required standard.
 - (vii) Certifying staff are able to determine when the aircraft or aircraft component is ready to release to service and when it shall not be released to service.
 - (viii) Quality audit staffs are able to monitor compliance with Part-6 identifying non-compliance in an effective and timely manner so that the organization may remain in compliance with Part-6.
- (k) Competency assessment shall include the verification for the need of additional EWIS training when relevant.

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- (l) Competence assessment shall be based upon the procedure specified in IS: 6.4.1.5 (a).

6.4.1.6 DANGEROUS GOODS TRAINING PROGRAMME

- (a) An AMO shall have a dangerous goods training program for its employees, whether full time, part time, or temporary or contracted, who are engaged in the following activities:
 - (1) Loading, unloading or handling of dangerous goods;
 - (2) Design, manufacture, fabrication, inspection, marking, maintenance, reconditions, repairs or tests of a package, container or packaging component that is represented, marked, certified, or sold as qualified for use in transporting dangerous goods;
 - (3) Preparation of hazardous materials for transport;
 - (4) Responsibility for the safety of transportation of dangerous goods;
 - (5) Operation of a vehicle used to transport dangerous goods; or
 - (6) Supervision of any of the above listed items.
- (b) An AMO employee shall not perform or directly supervise a job function listed in item (a) above unless he or she has received the approved dangerous goods training.
- (c) The AMO training shall ensure that its dangerous goods training:-
 - (1) Ensures that each employee performing or directly supervising any of the job functions specified in item (a) above is trained to comply with all applicable procedures; and
 - (2) Enables the trained person to recognize items that contain, or may contain, dangerous goods regulated under these rules and standards.
- (d) The dangerous goods training of the AMO shall be approved by the Authority and shall contain the items in IS: 6.4.1.6.
- (e) An AMO shall document, in a form and manner acceptable to the Authority, the individual employee training required under this section. These training records shall be retained for a minimum of two years.

6.4.1.7 REST AND DUTY LIMITATIONS FOR PERSONS PERFORMING MAINTENANCE FUNCTIONS IN AN AMO

- (a) No person may assign, nor shall any person perform maintenance functions for aircraft, unless that person has had a minimum rest period of 8 hours prior to the beginning of duty.
- (b) No person may schedule a person performing maintenance functions for aircraft for more than 12 consecutive hours of duty.

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- (c) In situations involving unscheduled aircraft unserviceability, persons performing maintenance functions for aircraft may be continued on duty for:-
 - (1) Up to 16 consecutive hours; or
 - (2) 20 hours in 24 consecutive hours.
- (d) Following unscheduled duty periods, the person performing maintenance functions for aircraft shall have a mandatory rest period of 10 hours.
- (e) The AMO shall relieve the person performing maintenance functions from all duties for 24 consecutive hours during any 7 consecutive day's period.

6.4.1.8 RECORDS OF MANAGEMENT, SUPERVISORY, INSPECTION AND CERTIFYING STAFF

- (a) The AMO shall maintain a roster of all management, supervisory, inspection and certifying staff, which includes details of the scope of their authorization.
- (b) Certifying staff shall be notified in writing of the scope of their authorization.
 - (1) The authorization document shall be in a style that makes its scope clear to certifying staff and any authorized person that may be required to examine the document. Where codes are used to define scope, an interpretation document shall be readily available.
 - (2) Certifying staff are not required to carry the authorization document at all times but shall produce it within a reasonable time of a request from an authorized person.
- (c) See IS: 6.4.1.8 for detailed requirements pertaining to records of management, supervisory, inspection and certifying staff.

6.4.1.9 SAFETY MANAGEMENT SYSTEM (SMS)

- (a) Approved maintenance organizations providing services to operators of airplanes or helicopters engaged in international commercial air transport and registered in Ethiopia shall establish and implement a Safety Management System (SMS) that is acceptable to Ethiopian Civil Aviation Authority which includes as a minimum:
 - (1) a process to identify actual and potential safety hazards and assess the associated risks;
 - (2) Process to develop and implement remedial action necessary to maintain an acceptable level of safety;
 - (3) Provision for continuous monitoring and regular assessment of the appropriateness and effectiveness of safety management activities; and
 - (4) Aims to make continuous improvement to the overall level of safety.

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- (b) The Safety Management System shall clearly define lines of safety accountability throughout a maintenance organization, including a direct accountability for safety to the upper levels of senior management.
- (c) Appoints a Manager accountable for promoting safety policy.

6.4.1.10 PRODUCTION PLANNING

- (a) Depending on the scope and complexity of work generally performed by the maintenance organization, the planning system may range from a very simple procedure to a complex organizational set-up including a dedicated planning function in support of the production function.
- (b) For the purpose of this Rules and Standards (Part-6), the production planning function includes two complementary elements:
 - (1) scheduling the maintenance work ahead, to ensure that it will not adversely interfere with other work as regards the availability of all necessary personnel, tools, equipment, material, maintenance data and facilities.
 - (2) during maintenance work, organizing maintenance teams and shifts and provide all necessary support to ensure the completion of maintenance without undue time pressure.
- (c) When establishing the production planning procedure, consideration shall be given to the following:
 - (1) logistics,
 - (2) inventory control,
 - (3) square meters of accommodation,
 - (4) man-hours estimation,
 - (5) man-hours availability,
 - (6) preparation of work,
 - (7) hangar availability,
 - (8) environmental conditions (access, lighting standards and cleanliness),
 - (9) co-ordination with internal and external suppliers, etc.
 - (10) scheduling of safety-critical tasks during periods when staff are likely to be most alert.
- (d) Limitations of human performance, in the context of planning safety related tasks, refers to the upper and lower limits, and variations, of certain aspects of human performance (Circadian rhythm/24 hours body cycle) which personnel shall be aware of when planning work and shifts.
- (e) The primary objective of the changeover/handover information is to ensure effective communication at the point of handing over the continuation or completion of maintenance

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actions. Effective task and shift handover shall depend on the following three basic elements:

- (1) The outgoing person's ability to understand and communicate the important elements of the job or task being passed over to the incoming person.
- (2) The incoming person's ability to understand and assimilate the information being provided by the outgoing person.
- (3) A formalized process for exchanging information between outgoing and incoming persons and a planned shift overlap and a place for such exchanges to take place.

6.4.1.11 PERFORMANCE OF MAINTENANCE

- (a) The maintenance organization shall establish, implement and maintain procedures to ensure that:
 - (1) after completion of maintenance a general verification is carried out to ensure that the aircraft or component is clear of all tools, equipment and any extraneous parts or material, and that all access panels removed have been refitted;
 - (2) an error capturing method is implemented after the performance of any critical maintenance task;
 - (3) The risk of multiple errors during maintenance and the risk of errors being repeated in identical maintenance tasks are minimized; and,
 - (4) Damage is assessed and modifications and repairs are carried out in accordance with Part - 5.
- (b) The procedure shall identify the error-capturing methods, the critical maintenance tasks, the training and qualification of staff applying error-capturing methods, and how the organization ensures that its staff is familiar with critical maintenance tasks and error-capturing methods.
- (c) The procedure with respect to Critical Maintenance Tasks shall ensure that the following maintenance tasks are reviewed to assess their impact on flight safety:
 - (1) Tasks that may affect the control of the aircraft flight path and attitude, such as installation, rigging and adjustments of flight controls;
 - (2) Tasks that may affect the aircraft stability control systems (autopilot, fuel transfer);
 - (3) Tasks that may affect the propulsive force of the aircraft, including installation of aircraft engines, propellers and rotors; and
 - (4) Overhaul, calibration or rigging of engines, propellers, transmissions and gearboxes.
- (d) The procedure shall describe which data sources are used to identify critical maintenance tasks. Several data sources may be used, such as:
 - (1) Information from the design approval holder;

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- (2) Accident reports;
 - (3) Investigation and follow-up of incidents;
 - (4) Occurrence reporting;
 - (5) Flight data analysis;
 - (6) Results of audits;
 - (7) Normal operations monitoring schemes;
 - (8) Feedback from training; and
 - (9) error-capturing methods.
- (e) Error-capturing methods are those actions defined by the organization to detect maintenance errors made when performing maintenance.
- (f) The organization shall ensure that the error-capturing methods are adequate for the work and the disturbance of the aircraft system. A combination of several actions (visual inspection, operational check, functional test, rigging check) may be necessary in some cases.
- (g) The maintenance performance procedures shall be aimed at:
- (1) Minimizing multiple errors and preventing omissions. Therefore, the procedures shall specify:
 - (i) That every maintenance task is signed off only after completion;
 - (ii) How the grouping of tasks for the purpose of sign-off allows critical steps to be clearly identified; and
 - (iii) That work performed by personnel under supervision (i.e. temporary staff, trainees) is checked and signed off by an authorized person;
 - (2) Minimizing the possibility of an error being repeated in identical tasks and, therefore, compromising more than one system or function. Thus, the procedures should ensure that no person is required to perform a maintenance task involving removal/installation or assembly/disassembly of several components of the same type fitted to more than one system, a failure of which could have an impact on safety, on the same aircraft or component during a particular maintenance check. However, in unforeseen circumstances when only one person is available, the organization may make use of reinspection as described in paragraph (j) of this subpart.
- (h) To minimize the risk of multiple errors or errors being repeated, the maintenance organization may implement:
- (1) procedures to plan the performance by different persons of the same task in different systems;
 - (2) duplicate inspection or re-inspection procedures.

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- (i) An 'authorized person' is a person formally authorized by the maintenance organization to perform or supervise a maintenance task. An 'authorized person' is not necessarily 'certifying staff'.
- (j) A 'sign-off' is a statement issued by the 'authorized person' which indicates that the task or group of tasks has been correctly performed. A 'sign-off' relates to one step in the maintenance process and is, therefore, different to a certificate of release to service.

6.4.1.12 NONDESTRUCTIVE TESTING

- (a) Continued airworthiness non-destructive testing means such testing specified by the type certificate holder/aircraft or engine or propeller manufacturer in accordance with the maintenance data for in service aircraft/aircraft components for the purpose of determining the continued fitness of the product to operate safely.
- (b) Appropriately qualified means to Level 1, 2 or 3 as defined by the European Standard EN 4179 dependent upon the non-destructive testing function to be carried out.
- (c) Notwithstanding the fact that Level 3 personnel may be qualified via EN 4179 to establish and authorize methods, techniques, etc., this does not permit such personnel to deviate from methods and techniques published by the type certificate holder/manufacturer in the form of continued airworthiness data, such as in non-destructive test manuals or service bulletins, unless the manual or service bulletin expressly permits such deviation.
- (d) Notwithstanding the general references in EN 4179 to a national aerospace non-destructive testing (NDT) board, all examinations should be conducted by personnel or organizations under the general control of such a board. In the absence of a national aerospace NDT board, the aerospace NDT board of another Member State should be used, as defined by the competent authority.
- (e) Particular non-destructive test means any one or more of the following; Dye penetrant, magnetic particle, eddy current, ultrasonic and radiographic methods including X ray and gamma ray.
- (f) It should be noted that new methods are and will be developed, such as, but not limited to thermography and shearography, which are not specifically addressed by EN 4179. Until the time this agreed standard is established, such methods should be carried out in accordance with the particular equipment manufacturer's recommendations including any training and examination process to ensure competence of the personnel in the process.
- (g) Any maintenance organization approved under Part-6 that carries out NDT shall establish NDT specialist qualification procedures detailed in the organization's maintenance procedures manual and accepted by the Authority.
- (h) Boroscopy and other techniques such as delamination coin tapping are non-destructive inspections rather than non-destructive testing. Notwithstanding such

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differentiation, the maintenance organization should establish a manual procedure approved by the Authority to ensure that personnel who carry out and interpret such inspections are properly trained and assessed for their competence in the process.

- (i) The referenced standards, methods, training and procedures should be specified in the maintenance organization's maintenance procedures manual.
- (j) Any such personnel who intend to carry out and/or control a non-destructive test for which they were not qualified prior to the effective date of maintenance organization's approval should qualify for such non-destructive test in accordance with EN 4179.
- (k) In this context officially recognized standard means those standards established or published by an official body whether having legal personality or not, which are widely recognized by the air transport sector as constituting good practice.

6.4.1.13 INDEPENDENT INSPECTIONS.

- (a) An independent inspection is an inspection performed by an 'independent qualified person' of a task carried out by an 'authorized person', taking into account that:
 - (1) the 'authorized person' is the person who performs the task or supervises the task and they assume the full responsibility for the completion of the task in accordance with the applicable maintenance data;
 - (2) the 'independent qualified person' is the person who performs the independent inspection and attests the satisfactory completion of the task and that no deficiencies have been found.
 - (3) the 'authorized person' issues the certificate of release to service or signs off the completion of the task after the independent inspection has been carried out satisfactorily;
 - (4) the work card system used by the organization shall record the identification of both persons and the details of the independent inspection as necessary before the certificate of release to service or sign-off for the completion of the task is issued.
- (b) The manufacturer's instructions for continued airworthiness shall be followed when determining the need for an independent inspection.
- (c) In the absence of maintenance and inspection standards published by organization responsible for the type design, maintenance tasks that involve the assembly or any disturbance of a control system that, if errors occurred, could result in a failure, malfunction, or defect endangering the safe operation of the aircraft should be considered as flight safety sensitive maintenance tasks needing an independent inspection. A control system is an aircraft system by which the flight path, attitude, or propulsive force of the aircraft is changed,

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including the flight, engine and propeller controls, the related system controls and the associated operating mechanisms.

- (d) The organization must have procedures to demonstrate that the 'independent qualified person' has been trained and has gained experience in the specific inspection to be performed. The organization could consider making use of, for example:
 - (1) staff holding a certifying staff or support staff or sign-off authorization or equivalent necessary to release or sign off the critical maintenance task; or
 - (2) staff holding a certifying staff or support staff or sign-off authorization or equivalent necessary to release or sign off similar task in a product of similar category and having received specific practical training in the task to be inspected.
- (e) Independent inspections shall be carried out by at least two persons, to ensure correct assembly, locking and sense of operation. A technical record of the inspections should contain the signatures of both persons before the relevant Certificate of release to service (CRS) is issued.
 - (1) An independent inspection is an inspection first made by an authorized person signing the maintenance release who assumes full responsibility for the satisfactory completion of the work, before being subsequently inspected by a second independent competent person who attests to the satisfactory completion of the work recorded and that no deficiencies have been found.
 - (2) The second independent qualified person does not issue a maintenance release; therefore, they are not required to hold certification privileges. However they shall be suitably qualified to carry out the inspection.
- (f) When work is being done under the control of an approved maintenance organization the organization shall have procedures to demonstrate that the signatories have been trained and have gained experience on the specific control systems being inspected.
- (g) When work is being undertaken by an independent certifying staff, the qualifications and experience of the second independent competent person shall be directly assessed by the person certifying the maintenance, taking into account the individual's training and experience. It should not be acceptable for the certifying staff signing the release to show the person performing the independent inspection how to perform the inspection at the time the work is completed.
- (h) The following maintenance tasks shall primarily be considered when inspecting aircraft control systems that have been disturbed:
 - (1) installation, rigging and adjustment of flight controls.
 - (2) installation of aircraft engines, propellers and rotors.

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- (3) overhaul, calibration or rigging of components such as engines, propellers, transmissions and gearboxes.
- (4) Consideration should also be given to:
 - (i) previous experience of maintenance errors, depending on the consequences of the failure.
 - (ii) information arising from an 'occurrence reporting system'
- (i) An independent inspection shall ensure correct assembly, locking and sense of operation. When checking control systems that have undergone maintenance the person signing the maintenance release and the person performing the independent check shall consider the following points independently:
 - (1) all those parts of the system that have actually been disconnected or disturbed should be inspected for correct assembly and locking.
 - (2) the system as a whole should be inspected for full and free movement over the complete range.
 - (3) cables should be tensioned correctly with adequate clearance at secondary stops.
 - (4) the operation of the control system as a whole should be observed to ensure that the controls are operating in the correct sense.
 - (5) if the control system is duplicated to provide redundancy, each system should be checked separately.
 - (6) if different control systems are interconnected so that they affect each other, all the interactions should be checked through the full range of the applicable controls.
 - (7) Software that is part of the critical maintenance task should be checked, for example: version, compatibility with aircraft configuration.
- (j) In unforeseen cases when only one person is available:
 - (1) Reinspection is an error-capturing method subject to the same conditions as an independent inspection is, except that the 'authorized person' performing the maintenance task is also acting as 'independent qualified person' and performs the inspection.
 - (2) Reinspection, as an error-capturing method, should only be performed in unforeseen circumstances when only one person is available to carry out the task and perform the independent inspection. The circumstances cannot be considered unforeseen if the person or organization has not assigned a suitable 'independent qualified person' to that particular line station or shift.

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- (3) The certificate of release to service is issued after the task has been performed by the 'authorized person' and the reinspection has been carried out satisfactorily. The work card system used by the organization should record the identification and the details of the reinspection before the certificate of release to service for the task is issued.

6.4.1.14 CRITICAL DESIGN CONFIGURATION CONTROL LIMITATIONS (CDCCL).

- (a) The maintenance organization shall ensure that when performing maintenance, the CDCCL are not compromised. The organization shall pay particular attention to possible adverse effects of any change to the wiring of the aircraft, even if a change not specifically associated with the fuel tank system. For example, it should be common practice to identify segregation of fuel gauging system wiring as a CDCCL.
- (b) The organization can prevent adverse effects associated with changes to the wiring by standardizing maintenance practices through training, and not through periodic inspections. Training should be provided to avoid indiscriminate routing and splicing of wire and to provide comprehensive knowledge of critical design features of fuel tank systems that would be controlled by a CDCCL.

6.5 AMO OPERATING RULES

6.5.1.1 MAINTENANCE PROCEDURES MANUAL

- (a) An approved maintenance organization must prepare and follow ECAA-approved Maintenance Procedures Manual.
- (b) An AMO'S Maintenance Procedures Manual and any subsequent amendments thereto shall be approved by the Authority prior to use.
- (c) The AMO Maintenance Procedures Manual shall specify the scope of work required of the AMO in order to satisfy the relevant requirements needed for an approval of an aircraft or aeronautical product for return to service.
- (d) The Maintenance Procedures Manual and any other manual it identifies must:
 - (1) Include instructions and information necessary to allow the personnel concerned to perform their duties and responsibilities with a high degree of safety;
 - (2) Be in a form that is easy to revise and contain a system which allows personnel to determine current revision status;
 - (2) Have the date of the last revision printed on each page containing the revision;
 - (4) Not be contrary to any applicable Ethiopian Civil Aviation Rules and Standards or the AMO's specific operating provisions; and
- (3) Include a reference to appropriate Ethiopian Civil Aviation Rules and Standards.

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- (e) The maintenance organization shall provide for the use and guidance of maintenance personnel concerned a procedures manual which may be issued in separate parts containing the following information:
 - (1) A statement signed by the accountable manager confirming that the maintenance organization Maintenance Procedures Manual and any associated manuals define the AMO's compliance with this Rules and Standards and will be complied with at all times.
 - (2) A procedure to establish and maintain a current list of the titles and names of the management personnel accepted by the Authority. The list of personnel may be separate from the Maintenance Procedures Manual but must be kept current and available for review by the Authority when requested.
 - (3) A list which describes the duties and responsibility of the management personnel and the matters on which they may deal directly with the Authority on behalf of the AMO.
 - (4) An organizational chart identifying -
 - (i) Each management position with authority to act on behalf of the approved maintenance organization,
 - (ii) The area of responsibility assigned to each management position, and
 - (iii) The duties, responsibilities, and authority of each management position;
 - (5) A procedure to establish and maintain a current roster of certifying personnel.
 - (6) A description of the procedures used to establish the competence of maintenance personnel.
 - (7) A general description of manpower resources.
 - (8) A description of the method used for the completion and retention of the maintenance records.
 - (9) A description of the procedure for preparing the maintenance release and the circumstances under which the release is to be signed.
 - (10) The personnel authorized to sign the maintenance release and the scope of their authorization;
 - (11) A description, when applicable, of the additional procedures for complying with an AOC holder's maintenance procedures and requirements.
 - (12) A description of the procedure for receiving, assessing, amending and distributing within the maintenance organization all necessary airworthiness data from the organization responsible for the type design;

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- (13) A general description of the organization's facilities located at each address specified in the AMO's approval certificate.
- (14) A general description of the scope of work authorized under the organization's terms of approval
- (15) The notification procedure for AMO to use when requesting the approval of changes to the organization of the AMO from the Authority.
- (16) The amendment procedure for the AMO Maintenance Procedures Manual, including the submission to the Authority.
- (17) The AMO's procedures to establish and maintain an independent quality system to monitor compliance with the adequacy of the procedures to ensure good maintenance practices and airworthy aircraft and aeronautical products complying with all relevant requirements of this Rules and Standards.
- (18) Procedures for -
 - (i) Revising the capability list and notifying the responsible ECAA office of revisions to the list, including how often the responsible ECAA office will be notified of revisions; and
 - (ii) The self-evaluation for revising the capability list, including methods and frequency of such evaluations, and procedures for reporting the results to the appropriate manager for review and action;
- (19) A list of operators, if appropriate, to which the AMO provides an aircraft maintenance service.
- (20) A list of organizations performing maintenance on behalf of the AMO.
- (21) A list of the AMO's line maintenance locations and procedures, if applicable;
- (22) A description, when applicable, of contracted activities;
- (23) A description of the procedures for implementing changes affecting the approval of the maintenance organization;
- (24) A description of the procedures for complying with the service information reporting requirement contained in section 6.5.1.10;
- (25) Procedures for revising the training program and submitting revisions to ECAA for approval;
- (26) Procedures for maintaining and revising the contract maintenance information including submitting revisions to ECAA for approval;
- (27) A description of the required records and the recordkeeping system used to obtain, store, and retrieve the required records.

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- (f) The maintenance organization shall ensure that the procedures manual is amended as necessary to keep the information contained therein up to date.
- (g) Copies of all amendments to the procedures manual shall be furnished promptly to all organizations or persons to whom the manual has been issued.
- (h) The maintenance organization shall ensure that the procedures manual is amended as necessary to keep the information contained therein up to date.
- (m) See IS: 6.5.1.1 for detailed requirements concerning the Maintenance Procedures Manual and a sample Maintenance Procedures Manual format.

6.5.1.2 CAPABILITY LIST

- (a) An approved maintenance organization with a limited rating may perform maintenance, preventive maintenance, or alterations on an article if the article is listed on a current capability list acceptable to the ECAA or on the maintenance organization's operations specifications.
- (b) Each approved maintenance organization must prepare and retain a current capability list approved by the Authority. The approved maintenance organization may not perform maintenance, preventive maintenance, or a modification on an article until the article has been listed on the capability list in accordance with this Part.
- (c) The capability list must identify each article by make and model, part number, or other nomenclature designated by the article's manufacturer.
- (d) An article may be listed on the capability list only if the article is within the scope of the ratings and classes of the approved maintenance organization's certificate, and only after the approved maintenance organization has performed a self-evaluation in accordance with 6.5.1.1(d)(18). The approved maintenance organization must perform the self-evaluation described in this paragraph to determine that the maintenance organization has all of the facilities, equipment, material, technical data, processes, housing, and trained personnel in place to perform the work on the article as required by this part. If the approved maintenance organization makes that determination, it may list the article on the capability list.
- (d) The document of the self-evaluation described in paragraph (c) of this section must be signed by the accountable manager and must be retained on file by the approved maintenance organization.
- (e) Upon listing an additional article on its capability list, the maintenance organization must submit the amended capability list together with the self-evaluation document for approval by the Ethiopian Civil Aviation Authority.
- (f) The capability list(s) must be available in the premises for inspection by the Authority.

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- (g) The self-evaluations must be available in the premises for inspection by the Authority.
- (h) The AMO shall retain the capability list(s) and self-evaluation(s) for two years from the date accepted by the accountable manager.

6.5.1.3 CONTRACT MAINTENANCE

- (a) An AMO may contract a maintenance function pertaining to an article to an outside source provided:-
 - (1) The ECAA approves the maintenance function to be contracted to the outside source; and
 - (2) The AMO maintains and makes available to the Authority in a format acceptable to the ECAAA, the following information:-
 - (i) The maintenance functions contracted to each outside facility, and
 - (ii) The name of each outside facility to whom the AMO contracts maintenance functions and the type of certificate and ratings, if any, held by each facility.
- (b) An AMO may contract a maintenance function pertaining to an article to a noncertificated person provided:-
 - (1) The noncertificated person follows a quality control system equivalent to the system followed by the AMO;
 - (i) The AMO remains directly in charge of the work performed by the noncertificated person; and
 - (ii) The AMO verifies, by test and/or inspection, that the work has been performed satisfactorily by the noncertificated person and that the article is airworthy before approving it for return to service.
- (c) An AMO may not provide only approval for return to service of a complete type-certificated product following contract maintenance, preventive maintenance, or alterations.
- (d) A list of contracted maintenance by the AMO shall be approved by the Authority.

6.5.1.4 PRIVILEGES OF THE APPROVED MAINTENANCE ORGANISATION

- (a) The AMO shall carry out the following tasks as permitted by and in accordance with the AMO Maintenance Procedures Manual:-
 - (1) Maintain any aircraft or aeronautical product for which it is rated at the location identified in the approval certificate;
 - (2) maintain any aircraft for which it is rated at any location subject to the need for such maintenance arising from unserviceability of the aircraft;

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- (3) Perform the activities in support of a specific AOC holder where that AOC has requested the services of the AMO at locations other than the location identified on the AMO certificate and the AMO has been rated to maintain the aircraft of that specific AOC holder at the requested location in the AMO operating provisions approved by the Authority; and
- (4) Issue an approval for return to service or a maintenance release in respect of subparagraphs (a) (1), (2), and (3) of this subsection upon completion of maintenance in accordance with limitations applicable to the AMO.
- (b) An AMO may not contract out the maintenance, preventive maintenance, modification or alteration of a complete type-certificated product, and it may not provide only approval for return to service of a product following contract maintenance.
- (c) The AMO may maintain or alter any article, for which it is rated at a place other than the AMO, if:-
 - (1) The function would be performed in the same manner as when performed at the AMO and in accordance with this Subpart;
 - (2) All necessary personnel, equipment, material, and technical and/or approved standards are available at the place where the work is to be done; and
 - (3) The Maintenance Procedures Manual of the AMO sets forth approved procedures governing work to be performed at a place other than the AMO.

6.5.1.5 LIMITATIONS ON THE AMO

- (a) The AMO shall maintain an aircraft or aeronautical product for which it is approved only when all necessary housing, facilities, equipment, tools, material, approved technical data and certifying staff are available.

6.5.1.6 CERTIFICATE OF RELEASE TO SERVICE OF AN AIRCRAFT, PART, COMPONENT OR ASSEMBLY

- (a) A certificate of release to service shall be issued by appropriately authorized certifying staff on behalf of the organization when it has been verified that all maintenance ordered has been properly and satisfactorily carried out by the organization in accordance with the procedures specified in the organization's Maintenance Procedures Manual, taking into account the availability and use of the maintenance data specified in the relevant manuals and that there are no non-compliances which are known to endanger the flight safety.
- (b) A certificate of release to service shall be issued before flight at the completion of any maintenance.
- (c) New defects or incomplete maintenance work orders identified during the above maintenance shall be brought to the attention of the aircraft operator for the specific

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purpose of obtaining agreement to rectify such defects or completing the missing elements of the maintenance work order. In the case where the aircraft operator declines to have such maintenance carried out under this paragraph, paragraph (e) is applicable.

- (d) By derogation to paragraph (a), when the organization is unable to complete all maintenance ordered, it may issue a certificate of release to service within the approved aircraft limitations. The organization shall enter such fact in the aircraft certificate of release to service before the issue of such certificate.
- (e) Endangers the flight safety' means any instances where safe operation could not be assured or which could lead to an unsafe condition. It typically includes, but is not limited to, significant cracking, deformation, corrosion or failure of primary structure, any evidence of burning, electrical arcing, significant hydraulic fluid or fuel leakage and any emergency system or total system failure. An airworthiness directive overdue for compliance is also considered a hazard to flight safety.
- (f) The certificate of release to service to be used for release of an aircraft or aeronautical part, component or assembly shall adhere to the following items.
 - (1) The certificate of release to service shall contain the following statement: "Certifies that the work specified except as otherwise specified was carried out in accordance with current ECARAS Part-6 and other applicable Civil Aviation Rules and Standards and in respect to that work the aircraft/aircraft component is considered ready for release to service."
 - (2) The certificate of release to service shall reference the data specified in the manufacturer's maintenance instructions or instructions for continued airworthiness.
 - (3) Where instructions include a requirement to insure that a dimension or test figure is within a specific tolerance as opposed to a general tolerance, the dimension or test figure shall be recorded unless the instruction permits the use of GO/NO gauges. It is not normally sufficient to state that the dimension or the test figure is within tolerance.
 - (4) The date such maintenance was carried out shall include when the maintenance took place relative to any life or overhaul limitation in terms of date/flying hours/cycles/landings etc., as appropriate.
 - (5) When extensive maintenance has been carried out, it is acceptable for the certificate of release to service to summarize the maintenance as long as there is a cross-reference to the work package containing full details of maintenance carried out. Dimensional information shall be retained in the work package record.
 - (6) The person issuing the release to service shall use a full signature and preferably a certification stamp except in the case where a computer release to service system is used. In this latter case, the Authority will need to be satisfied that only the particular person can electronically issue the release to service.
 - (7) One such method of compliance with item (c)(6) is the use of a magnetic or optical

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personal card in conjunction with a personal identity number (PIN) which is keyed into the computer and known only to the individual.

- (g) A component which has been maintained off the aircraft requires the issue of a certificate of release to service (ECAA/AWS/OF/007) for such maintenance and another certificate of release to service in regard to being installed properly on the aircraft when such action occurs. The release to service of the aircraft will typically be made by the AMO in the aircraft technical log maintenance records section. This requirement also applies to engine completely restored. The authorized release certificate – (ECAA FORM AWS007) constitutes the component certificate of release to service.
- (h) The purpose of the certificate (ECAA FORM AWS007) is to release assemblies/items/components/parts (hereafter referred to as item(s) after maintenance and to release maintenance work carried out on such items under the approval of the ECAA and to allow items removed from one aircraft/aircraft component to be fitted to another aircraft/aircraft component.
- (i) ECAA FORM AWS007 may be issued for an aircraft component which has been used on an aircraft and removed in a serviceable condition. Examples include leased and loaned aircraft component.
- (j) ECAA FORM AWS007 may be issued for an aircraft component which has been removed from aircraft which have been withdrawn from service, or from aircraft which have been involved in abnormal occurrences such as accidents, incidents, heavy landings or lightning strikes.
- (k) Any new unused aircraft component in storage without an ECAA FORM AWS007 that was manufactured by an organization acceptable to the ECAA may be issued with ECAA FORM AWS007 by an appropriately rated maintenance organization approved under ECARAS Part-6. The ECAA FORM AWS007 should be issued in accordance with the following subparagraphs which should be included in the organization's Maintenance Procedures Manual.

NOTE: It should be understood that the release of a stored but unused aircraft component in accordance with this paragraph represents a maintenance release under ECARAS PART-6 and not a production release.

- (l) An acceptance test report or statement should be available for all used and unused aircraft components that are subjected to acceptance testing after manufacturing or maintenance as appropriate.
- (m) The aircraft component should be inspected for compliance with the manufacturer's instructions and limitations for storage and condition including any requirement for limited storage life, inhibitors, controlled climate and special storage containers. In addition or in the absence of specific storage instructions the aircraft component should be inspected for damage, corrosion and leakage to ensure good condition.
- (n) The storage life used of any storage life-limited parts should be established.

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- (o) If it is not possible to establish satisfactory compliance with all applicable conditions in subparagraph (k) (1) to (3) inclusive, the aircraft specified component should be disassembled by an appropriately rated organization and subjected to a check for incorporated airworthiness directives, repairs and modifications and inspected/tested in accordance with the maintenance data to establish satisfactory condition and, if relevant, all seals, lubricant and life- limited parts should be replaced. Upon satisfactory completion after reassembly, an ECAA FORM AWS007 may be issued stating what was carried out and the reference of the maintenance data included.
- (p) Used serviceable aircraft components removed from Ethiopian registered aircraft may be issued with an ECAA FORM AWS007 by an appropriately rated organization subject to compliance with this subparagraph.
 - (1) The organization shall ensure that the component was removed from the aircraft by an appropriately qualified person.
 - (2) The aircraft component may only be deemed serviceable if the last flight operation with the component fitted revealed no faults on that component/related system.
 - (3) The aircraft component shall be inspected for satisfactory condition including in particular damage, corrosion or leakage and compliance with any additional maintenance data.
 - (4) The aircraft record shall be researched for any unusual events that could affect the serviceability of the aircraft component such as involvement in accidents, incidents, heavy landings or lightning strikes. Under no circumstances may an ECAA FORM AWS007 be issued in accordance with this paragraph if it is suspected that the aircraft component has been subjected to extremes of stress, temperatures or immersion which could affect its operation.
 - (5) A maintenance history record shall be available for all used serialized aircraft components.
 - (6) Compliance with known modifications and repairs should be established.
 - (7) The flight hours/cycles/landings as applicable of any service life-limited parts including time since overhaul shall be established.
 - (8) Compliance with known applicable airworthiness directives shall be established.
 - (9) Subject to satisfactory compliance with this subparagraph (M), an ECAA FORM AWS007 may be issued and should contain the necessary information including the aircraft from which the aircraft component was removed.
- (q) Serviceable aircraft components removed from foreign registered aircraft may only be issued with an ECAA FORM AWS007 if the components are leased or loaned from the maintenance organization approved under ECARAS Part-6 who retains control of the airworthiness status of the components. An ECAA FORM AWS007 may be issued and shall contain the necessary information including the aircraft from which the aircraft component was removed.

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- (r) Serviceable aircraft components removed from Ethiopian registered aircraft withdrawn from service may be issued with an ECAA FORM AWS007 by a maintenance organization approved under ECARAS Part-6 subject to compliance with this subparagraph.
- (1) Aircraft withdrawn from service are sometimes dismantled for spares. This is considered to be a maintenance activity and shall be accomplished under the control of an organization approved under ECARAS Part-6 employing procedures approved by the Authority.
 - (2) To be eligible for installation, components removed from such aircraft may be issued with an Airworthiness Approval Tag (ECAA FORM AWS007) by an appropriately rated organization following a satisfactory assessment.
 - (3) As a minimum, the assessment must satisfy the standards set out in paragraphs (k), (l) and (m) as appropriate. This should, where known, include the possible need for the alignment of scheduled maintenance that may be necessary to comply with the maintenance programme applicable to the aircraft on which the component is to be installed.
 - (4) Irrespective of whether the aircraft holds a certificate of airworthiness or not, the organization responsible for certifying any removed component should ensure that the manner in which the components were removed and stored are compatible with the standards required by ECARAS Part-6.
 - (5) A structured plan shall be formulated to control the aircraft disassembly process. The disassembly is to be carried out by an appropriately rated organization under the supervision of certifying staff who will ensure that the aircraft components are removed and documented in a structured manner in accordance with the appropriate maintenance data and disassembly plan.
 - (6) All recorded aircraft defects shall be reviewed and the possible effects these may have on both normal and standby functions of removed components are to be considered.
 - (7) Dedicated control documentation is to be used as detailed by the disassembly plan, to facilitate the recording of all maintenance actions and component removals performed during the disassembly process. Components found to be unserviceable are to be identified as such and quarantined pending a decision on the actions to be taken. Records of the maintenance accomplished to establish serviceability are to form part of the component maintenance history.
 - (8) Suitable Part-6 facilities for the removal and storage of removed components are to be used which include suitable environmental conditions, lighting, access equipment, aircraft tooling and storage facilities for the work to be undertaken. While it may be acceptable for components to be removed, given local environmental conditions, without the benefit of an enclosed facility, subsequent disassembly (if required) and storage of the components shall be in accordance with the manufacturer's recommendations.

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- (s) Used aircraft components removed from an aircraft involved in an accident or incident shall only be issued with an ECAA Form AWS007 when processed in accordance with paragraph (j) and a specific work order including all additional necessary tests and inspections deemed necessary by the accident or incident. Such a work order may require input from the type certificate (TC) holder or original manufacturer as appropriate. This work order shall be referenced in block 12.
- (t) When a part of component is released to service, the AMO shall complete ECAA FORM AWS007 as contained in IS: 6.5.1.6.

6.5.1.7 MAINTENANCE RECORDS

- (a) The AMO shall record, in a form acceptable to the Authority, all details for maintenance work performed.
- (b) The maintenance organization shall retain detailed maintenance records to show that all requirements for the signing of a maintenance release have been met.
- (c) The AMO shall provide a copy of each certificate of release to service to the aircraft operator, together with a copy of any specific airworthiness data used for repairs/modifications performed.
- (d) The AMO shall retain a copy of all detailed maintenance records and any associated airworthiness data for two years from the date the aircraft or aeronautical product to which the work relates was released from the AMO after the signing of the maintenance release.
- (e) Records kept in accordance with this subpart shall be maintained in a form and format that ensures readability, security and integrity of the records at all times.
 - (1) The form and format of the records may include, for example, paper records, film records, electronic records or any combination thereof.
 - (2) Paper systems shall use robust material which can withstand normal handling and filing. The record shall remain legible throughout the required retention period.
 - (3) Computer systems may be used to control maintenance and/or record details of maintenance work carried out. Computer systems used to control maintenance and/or record details of maintenance work carried out shall have at least one backup system which should be updated at least within 24 hours of any maintenance. Each terminal is required to contain programme safeguards against the ability of unauthorized personnel to alter the database.
- (f) Each person who maintains, performs preventive maintenance, rebuilds, or modifies an aircraft/aeronautical product shall make an entry in the maintenance record of that equipment:
 - (1) A description and reference to data acceptable to the Authority of work performed.
 - (2) The date of completion of the work performed.
 - (3) The name of the person performing the work if other than the person specified in this

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subsection.

- (4) If the work performed on the aircraft/aeronautical product has been performed satisfactorily, the signature, certificate number, and kind of certificate held by the person approving the work.
 - (5) The authorized signature, the AMO certificate number, and kind of license held by the person approving or disapproving for return to service the aircraft, airframe, aircraft engine, propeller, appliance, component part, or portions thereof.
 - (6) The signature constitutes the approval for return to service only for the work performed.
 - (7) In addition to the entry required by this paragraph, major repairs and major modifications shall be entered on a form, and the form disposed of by the person performing the work, in the manner prescribed by the Authority in Part 5: 5.7.1.1.
- (g) No person shall describe in any required maintenance entry or form an aircraft or aeronautical component as being overhauled unless:-
- (1) Using methods, techniques, and practices acceptable to the Authority, it has been disassembled, cleaned, inspected as permitted, repaired as necessary, and reassembled; and
 - (2) It has been tested in accordance with approved standards and technical data, or in accordance with current standards and technical data acceptable to the Authority, which have been developed and documented by the holder of the type certificate, supplemental type certificate, or a material, part, process, or appliance approval under a TSO.
- (h) No person may describe in any required maintenance entry or form, an aircraft or other aeronautical product as being rebuilt unless it has been:-
- (1) Disassembled, cleaned, inspected as permitted;
 - (2) Repaired as necessary; and
 - (3) Reassembled and tested to the same tolerances and limits as a new item, using either new parts or used parts that either conforms to new part tolerances and limits, or to approved oversized or undersized dimensions.
- (i) No person may approve for return to service any aircraft or aeronautical product that has undergone maintenance, preventive maintenance, rebuilding, or modification unless:-
- (1) The appropriate maintenance record entry has been made; and
 - (2) The repair or modification form authorized by or furnished by the Authority has been executed in a manner prescribed by the Authority;
- (j) If a repair or modification results in any change in the aircraft operating limitations or flight data contained in the approved aircraft flight manual, those operating limitations or flight data shall be appropriately revised and set forth as prescribed by the Authority.

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- (k) Maintenance record entries for inspections. The person approving or disapproving for return to service an aircraft/aeronautical product, after any inspection performed in accordance with this Rules and Standards, shall make an entry in the maintenance record of that equipment containing the following information:-
- (1) The type of inspection and a brief description of the extent of the inspection;
 - (2) The date of the inspection and aircraft total time in service;
 - (3) The authorized signature, the AMO certificate number, and kind of license held by the person approving or disapproving for return to service the aircraft, airframe, aircraft engine, propeller, appliance, component part, or portions thereof;
 - (4) If the aircraft is found to be airworthy and approved for return to service, the following or a similarly worded statement—I certify that this aircraft has been inspected in accordance with (insert type) inspection and was determined to be in airworthy condition;
 - (5) If the aircraft is not approved for return to service because of needed maintenance, non-compliance with the applicable specifications, airworthiness directives, or other approved data, the following or a similarly worded statement—I certify that this aircraft has been inspected in accordance with (insert type) inspection and a list of discrepancies and unairworthy items (date) has been provided for the aircraft owner or operator; and
 - (6) If an inspection is conducted under an inspection program provided for in this Rules and Standards, the entry shall identify the inspection program accomplished, and contains a statement that the inspection was performed in accordance with the inspections and procedures for that particular program.
- (l) Listing of discrepancies. If the person performing any inspection required by this Rules and Standards finds that the aircraft is not airworthy or does not meet the applicable type certificate data sheet, airworthiness directives, or other approved data upon which its airworthiness depends, that person shall give the owner or lessee a signed and dated list of those discrepancies.
- (m) Reconstruction of lost or destroyed records can be done by reference to other records which reflect the time in service, research of records maintained by repair facilities and reference to records maintained by individual mechanics etc. When these things have been done and the record is still incomplete, the owner/operator may make a statement in the new record describing the loss and establishing the time in service based on the research and the best estimate of time in service. The reconstructed records should be submitted to the competent authority for acceptance.

NOTE: Additional maintenance may be required.

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6.5.1.8 AIRWORTHINESS/MAINTENANCE DATA

- (a) The organization shall hold and use applicable current maintenance data in the performance of maintenance, including modifications and repairs. 'Applicable' means relevant to any aircraft, component or process specified in the organization's approval class rating schedule and in any associated capability list. In the case of maintenance data provided by an operator or customer, the organization shall hold such data when the work is in progress.
- (b) For the purposes of this Ethiopian Civil Aviation Rules and Standards, applicable maintenance data shall be any of the following:
 - (1) Any applicable requirement, procedure, operational directive or information issued by the ECAA;
 - (2) Any applicable airworthiness directive;
 - (3) Instructions for continuing airworthiness, issued by type certificate holders supplementary type certificate holders, any other organization required to publish such data;
 - (4) Any applicable standard, such as but not limited to, maintenance standard practices recognized by the ECAA as a good standard for maintenance;
 - (5) Any applicable data issued in accordance with paragraph (d).
- (c) The organization shall establish procedures to ensure that if found, any inaccurate, incomplete or ambiguous procedure, practice, information or maintenance instruction contained in the maintenance data used by maintenance personnel is recorded and notified to the author of the maintenance data.
- (d) The organization may only modify maintenance instructions in accordance with a procedure specified in the maintenance organization's Maintenance Procedures Manual. With respect to those changes, the organization shall demonstrate that they result in equivalent or improved maintenance standards and shall inform the type-certificate holder of such changes. Maintenance instructions for the purposes of this paragraph means instructions on how to carry out the particular maintenance task: they exclude the engineering design of repairs and modifications.
- (e) The organization shall provide a common work card or worksheet system to be used throughout relevant parts of the organization. In addition, the organization shall either transcribe accurately the maintenance data contained in paragraphs (b) and (d) onto such work cards or worksheets or make precise reference to the particular maintenance task or tasks contained in such maintenance data. Work cards and worksheets may be computer generated and held on an electronic database subject to both adequate safeguards against unauthorized alteration and a back-up electronic database which shall be updated within 24 hours of any entry made to the main electronic database. Complex maintenance

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tasks shall be transcribed onto the work cards or worksheets and subdivided into clear stages to ensure a record of the accomplishment of the complete maintenance task. Where the organization provides a maintenance service to an aircraft operator who requires their work card or worksheet system to be used then such work card or worksheet system may be used. In this case, the organization shall establish a procedure to ensure correct completion of the aircraft operators' work cards or worksheets.

- (f) The organization shall establish a procedure to ensure that maintenance data it controls is kept up to date. In the case of operator/customer controlled and provided maintenance data, the organization shall be able to show that it has written confirmation from the operator/customer that all such maintenance data is up to date or it has work orders specifying the amendment status of the maintenance data to be used or it can prove that it is on the operator/customer maintenance data amendment distribution list.
- (g) The organization shall ensure that all applicable maintenance data is kept current and made readily available for use to all maintenance personnel who require access to that data to perform their duties.
- (h) The IS: 6.5.1.8 contains detailed requirements concerning airworthiness/maintenance data.

6.5.1.9 REPORTING OF UNAIRWORTHY CONDITIONS

- (a) The AMO shall report to the Authority and the aircraft design organization of the State of Design any identified condition / service difficulty reporting or occurrence reporting/ that could present a serious hazard to the aircraft.
- (b) Reports shall be made on a form and in a manner prescribed by the Authority and contain all pertinent information about the condition known to the AMO. The report shall contain at least the following items:-
 - (1) Aircraft registration number.
 - (2) Type, make and model of the article.
 - (3) Date of the discovery of the failure, malfunction, or defect.
 - (4) Time since last overhaul, if applicable.
 - (5) Apparent cause of the failure, malfunctions, or defects.
 - (6) Other pertinent information that is necessary for more complete identification, determination of seriousness, or corrective action.
- (c) Where the AMO is contracted by an AOC holder to carry out maintenance, that AMO shall report to the AOC holder any condition affecting the aircraft or aeronautical product.
- (d) Reports shall be made as soon as practicable, but in any case within three days of the AMO identifying the condition to which the report relates.

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6.5.1.10 AUTHORITY TO CONDUCT INSPECTIONS

- (a) Each approved maintenance organization must allow the Authority to inspect that approved maintenance organization and any of its contract maintenance facilities at any time to determine compliance with this part. Arrangements for maintenance, preventive maintenance, or modifications by a contractor must include provisions for inspections of the contractor by the Authority.

6.5.1.11 AMO PERFORMANCE STANDARDS

- (a) Each approved maintenance organization that performs any maintenance, preventive maintenance, modifications for an air operator certificated under Part 9 having an approved maintenance program under Part 9.3.2.11 shall perform that work in accordance with the AOC holder's manuals.
- (b) Except as provided in paragraph (a), each approved maintenance organization shall perform its maintenance and modification operations in accordance with the applicable standards in Part 5, Airworthiness. It shall maintain, in current condition, all manufacturer's service manuals, instructions, and service bulletins that relate to the articles that it maintains or modifies.
- (c) In addition, each approved maintenance organization with an avionics rating shall comply with those sections in Part 5 that apply to electronic systems, and shall use materials that conform to approved specifications for equipment appropriate to its rating. It shall use test apparatus, shop equipment, performance standards, test methods, modifications, and calibrations that conform to the manufacturer's specifications or instructions, approved specification, and if not otherwise specified, to accepted good practices of the aircraft avionics industry.

6.5.1.12 Acceptance of components

- (a) All components shall be classified and appropriately segregated into the following categories:
 - (1) Components other than those under paragraphs (a) (1) (i) and (a) (2) which are in a satisfactory condition, released on AWS Form 7 or, EASA Form 1, or FAA Form 8130-3.
 - (i) Restored complete engine and engine modules which are in a satisfactory condition released on an AWS Form 7 by an appropriately rated ECAA approved AMO.
 - (ii) Components authorized to be manufactured under appropriate Civil Aviation Requirements.
 - (2) Unserviceable components which shall be maintained in accordance with this section.
 - (3) Unsalvageable components which are classified in accordance with paragraph (d).
 - (4) Standard parts used on an aircraft, engine, propeller or other aircraft component when specified in the manufacturer's illustrated parts catalogue and/or the maintenance data.
 - (5) Material both raw and consumable used in the course of maintenance when the organization is satisfied that the material meets the required specification and has appropriate traceability. All material must be accompanied by documentation clearly

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relating to the particular material and containing conformity to specification statement plus both the manufacturing and supplier source.

- (b) Prior to installation of a component, the organization shall ensure that the particular component is eligible to be fitted when different modification and/or airworthiness directive standards may be applicable.
- (c) Components which have reached their certified life limit or contain a non-repairable defect shall be classified as unsalvageable and shall not be permitted to re-enter the component supply system unless certified life limits have been extended or a repair solution has been approved.
- (d) The following types of components shall typically be classified as unsalvageable:
 - (1) Components with non-repairable defects, whether visible or not to the naked eye;
 - (2) Components that do not meet design specifications, and cannot be brought into conformity with such specifications;
 - (3) Components subjected to unacceptable modification or rework that is irreversible;
 - (4) Certified life-limited parts that have reached or exceeded their certified life limits, or have missing or incomplete records;
 - (5) Components that cannot be returned to airworthy condition due to exposure to extreme forces, heat or adverse environment;
 - (5) Components for which conformity with an applicable airworthiness directive cannot be accomplished;
 - (6) Components for which maintenance records and/or traceability to the manufacturer cannot be retrieved.

- (b) It is common practice for possessors of aircraft components to dispose of unsalvageable components by selling, discarding, or transferring such items. In some instances, these items have reappeared for sale and in the active parts inventories of the aviation community. Misrepresentation of the status of components and the practice of making such items appear serviceable has resulted in the use of unsalvageable nonconforming components. Therefore organizations disposing of unsalvageable aircraft components should consider the possibility of such components later being misrepresented and sold as serviceable components. Caution should be exercised to ensure that unsalvageable components are disposed of in a manner that does not allow them to be returned to service.

6.5.1.13 FABRICATION OF PARTS

- (a) The organization may fabricate a restricted range of parts to be used in the course of undergoing work within its own facilities provided procedures are identified in the Maintenance Procedures Manual.
- (b) The agreement by the authority for the fabrication of parts by the approved maintenance organization shall be formalized through the approval of a detailed procedure in the Maintenance Procedures Manual.
- (c) Fabrication, inspection, assembly and test shall be clearly within the technical and procedural capability of the organization.

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- (d) All necessary data to fabricate the part should be approved either by the Authority or the type certificate (TC) holder or design organization approval holder, or supplemental type certificate (STC) holder.
- (e) Items fabricated by an organization approved under ECARAS Part 6 may only be used by that organization in the course of overhaul, maintenance, modifications, or repair of aircraft or components undergoing work within its own facility. The permission to fabricate does not constitute approval for manufacture, or to supply externally and the parts do not qualify for export certification. This prohibition also applies to the bulk transfer of surplus inventory, in that locally fabricated parts are physically segregated and excluded from any delivery certification.
- (f) The data specified in paragraph (c) may include repair procedures involving the fabrication of parts. Where the data on such parts is sufficient to facilitate fabrication, the parts may be fabricated by an organization approved under ECARAS Part 6. Care should be taken to ensure that the data include details of part numbering, dimensions, materials, processes, and any special manufacturing techniques, special raw material specification or/and incoming inspection requirement and that the approved organization has the necessary capability. That capability should be defined by way of Maintenance Procedures Manual content. Where special processes or inspection procedures are defined in the approved data which are not available at the organization the organization cannot fabricate the part unless the TC/STC-holder gives an approved alternative.
- (g) Examples of fabrication under the scope of ECARAS Part 6 approval can include but are not limited to the following:
 - (1) Fabrication of bushes, sleeves and shims.
 - (2) Fabrication of secondary structural elements and skin panels.
 - (3) Fabrication of control cables.
 - (4) Fabrication of flexible and rigid pipes.
 - (5) Fabrication of electrical cable looms and assemblies.
 - (6) Formed or machined sheet metal panels for repairs.
- (h) All the above fabricated parts shall be in accordance with data provided in overhaul or repair manuals, modification schemes and service bulletins, drawings or otherwise approved by the authority.

Note: It is not acceptable to fabricate any item to pattern unless an engineering drawing of the item is produced which includes any necessary fabrication processes and which is acceptable to the competent authority.

- (i) Where a TC-holder or an approved production organization is prepared to make available complete data which is not referred to in aircraft manuals or service bulletins but provides manufacturing drawings for items specified in parts lists, the fabrication of these items is not considered to be within the scope of an approval unless agreed otherwise by the authority in accordance with a procedure specified in the Maintenance Procedures Manual.

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- (j) Any locally fabricated part shall be subjected to an inspection stage before, separately, and preferably independently from, any inspection of its installation. The inspection should establish full compliance with the relevant manufacturing data, and the part should be unambiguously identified as fit for use by stating conformity to the approved data. Adequate records should be maintained of all such fabrication processes including, heat treatment and the final inspections. All parts, except those having not enough space, shall carry a part number which clearly relates it to the manufacturing/inspection data. Additional to the part-number the organization's identity should be marked on the part for traceability purposes.

IMPLEMENTING STANDARDS

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IS: 6.2.1.3 APPROVED MAINTENANCE ORGANISATION CERTIFICATE

ECAA FORM: AWS-006

APPROVED MAINTENANCE ORGANIZATION CERTIFICATE		
ISSUING AUTHORITY: ETHIOPIAN CIVIL AVIATION AUTHORITY		
Approval reference No:	Organization Name: Registered Address: Telephone: Email:	Expiration date:
CLASS(ES) AND RATING(S) AUTHORIZED		
CLASS	RATING	LIMITATIONS
Aircraft Maintenance		
Engine Maintenance		
Component Maintenance		
Specialized Maintenance		
<p><u>Terms of Approval</u></p> <p>This certificate certifies that _____ is authorized to engage in activities specified in the Terms of Approval annexed hereto, subject to the compliance with the _____ and the latest maintenance organization's procedures manual.</p> <p>Locations of maintenance facilities: As per _____ of the latest Maintenance organization's procedure manual.</p> <p>This Certificate shall remain valid during the period of validity specified above unless it is surrendered, superseded, suspended or revoked.</p>		
Name :		Date of original issue: _____
Title:		
Signature: _____		Date of current issue: _____

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IS: 6.2.1.5 Application For Approved Maintenance Organization Certificate And Ratings

	Company Name ETHIOPIAN CIVIL AVIATION AUTHORITY	Document No. ECAA/AWS/OF/008
Document Title: Application For Approved Maintenance Organization Certificate And Ratings		Issue No. 1
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Ethiopian Civil Aviation Authority	Application for Approved Maintenance Organisation Certificate and/or Ratings			
1. Approved Maintenance Organisation Name, Number, Location and Address				
a. Official Name of Approved Maintenance Organisation:	Number:			
b. Location where business is conducted:				
c. Official Mailing Address of Approved Maintenance Organisation (Number, Street, City, State, & Postal Code)				
d. Doing Business As:				
2. Reasons for Submission				
<input type="checkbox"/> Original Application for Certificate and Rating <input type="checkbox"/> Change in Rating <input type="checkbox"/> Change in Location or Housing and Facilities <input type="checkbox"/> Change in Ownership <input type="checkbox"/> Other (Specify)				
3. Ratings Applied for:				
<input type="checkbox"/> Airframe <input type="checkbox"/> Class 1 <input type="checkbox"/> Class 2 <input type="checkbox"/> Class 3 <input type="checkbox"/> Class 4	<input type="checkbox"/> Powerplant <input type="checkbox"/> Class 1 <input type="checkbox"/> Class 2 <input type="checkbox"/> Class 3	<input type="checkbox"/> Propeller <input type="checkbox"/> Class 1 <input type="checkbox"/> Class 2	<input type="checkbox"/> Avionics/ Radio <input type="checkbox"/> Class 1 <input type="checkbox"/> Class 2 <input type="checkbox"/> Class 3	<input type="checkbox"/> Instrument <input type="checkbox"/> Class 1 <input type="checkbox"/> Class 2 <input type="checkbox"/> Class 3 <input type="checkbox"/> Class 4
<input type="checkbox"/> Accessories <input type="checkbox"/> Class 1 <input type="checkbox"/> Class 2 <input type="checkbox"/> Class 3	<input type="checkbox"/> Limited <input type="checkbox"/> Airframe <input type="checkbox"/> Powerplant <input type="checkbox"/> Propeller <input type="checkbox"/> Instruments	<input type="checkbox"/> Accessories <input type="checkbox"/> Landing Gear <input type="checkbox"/> Floats <input type="checkbox"/> Avionics/radio	<input type="checkbox"/> Rotor Blades <input type="checkbox"/> Fabric <input type="checkbox"/> Emergency Equip. <input type="checkbox"/> Non-Dest. Test <input type="checkbox"/> Other	<input type="checkbox"/> Specialised Service (List Process Specification(s))
4. List of Maintenance Functions contracted to an outside Maintenance Organisation:				
5. Applicants Certification				
Name of Owner (Include name(s) of individual Owner, all partners, or corporation name given the state, province, or country and date of incorporation)				
I hereby certify that I have been authorised by the approved maintenance organisation identified in Item 1 above to make this application and that statements attached hereto are true and correct to the best of my knowledge.				
Date:	Authorised Signature:	Print Name of Authorised Signature:	Title:	

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For CAA Use Only	Record of Action Approved Maintenance Organization Inspection	For CAA Use Only
6. Remarks (Identify by item number. Include deficiencies found and ratings denied)		
Findings – Recommendations A. AMO was found to comply with requirements of Part 6. B. AMO was found to comply with requirements of Part 6, except for deficiencies listed in Item 6. C. Recommend Certificate with rating applied for on application be issued. D. Recommend Certificate with rating applied for on application (EXCEPT those listed in Item 6) be issued.		8. Date of Inspection
9. ECAA Office	Signature(s) of Inspector(s)	Printed Names of Inspectors
10. Supervising or Assigned Inspector		
ACTION TAKEN APPROVED As shown on certificate issued on date shown	CERTIFICATE ISSUED Date	Inspector's Signature
		Inspector's Printed Name
		Title

IS: 6.2.1.12 QUALITY SYSTEM

- (a) In order to show compliance with 6.2.1.12, an AMO shall establish its quality system in accordance with the instruction and information contained in the following paragraphs.

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1.0. General

1.1 Terminology

- (a) The terms used in the context of the requirement for an AMO's quality system have the following meaning:
 - (1) **Accountable Manager.** The person acceptable to the Authority who has corporate authority for ensuring that all maintenance activities can be financed and carried out to the standard required by the Authority, and any additional requirements defined by the AMO.
 - (2) **Quality assurance.** Quality assurance, as distinguished from quality control, involves activities in the business, systems, and technical audit areas. A set of predetermined, systemic actions which are required to provide adequate confidence that a product or service satisfies quality requirements.

1.2 Quality Policy

- 1.2.1 An AMO shall establish a formal, written quality policy statement that is a commitment by the accountable manager as to what the quality system is intended to achieve. The quality policy should reflect the achievement and continued compliance with the Rules and Standards together with any additional standards specified by the AMO.
- 1.2.2 The accountable manager is an essential part of the AMO management organization. The term "accountable manager" is intended to mean the Chief Executive/President/Managing Director/General Manager, etc. of the AMO, who by virtue of his or her position has overall responsibility (including financial) for managing the organization.
- 1.2.3 The accountable manager will have overall responsibility for the AMO quality system, including the frequency, format and structure of the internal management evaluation activities as prescribed in paragraph 3.9 below.

1.3 Purpose of the Quality System

- 1.3.1 The quality system shall enable the AMO to monitor compliance with these rules and standards, the AMO's manual system, and any other standards specified by the AMO, or the Authority, to ensure safe operations and airworthy aircraft.

1.4 Quality Manager

- 1.4.1 The function of the quality manager to monitor compliance with, and the adequacy of, procedures required to ensure safe operational practices and airworthy aircraft as required by these rules and standards may be carried out by more than one person by means of different, but complementary, quality assurance programs.
- 1.4.2 The primary role of the quality manager is to verify, by monitoring activity in the field of, maintenance, that the standards required by the Authority, and any additional requirements

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defined by the AMO, are being carried out under the supervision of the relevant required management personnel.

1.4.3 The quality manager should be responsible for ensuring that the quality assurance programme is properly established, implemented and maintained.

1.4.4 The quality manager shall:

- (a) Report to the accountable manager;
- (b) Not be one of the required management personnel; and
- (c) Have access to all parts of the AMO's, and as necessary, any sub-contractor's organization.

1.4.5 In the case of small/very small AMO's, the posts of the Accountable Manager and quality manager may be combined.

2.0 Quality System

2.1 Introduction

2.1.1 The AMO's quality system shall ensure compliance with and adequacy of operational and maintenance activities requirements, standards, and procedures.

2.1.2 The AMO should specify the basic structure of the quality system applicable to the operation.

2.1.3 The quality system should be structured according to the size and complexity of the organization to be monitored.

2.2 Scope

2.1.4 As a minimum, the quality system should address the following:

- (a) The provisions of these rules and standards;
- (b) The AMO's additional standards and operating practices;
- (c) The AMO's quality policy;
- (d) The AMO's organizational structure;
- (e) Responsibility for the development, establishment and management of the quality system;
- (f) Documentation, including manuals, reports and records;
- (g) Quality procedures;
- (h) Quality assurance program;

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- (i) The required financial, material and human resources;
- (j) Training requirements.

2.2.2 The quality system should include a feedback system to the accountable manager to ensure that corrective actions are both identified and promptly addressed. The feedback system should also specify who is required to rectify discrepancies and non-compliance in each particular case, and the procedure to be followed if corrective action is not completed within an appropriate timescale.

2.3 Relevant Documentation

2.3.1 Relevant documentation includes the relevant part of the organization's manual system.

2.3.2 In addition, relevant document should include the following:

- (a) Quality policy;
- (b) Terminology;
- (c) Specified maintenance standards;
- (d) A description of the organization;
- (e) The allocation of duties and responsibilities;
- (f) Operational procedures to ensure regulatory compliance;
- (g) Accident prevention and flight safety programme;
- (h) The quality assurance programme, reflecting:
 - (1) Schedule of the monitoring process;
 - (2) Audit procedures;
 - (3) Reporting procedures;
 - (4) Follow-up and corrective action procedures;
 - (5) Recording system;
 - (6) The training syllabus; and
 - (7) Document control.

3.0 Quality Assurance Programme

3.1 Introduction

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- 3.1.1 The quality assurance programme shall include all planned and systematic actions necessary to provide confidence that all maintenance is conducted in accordance with all applicable requirements, standards and procedures.
- 3.1.2 When establishing a quality assurance programme, consideration shall be given to at least the following:
- (a) Quality inspection;
 - (b) Audit;
 - (c) Auditors;
 - (d) Auditor's independence;
 - (e) Audit scope;
 - (f) Audit scheduling;
 - (g) Monitoring and corrective action; and
 - (h) Management evaluation.

3.2 Quality Inspection

- 3.2.1 The primary purpose of a quality inspection is to observe a particular event/action/document, etc. in order to verify whether established procedures and requirements are followed during the accomplishment of that event and whether the required standard is achieved.
- 3.2.2 Typical subject areas for quality inspections are:
- (1) Facilities size and segregation;
 - (2) Office accommodation;
 - (3) Work environment;
 - (4) Storage;
 - (5) Management changes;
 - (6) Staff numbers and man-hour plan;
 - (7) Competence process;
 - (8) Qualifying certifying staff;
 - (9) Records of certifying staff;

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- (10) Issue of authorizations;
- (11) Adequate equipment;
- (12) Equipment control and calibration;
- (13) Approved data held;
- (14) Modified maintenance data;
- (15) Data availability;
- (16) Data up to date;
- (17) Aircraft release;
- (18) Release document contents;
- (19) Release control;
- (20) Details on work documents;
- (21) Operator's copy of release;
- (22) Record retention;
- (23) Reporting unairworthy findings;
- (24) Clear work orders;
- (25) Procedures per Maintenance Procedures Manual;
- (26) Suppliers and subcontractors;
- (27) Acceptance of parts;
- (28) Parts control in stores;
- (29) Use of tools;
- (30) Cleanliness standards;
- (31) Control of repairs;
- (32) Aircraft Maintenance Programme completion;
- (33) Airworthiness directive control;

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- (34) Control of modifications;
- (35) Control of working documents;
- (36) Base maintenance defects;
- (37) Defective parts to stores;
- (38) Parts to outside contractors;
- (39) Computer maintenance systems;
- (40) Engine running;
- (41) Aircraft procedures;
- (42) Line maintenance control parts;
- (43) Line servicing control;
- (44) Line defect control;
- (45) Aircraft Technical Log – Maintenance Records section completion;
- (46) Pool and loan parts;
- (47) Return defective parts to base;
- (48) Product maintenance exemption control;
- (49) Procedures deviation control;
- (50) Special services control (NDI);
- (51) Contractors working teams;
- (52) Product audit;
- (53) Privileges and locations control;
- (54) Limitation control; and
- (55) Control of changes.

3.2.3 Acceptable methods for quality inspections for maintenance include:

- (a) Product sampling - the part inspection of a representative sample of the aircraft fleet;
- (b) Defect sampling - the monitoring of defect rectification performance; and

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(c) Concession sampling - the monitoring of any concession to not carry out maintenance on time;

3.3 Audit

3.3.1 An audit is a systematic and independent comparison of the way in which an operation is being conducted against the way in which the published operational procedures say it must be conducted.

3.3.2 Audits shall include at least the following quality procedures and processes:

- (a) A statement explaining the scope of the audit;
- (b) Planning and preparation;
- (c) Gathering and recording evidence; and
- (d) Analysis of the evidence.

3.3.3 Techniques that contribute to an effective audit are:

- (a) Interviews or discussions with personnel;
- (b) A review of published documents;
- (c) The examination of an adequate sample of records;
- (d) The witnessing of the activities that make up the operation; and
- (e) The preservation of documents and the recording of observations.

3.4. Auditors

3.4.1 An AMO shall decide, depending upon the complexity of the organization, whether to make use of a dedicated audit team or a single auditor. In any event, the auditor or audit team shall have relevant maintenance experience.

3.4.2 The responsibilities of the auditors shall be clearly defined in the relevant documentation.

3.5 Auditor's Independence

3.5.1 Auditors shall not have any day-to-day involvement in the area of the maintenance activity that is to be audited. An AMO may, in addition to using the services of full-time dedicated personnel belonging to a separate quality department, undertake the monitoring of specific areas or activities by the use of part-time auditors. An AMO whose structure and size does not justify the establishment of full-time auditors, may undertake the audit function by the use of part-time personnel from within its own organization or from an external source under the terms of an agreement acceptable to the Authority. In all cases the AMO shall develop suitable procedures to ensure that persons directly responsible for the activities to be audited are not selected as part

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of the auditing team. Where external auditors are used, it is essential that any external specialist is familiar with the type of operation and/or maintenance conducted by the operator.

3.5.2 The AMO's quality assurance programme shall identify the persons within the company who have the experience, responsibility and Authority to:

- (a) Perform quality inspections and audits as part of ongoing quality assurance;
- (b) Identify and record any concerns or findings, and the evidence necessary to substantiate such concerns or findings;
- (c) Initiate or recommend solutions to concerns or findings through designated reporting channels;
- (d) Verify the implementation of solutions within specific timescales; and
- (e) Report directly to the quality manager.

3.6 Audit Scope

3.6.1 AMO's are required to monitor compliance with the operational and maintenance procedures they have designed to ensure safe operations, airworthy aircraft and the serviceability of both operational and safety equipment. In doing so they shall as a minimum, and where appropriate, monitor:

- (a) Organization;
- (b) Plans and company objectives;
- (c) AMO certification (AMO/Operations specifications)
- (d) Supervision;
- (e) Manuals, logs, and records;
- (f) Duty time limitations, rest requirements, and scheduling;
- (g) Maintenance programmes and continued airworthiness;
- (h) Airworthiness directives management;
- (i) Maintenance accomplishment;
- (j) Defect deferral;
- (k) Dangerous goods;
- (l) Security;
- (m) Training.

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3.7 Audit Scheduling

- 3.7.1 A quality assurance program shall include a defined audit schedule and a periodic review cycle area by area. The schedule shall be flexible, and allow unscheduled audits when trends are identified. Follow-up audits shall be scheduled when necessary to verify that corrective action was carried out and that it was effective.
- 3.7.2 An AMO shall establish a schedule of audits to be completed during a specified calendar period. All aspects of the operation shall be reviewed within every 12 month period in accordance with the programme unless an extension to the audit period is accepted as explained below. An AMO may increase the frequency of audits at its discretion but shall not decrease the frequency without the agreement of the Authority. Audit frequency shall not be decreased beyond a 18 month period interval.
- 3.7.3 When an AMO defines the audit schedule, significant changes to the management, organization, operation, or technologies shall be considered as well as changes to the regulatory requirements.

3.8 Monitoring and Corrective Action

- 3.8.1 The aim of monitoring within the quality system is primarily to investigate and judge its effectiveness and thereby to ensure that defined policy and maintenance standards are continuously complied with. Monitoring activity is based upon quality inspections, audits, corrective action and follow-up. The AMO **shall** establish and publish a quality procedure to monitor regulatory compliance on a continuing basis. This monitoring activity shall be aimed at eliminating the causes of unsatisfactory performance.
- 3.8.2 Any non-compliance identified as a result of monitoring shall be communicated to the manager responsible for taking corrective action or, if appropriate, the accountable manager. Such non-compliance shall be recorded, for the purpose of further investigation, in order to determine the cause and to enable the recommendation of appropriate corrective action.
- 3.8.3 The quality assurance programme shall include procedures to ensure that corrective actions are taken in response to findings. These quality procedures shall monitor such actions to verify their effectiveness and that they have been completed. Organizational responsibility and accountability for the implementation of corrective action resides with the department cited in the report identifying the finding. The accountable manager shall have the ultimate responsibility for resourcing the corrective active action and ensuring, through the quality manager, that the corrective action has re-established compliance with the standard required by the Authority, and any additional requirements defined by the operator.
- 3.8.4 Corrective action. Subsequent to the quality inspection/audit, the AMO shall establish:
- (a) The seriousness of any findings and any need for immediate corrective action;
 - (b) The origin of the finding;
 - (c) What corrective actions are required to ensure that the non-compliance does not recur;

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- (d) A schedule for corrective action;
- (e) The identification of individuals or departments responsible for implementing corrective action;
- (f) Allocation of resources by the accountable manager, where appropriate.

3.8.5 The quality manager shall:

- (a) Verify that corrective action is taken by the manager responsible in response to any finding of non-compliance;
- (b) Verify the corrective action includes the elements outlined in paragraph 3.8.4 above;
- (c) Monitor the implementation and completion of corrective action;
- (d) Provide management with an independent assessment of corrective action; implementation and completion; and
- (e) Evaluate the effectiveness of corrective action through follow-up process.

3.9 Management Evaluation

3.9.1 A management evaluation is a comprehensive, systematic, documented review by the management of the quality system, policies and procedures, and shall consider:

- (a) The results of quality inspections, audits and any other indicators; and
- (b) The overall effectiveness of the management organization in achieving stated objectives.

3.9.2 A management **shall** identify and correct trends, and prevent, where possible, future non-conformities. Conclusions and recommendations made as a result of an evaluation shall be submitted in writing to the responsible manager for action. The responsible manager shall be an individual who has the Authority to resolve issues and take action.

3.9.3 The accountable manager shall decide upon the frequency, format and structure of internal management evaluation activities.

3.10 Recording

3.10.1 Accurate, complete and readily accessible records documenting the results of the quality assurance programme shall be maintained by the AMO. Records are essential data to enable an operator to analyze and determine the root causes of non-conformity, so that areas of non-compliance can be identified and addressed.

3.10.2 The following records shall be retained for a period of 5 years:

- (a) Audit schedules;
- (b) Quality inspection and audit reports;

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- (c) Responses to findings;
- (d) Corrective action reports;
- (e) Follow-up and closure reports; and
- (f) Management evaluation reports.

4.0 Quality Assurance Responsibility for Sub-Contractors

4.1 Sub-Contractors

4.1.1 AMO's may decide to sub-contract out certain activities to external agencies for the provision of services related to areas such as:

- (a) Maintenance;
- (b) Training; and
- (c) Manual preparation.

4.1.2 The ultimate responsibility for the product or service provided by the sub-contractor always remains with the AMO. A written agreement shall exist between the AMO and the sub-contractor clearly defining the safety related services and quality to be provided. The sub-contractor's safety related activities relevant to the agreement shall be included in the AMO's quality assurance programme.

4.1.3 The AMO shall ensure that the sub-contractor has the necessary authorization/approval when required and commands the resources and competence to undertake the task.

5.0. Quality System Training

5.1 General

5.1.1 An AMO shall establish effective, well planned and resourced quality related briefing for all personnel.

5.1.2 Those responsible for managing the quality system shall receive training covering:

- (a) An introduction to the concept of the quality system;
- (b) Quality management;
- (c) The concept of quality assurance;
- (d) Quality manuals;
- (e) Audit techniques;
- (f) Reporting and recording; and
- (g) The way in which the quality system will function in the company.

5.1.3 Time shall be provided to train every individual involved in quality management and for briefing the remainder of the employees. The allocation of time and resources shall be governed by the size

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and complexity of the AMO.

5.2 Sources of Training

5.2.1 Quality management courses are available from the various National or International Standards Institutions, and an AMO shall consider whether to offer such courses to those likely to be involved in the management of quality systems. AMO's with sufficient appropriately qualified staff shall consider whether to carry out in-house training.

6.0 Organizations with 20 or Less Full-Time Employees

6.1 Introduction

6.1.1 The requirement to establish and document a quality system and to employ a quality manager applies to all AMO's. References to large and small operators elsewhere in these rules and standards are governed by aircraft capacity (i.e. more or less than 20 seats) and by mass (i.e. greater or less than 10 tonnes maximum take-off mass). Such terminology is not relevant when considering the scale of an operation and the quality system required. In the context of quality systems therefore, operators shall be categorized according to the number of full time staff employees.

6.2 Scale of Operation

6.2.1 AMO's who employ 5 or less full time staff are considered to be "very small" while those employing between 6 and 20 full time employees are regarded as "small" operators as far as quality systems are concerned. Full-time in this context means employed for not less than 35 hours per week excluding vacation periods.

6.2.2 Complex quality systems could be inappropriate for small or very small operators and the clerical effort required to draw up manuals and quality procedures for a complex system may stretch their resources. It is therefore accepted that such operators/**AMO** may tailor their quality systems to suit the size and complexity of their operation and allocate resources accordingly.

6.3 Quality System for Small/Very Small AMO's

6.3.1 For small and very small AMO's it may be appropriate to develop a quality assurance programme that employs a checklist. The checklist shall have a supporting schedule that requires completion of all checklist items within a specified timescale, together with a statement acknowledging completion of a periodic review by top management. An occasional independent overview of the checklist content and achievement of the quality assurance shall be undertaken.

6.3.2 The "small" AMO may decide to use internal or external auditors or a combination of the two. In these circumstances it would be acceptable for external specialists and or qualified organizations to perform the quality audits on behalf of the quality manager.

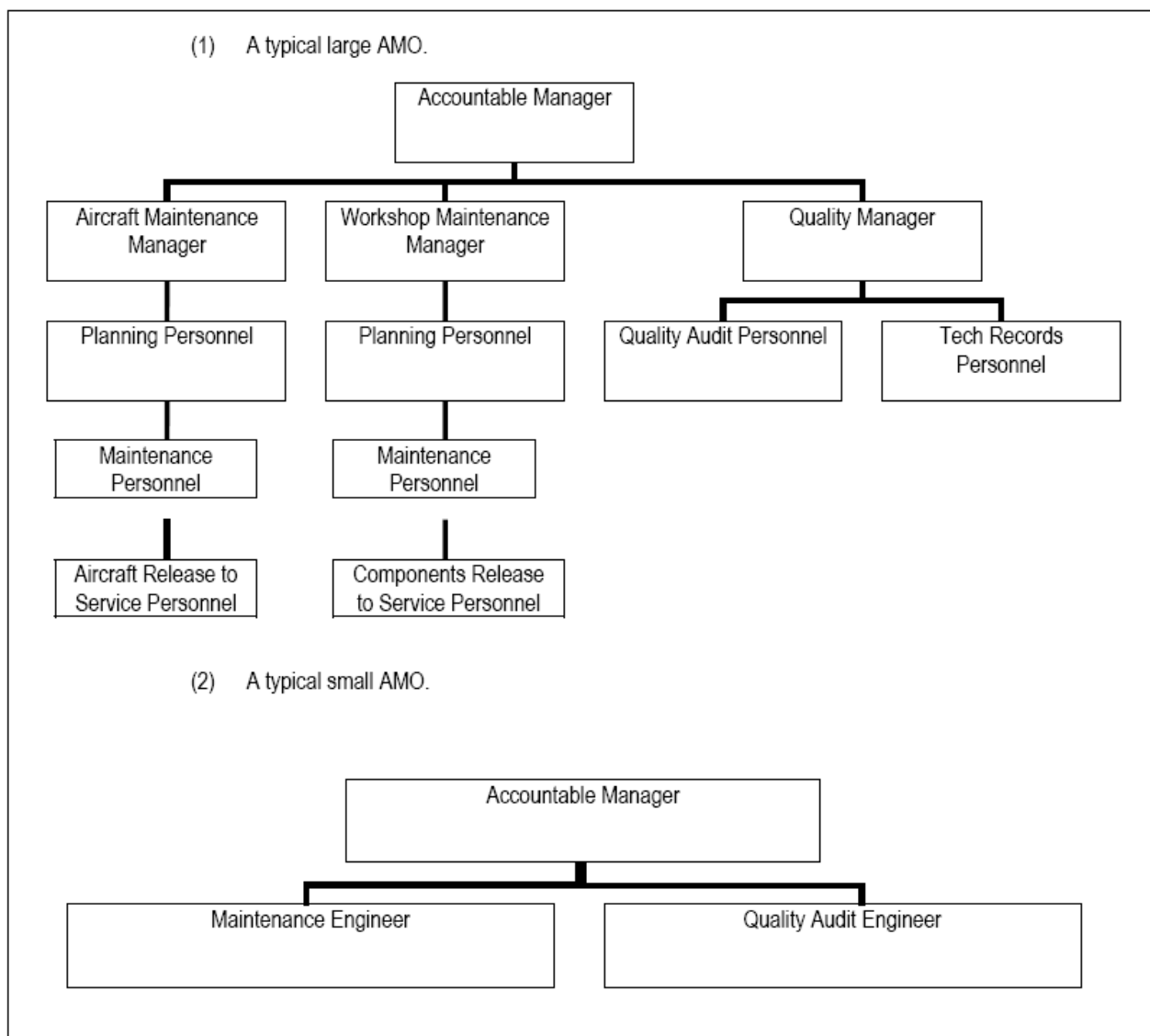
6.3.3 If the independent quality audit function is being conducted by external auditors, the audit schedule shall be shown in the relevant documentation.

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6.3.4 Whatever arrangements are made, the operator retains the ultimate responsibility for the quality system and especially the completion and follow-up of corrective actions.

Quality System – Organization Examples

(a) The following diagrams illustrate two typical examples of AMO Quality organizations.



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IS: 6.3.1.2 HOUSING AND FACILITY REQUIREMENTS

- (a) For ongoing maintenance of aircraft, aircraft hangars shall be available and large enough to accommodate aircraft during maintenance activities.
- (b) Where the hangar is not owned by the AMO, it is recommended to:
 - (1) Establish proof of authorization to use hangar;
 - (2) Demonstrate sufficiency of hangar space to carry out planned base maintenance by preparing a projected aircraft hangar visit plan relative to the maintenance program;
 - (3) Update the aircraft hangar visit plan on a regular basis;
 - (4) Ensure, for aircraft component maintenance, aircraft component workshops are large enough to accommodate the components on planned maintenance;
 - (5) Ensure aircraft hangar and aircraft component workshop structures prevent the ingress of rain, hail, ice, snow, wind and dust, etc.;
 - (6) Ensure workshop floors are sealed to minimize dust generation; and
 - (7) Demonstrate access to hangar accommodation for usage during inclement weather for minor scheduled work and/or lengthy defect rectification.
- (c) Aircraft maintenance staff shall be provided with an area where they may study maintenance instructions and complete maintenance records in a proper manner.
- (d) Hangars used to house aircraft together with office accommodation shall be such as to insure a clean, effective and conformable working environment.
 - (1) Temperatures shall be maintained at a comfortable level;
 - (2) Dust and any other airborne contamination shall be kept to a minimum and not permitted to reach a level in the work task area where visible aircraft/component surface contamination is evident;
 - (3) Lighting shall be such as to insure each inspection and maintenance task can be carried out; and
 - (4) Noise levels shall not be permitted to rise to the point of distracting personnel from carrying out inspection tasks. Where it is impractical to control the noise source, such personnel shall be provided with the necessary personal equipment to stop excessive noise causing distraction during inspection tasks.
- (e) Where a particular maintenance task requires the application of specific environmental conditions different to the foregoing, then such conditions shall be observed. (Specific conditions are identified in the approved maintenance instructions.)

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- (f) Where the working environment for line maintenance deteriorates to an unacceptable level with respect to temperature, moisture, hail, ice, snow, wind, light, dust/other airborne contamination; the particular maintenance or inspection tasks shall be suspended until satisfactory conditions are re- established.
- (g) For both base and line maintenance where dust or other airborne contamination results in visible surface contamination, all susceptible systems shall be sealed until acceptable conditions are re- established.
- (h) Storage facilities for serviceable aircraft components shall be clean, well ventilated and maintained at an even dry temperature to minimize the effects of condensation.
- (i) Manufacturer and standards recommendations shall be followed for specific aircraft components.
- (j) Storage racks shall provide sufficient support for large aircraft components such that the component is not distorted.
- (k) All aircraft components, wherever practicable, shall remain packaged in protective material to minimize damage and corrosion during storage.

IS: 6.3.1.3 EQUIPMENT, TOOLS, AND MATERIAL

- (a) All applicable tools, equipment, and test equipment used for product acceptance and/or for making a finding of airworthiness shall be traceable to the Ethiopia National Standards.
- (b) Except as provided in paragraph (a), in the case of foreign manufactured tools, equipment, and test equipment, the standard provided by the country of manufacture may be used if approved by the Authority.
- (c) Where the manufacturer specifies a particular tool, equipment, or test equipment then that tool, equipment, or test equipment shall be used unless the manufacturer has identified the use of an equivalent.
- (d) Except as provided in paragraph (c), tools, equipment, or test equipment other than that recommended by the manufacturer will be acceptable based on at least the following:
 - (1) The AMO shall have a procedure in the Maintenance Procedures Manual if it intends to use equivalent tools, equipment, or test equipment other than that recommended by the manufacturer.
 - (2) The AMO shall have a program to include:
 - (i) A description of the procedures used to establish the competence of personnel that make the determination of equivalency to tools, equipment, or test equipment.
 - (ii) Conducting and documenting the comparison made between the specification of the tool, equipment or test equipment recommended by the manufacturer

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and the equivalent tool, equipment, or test equipment proposed.

- (iii) Ensuring that the limitations, parameters, and reliability of the proposed tool, equipment, or test equipment are equivalent to the manufacturer's recommended tools, equipment, or test equipment.
 - (iv) Ensuring that the equivalent tool, equipment, or test equipment is capable of performing the appropriate maintenance function, all normal tests, or calibrations, and checking all parameters of the aircraft or aeronautical product undergoing maintenance or calibration.
- (3) The AMO shall have full control of the equivalent tool, equipment, or test equipment (i.e. ownership, lease, or other legal arrangement, etc.)
- (e) An AMO approved for base maintenance shall have sufficient aircraft access equipment and inspection platforms/docking such that the aircraft may be properly inspected.
 - (f) The AMO shall have a procedure to inspect/service and, where appropriate, calibrate tools, equipment, and test equipment on a regular basis and indicate to users that an item is within any inspection or service or calibration time limit.
 - (g) The AMO shall have a procedure if it uses a standard (primary, secondary or transfer standards) for performing calibration, to ensure that standard cannot be used to perform maintenance.
 - (h) A clear system of labeling all tooling, equipment and test equipment shall be used to give information on when the next inspection or service or calibration is due, and give status information if the item is unserviceable for any other reason where it may not be obvious.
 - (i) A clear system of labeling all tooling, equipment, and test equipment shall be used to give information on when such tooling, equipment, and test equipment is not used for product acceptance and/or for making a finding of airworthiness.
 - (j) A register shall be maintained for all calibrated tools, equipment and test equipment together with a record of calibrations and standards used.
 - (k) Inspection, service, or calibration on a regular basis shall be in accordance with the equipment manufacturers' instructions except where the AMO can show by results that a different time period is appropriate in a particular case and is acceptable to the Authority.

IS: 6.4.1.1 PERSONNEL REQUIREMENTS

- (a) The AMO functions shall be subdivided under individual managers or combined in any number of ways, dependent upon the size of the AMO.
- (b) The AMO shall have, dependent upon the extent of approval, the following:
 - (1) A base maintenance manager.

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- (2) A line maintenance manager.
 - (3) A workshop manager and a quality manager, all of whom shall report to the accountable manager. In small AMOs, one or more of the above positions may be combined subject to approval by the Authority.
- (c) The Accountable Manager shall be responsible for ensuring that all necessary resources are available to accomplish maintenance required to support the AMO's approval.
- (d) The Base Maintenance Manager shall be responsible for:
 - (1) Ensuring that all maintenance required to be carried out in the hangar, plus any defect rectification carried out during base maintenance, is carried out to specified design and quality standards; and
 - (2) Any corrective action resulting from quality compliance monitoring.
- (e) The Line Maintenance Manager shall be responsible for:
 - (1) Ensuring that all maintenance required to be carried out on the line, including line defect rectification, is performed to the required standards; and
 - (2) Any corrective action resulting from quality compliance monitoring.
- (f) The Workshop Manager shall be responsible for:
 - (1) Ensuring that all work on aircraft components is performed to required standards; and
 - (2) Any corrective action resulting from quality compliance monitoring.
- (g) The Quality Manager shall be responsible for:
 - (1) Monitoring the AMO's compliance with Part 6 of this Rules and Standards; and
 - (2) Requesting remedial action as necessary by the base maintenance manager/line maintenance manager/workshop manager or the accountable manager, as appropriate.
- (h) The AMO may adopt any title for managerial positions, but shall identify to the Authority the titles and persons chosen to carry out these functions.
- (i) Where an AMO chooses to appoint managers for all or any combination of the identified functions because of the size of the undertaking, these managers shall report ultimately through either the Base Maintenance Manager or Line Maintenance Manager or Workshop Manager or Quality Manager, as appropriate, to the accountable manager.
- (i) The managers specified in this subsection shall be identified and their credentials submitted to the Authority. To be accepted, such managers shall have relevant

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knowledge and satisfactory experience related to aircraft/aircraft component maintenance as appropriate in accordance with these rules and standards.

- (j) The AMO shall have a production man-hour plan showing that it has sufficient man-hours for the intended work. The planned absence (for training, vacations, etc.) shall be considered when developing the man-hour plan.
- (l) The maintenance man-hour plan shall relate to the anticipated maintenance work load except that when the organization cannot predict such workload, due to the short term nature of its contracts, then such plan shall be based upon the minimum maintenance workload needed for commercial viability. Maintenance work load includes all necessary work such as, but not limited to, planning, maintenance record checks, production of worksheets/cards in paper or electronic form, accomplishment of maintenance, inspection and the completion of maintenance records.
- (m) If an AMO is approved for base maintenance, the man-hours plan shall relate to the aircraft hangar visit plan. In the case of aircraft component maintenance, the maintenance man-hour plan shall relate to the aircraft component planned maintenance.
- (o) Quality monitoring compliance function man-hours shall be sufficient to meet the requirement of 6.2.1.12(f). Where quality monitoring staff perform other functions, the time allocated to such functions shall be taken into account in determining quality monitoring staff numbers.
- (p) The maintenance man-hour plans shall be reviewed at least every 3 months and updated when necessary.
- (q) Planners, mechanics, supervisors and certifying staff shall be assessed for competence by "on the job" evaluation or by examination relevant to their particular role within the AMO before unsupervised work is permitted.
- (r) To assist in the assessment of competence, job descriptions are recommended for each position. The assessment shall establish that:
 - (1) Planners are able to interpret maintenance requirements into maintenance tasks, and have an appreciation that they have no Authority to deviate from the aircraft maintenance program.
 - (2) Mechanics are able to carry out maintenance tasks to any standard specified in the maintenance instructions and will notify supervisors of mistakes requiring rectification to re- establish required maintenance standards.
 - (3) Supervisors are able to ensure that all required maintenance tasks are carried out and where not done or where it is evident that a particular maintenance task cannot be carried out to the maintenance instructions, then such problems will be reported to and agreed by the quality organization.

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- (4) Certifying staff are able to determine when the aircraft or aircraft component is and is not ready for release to service.
- (s) In the case of planners, supervisors, and certifying staff, knowledge of AMO procedures relevant to their particular role shall be demonstrated.
- (t) Training of certifying staff shall be performed by the AMO or by an institute selected by the AMO. In either case, the AMO shall establish the curriculum and standards for training, as well as pre-qualification standards for the personnel intended for training. Pre-qualification standards are intended to insure that the trainee has a reasonable chance of successfully completing any course.
- (u) Examinations shall be set at the end of each training course.
- (v) Initial training shall cover:
 - (1) Basic engineering theory relevant to the airframe structure and systems fitted to the class of aircraft the AMO intends to maintain;
 - (2) Specific information on the actual aircraft type on which the person is intended to become a certifying person including the impact of repairs and system/structural defects; and
 - (3) Company procedures relevant to the certifying staff's tasks.
- (w) Continuation training shall cover changes in AMO procedures and changes in the standard of aircraft and/or aeronautical products maintained.
- (x) The training program shall include details of the number of personnel who will receive initial training to qualify as certifying staff over specified time periods.
- (y) The training program established for maintenance personnel and certifying staff by the AMO shall include training in knowledge and skills related to human performance including co-ordination with other maintenance personnel and flight crew.

IS: 6.4.1.3 INDOCTRINATION, INITIAL, RECURRENT, SPECIALISED AND REMEDIAL TRAINING

- (a) Each AMO shall provide indoctrination training for employees that include at least 40 hours of instruction in at least the following subjects:
 - (1) Ethiopian Civil Aviation Rules and standards – particularly those associated with AMO maintenance functions and Authority as reflected on the certificate and operations specifications;
 - (2) Company manuals, policies, procedures and practices, including quality control processes, particularly those associated with ensuring compliance with maintenance (including inspection), preventive maintenance, and alteration procedures

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- established to show compliance with Part 6;
- (3) Dangerous goods requirements of 6.4.1.6, including other local and national laws requiring training for different categories of employees;
 - (4) Maintenance human factors – the elements should focus on aviation maintenance and safety related issues;
 - (5) Computer systems and software – as applicable to the approved maintenance organization's maintenance activities including inspection, preventive maintenance and alteration systems and procedures; and
 - (6) Facility security - which shall include company security objectives, specific security procedures, employee responsibilities, actions to take in the event of a security breach, and the organizational security structure.
- (b) Initial Training. Each AMO shall provide initial training for employees that includes at least 80 hours of instruction in at least the following subjects consistent with the specific employee position and assigned job activities:
- (1) General review;
 - (2) Specific job or task training;
 - (3) Shop safety;
 - (4) Records and recordkeeping;
 - (5) Materials and parts;
 - (6) Test equipment, including ground support equipment;
 - (7) Tools;
 - (8) Maintenance human factors, and
 - (9) Any other items as required by the Authority.
- (c) Recurrent training. Each AMO shall provide recurrent training for employees that include at least 8 hours of instruction in the subjects below:
- (1) Refresher of subjects covered in initial training;
 - (2) New items introduced in the AMO since completion of initial training; and
 - (3) Any other items required by the Authority.
- (d) Specialized training. Each AMO shall provide specialized training, including initial and recurrent, for employees whose duties require a specific skill. Examples of specialized

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skills include: flame and/or plasma spray operations, special inspection or test techniques, special machining operations, complex welding operations, aircraft inspection techniques or complex assembly operations.

- (e) Remedial training. Each AMO shall provide remedial training to rectify an employee's demonstrated lack of knowledge or skill by providing information as soon as possible. In some instances, remedial training may consist of an appropriately knowledgeable person reviewing procedures with an employee through on-the-job training. Remedial training should be designed to fix an immediate knowledge or skill deficiency and may focus on one individual. Successful remedial training shall show an individual what occurred, why it occurred, and in a positive manner, how to prevent it from occurring again.
- (f) Each AMO, in developing training for employees, shall take into account the various training, experience, and skill levels of its employees as follows:
 - (1) Employees that hold an AMT license;
 - (2) Employees with experience performing similar tasks at another AMO;
 - (3) Employees with applicable military aviation maintenance experience; and
 - (2) Employees with no prior skills, experience, or knowledge.
- (g) Each AMO shall have procedures to determine the frequency of recurrent training and the need for specialized and remedial training.
- (h) Each AMO shall assess the competency of its employees for performing his or her assigned duties after completion of initial, recurrent, specialized and remedial training. This assessment of competency shall be appropriately documented in the employee's training records and shall be done by any of the following methods, depending upon the size of the AMO, its capabilities and experience of its employees:
 - (1) Written test;
 - (2) Completion of a training course;
 - (3) Skill test;
 - (4) Group exercise;
 - (5) On the job assessment; or
 - (6) Oral examination in the working environment.

IS: 6.4.1.4 TRAINING SYLLABUS FOR INITIAL HUMAN FACTORS TRAINING

- (a) The training syllabus below identifies the topics and subtopics to be addressed during the human factors training.
- (b) The maintenance organization may combine, divide, and change the order of any subject of the syllabus to suit its own needs, as long as all subjects are covered to a level of detail appropriate to the organization and its personnel.
- (c) Some of the topics may be covered in separate training (health and safety, management, supervisory skills, etc.) in which case duplication of training is not necessary.
- (d) Where possible, practical illustrations and examples should be used, especially accident and incident reports.
- (e) Topics should be related to maintenance engineering where possible; too much unrelated theory should be avoided.

1. General/Introduction to human factors

- 1.1. Need to address human factors
- 1.2. Statistics
- 1.3. Incidents

2. Safety Culture/Organizational factors

3. Human Error

- 3.1. Error models and theories
- 3.2. Types of errors in maintenance tasks
- 3.3. Violations
- 3.4. Implications of errors
- 3.5. Avoiding and managing errors
- 3.6. Human reliability

4. Human performance & limitations

- 4.1. Vision
- 4.2. Hearing

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- 4.3. Information-processing
- 4.4. Attention and perception
- 4.5. Situational awareness
- 4.6. Memory
- 4.7. Claustrophobia and physical access
- 4.8. Motivation
- 4.9. Fitness/Health
- 4.10. Stress
- 4.11. Workload management
- 4.12. Fatigue
- 4.13. Alcohol, medication, drugs
- 4.14. Physical work
- 4.15. Repetitive tasks/complacency

5. Environment

- 5.1. Peer pressure
- 5.2. Stressors
- 5.3. Time pressure and deadlines
- 5.4. Workload
- 5.5. Shift Work
- 5.6. Noise and fumes
- 5.7. Illumination
- 5.8. Climate and temperature
- 5.9. Motion and vibration
- 5.10. Complex systems
- 5.11. Hazards in the workplace
- 5.12. Lack of manpower
- 5.13. Distractions and interruptions

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6. Procedures, information, tools and practices

- 6.1. Visual Inspection
- 6.2. Work logging and recording
- 6.3. Procedure - practice/mismatch/norms
- 6.4. Technical documentation - access and quality

7. Communication

- 7.1. Shift/Task handover
- 7.2. Dissemination of information
- 7.3. Cultural differences

8. Teamwork

- 8.1. Responsibility
- 8.2. Management, supervision and leadership
- 8.3. Decision making

9. Professionalism and integrity

- 9.1. Keeping up to date; currency
- 9.2. Error provoking behaviour
- 9.3. Assertiveness

10. Organization's Human Factors program

- 10.1. Reporting errors
- 10.2. Disciplinary policy
- 10.3. Error investigation
- 10.4. Action to address problems
- 10.5. Feedback

IS: 6.4.1.5 A COMPETENCE ASSESSMENT PROCEDURE

- (a) The organization shall develop a procedure describing the process of competence assessment of personnel. The procedure shall specify:

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- (1) persons responsible for this process,
- (2) when the assessment must take place,
- (3) credits from previous assessments,
- (4) validation of qualification records,
- (5) means and methods for the initial assessment,
- (6) means and methods for the continuous control of competence including feedback on personnel performance,
- (7) competences to be observed during the assessment in relation with each job function,
- (8) actions to be taken when assessment is not satisfactory,
- (9) recording of assessment results.

For example, according to the job functions and the scope, size and complexity of the organization, the assessment may consider the following (the table is not exhaustive):

	Managers	Planners	Supervisor	Certifying staff and support staff	Mechanics	Specialized Service staff	Quality audit staff
Knowledge of applicable officially recognized standards						X	X
Knowledge of auditing techniques: planning, conducting and reporting							X
Knowledge of human factors, human performance and limitations	X	X	X	X	X	X	X
Knowledge of logistics processes	X	X	X				
Knowledge of organization capabilities, privileges and limitations	X	X	X	X		X	X
Knowledge of Ethiopian Civil Aviation Rules and Standards of Airworthiness and Approved maintenance Organizations and any other relevant regulations	X	X	X	X			X
Knowledge of relevant parts of the maintenance organization Maintenance Procedures Manual and procedures	X	X	X	X	X	X	X
Knowledge of occurrence reporting system and understanding of the importance of reporting occurrences, incorrect maintenance data and existing or potential defects		X	X	X	X	X	

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Knowledge of safety risks linked to the working environment	X	X	X	X	X	X	X
Knowledge on CDCCL when relevant	X	X	X	X	X	X	X
Knowledge on EWIS when relevant	X	X	X	X	X	X	X
Understanding of professional integrity, behaviour and attitude towards safety	X	X	X	X	X	X	X
Understanding of conditions for ensuring continuing airworthiness of aircraft and components				X			X
Understanding of his/her own human performance and limitations	X	X	X	X	X	X	X
Understanding of personnel authorizations and limitations	X	X	X	X	X	X	X
Understanding critical task		X	X	X	X		X
Ability to compile and control completed work cards		X	X	X			
Ability to consider human performance and limitations.	X	X	X	X			X
Ability to determine required qualifications for task performance		X	X	X			
Ability to identify and rectify existing and potential unsafe conditions			X	X	X	X	X
Ability to manage third parties involved in maintenance activity		X	X				
Ability to confirm proper accomplishment of maintenance tasks			X	X	X	X	
Ability to identify and properly plan performance of critical task		X	X	X			
Ability to prioritize tasks and report discrepancies		X	X	X	X		
Ability to process the work requested by the operator		X	X	X			
Ability to promote the safety and quality policy	X		X				
Ability to properly process removed, uninstalled and rejected parts			X	X	X	X	
Ability to properly record and sign for work accomplished			X	X	X	X	
Ability to recognize the acceptability of parts to be installed prior to fitment				X	X		
Ability to split complex maintenance tasks into clear stages		X					
Ability to understand work orders, work cards and refer to and use applicable maintenance data		X	X	X	X	X	X
Ability to use information systems	X	X	X	X	X	X	X
Ability to use, control and be familiar with required tooling and/or equipment			X	X	X	X	
Adequate communication and literacy skills	X	X	X	X	X	X	X
Analytical and proven auditing skills (for example, objectivity, fairness, open-mindedness, determination, ...)							X
Maintenance error investigation skills							X
Resources management and production planning skills	X	X	X				
Teamwork, decision-making and leadership skills	X		X				

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IS: 6.4.1.5 (b) TEMPLATE FOR RECORDING EXPERIENCE/TRAINING

The following template may be used to record the professional experience gained in an organization and the training received and be considered during the competence assessment of the individual in another organization.

Aviation Maintenance personnel experience credential					
Name Address					
Telephone			E-mail		
Independent worker Trade Group: airframe engine electrical avionics other (specify) 					
Employer's details (when applicable)					
Name Address					
Telephone					
Maintenance organization details					
Name Address					
Telephone					
Approval Number					
Period of employment		From:		To:	
Domain of employment					
Planning		Engineering		Technical records	
Store department		Purchasing			
Mechanics/Technician					
Line Maintenance		Base Maintenance		Component Maintenance	
Servicing		Removal/installation		Testing/inspection	
Scheduled Maintenance		Inspection		Repair	
Trouble-shooting		Trouble-shooting		Overhaul	
		Repair		Re-treatment	
				Reassembly	
A/C type		A/ C type		Component type	
Certifying Staff and support staff					
Cat. A		Cat. B1		Cat. B2	
		Cat. C		Component type	
				Other (e.g. NDT)	

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A/C Type	A/C Type	A/C Type	A/C Type	Component Type	Specify
Certification privileges: Yes / No					
Specialized services		Specialty (<i>NDT, composites, welding, etc.</i>):			
Skilled personnel		Specialty (sheet metal, structures, wireman, upholstery, etc.):			
Ground equipment operation		Quality assurance		Training	
Quality control				Total number of check boxes ticked:	
<input style="width: 30px; height: 20px;" type="text"/>					
Details of employment					
Training received from the contracting organisation					
Date		Nature of training			
Certified by:					
Name:			Date:		
Position:			Signature:		
Contact details:					
<i>Advisory note: A copy of the present credential will be kept for at least 3 years from its issuance by the maintenance organization.</i>					

IS: 6.4.1.6 DANGEROUS GOODS TRAINING PROGRAMME

- (a) Dangerous goods training, at a minimum, shall include at least 8 hours instruction in at least the following:
- (1) General awareness/familiarization training—designed to provide familiarity with the requirements of this Part and the dangerous goods rules and standards in Part 9 and to enable the employee to recognize and identify dangerous goods.
 - (2) Function-specific training—concerning the specific requirements of this Part and the dangerous goods rules and standards in Part 9, or exemptions or special permits issued, relating to the specific functions the employee performs.
 - (3) Safety training concerning—

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- (i) Emergency response.
 - (ii) Measures to protect the employee from the hazards associated with the dangerous goods to which they may be exposed in the work place, including specific measures the employer has implemented to protect employees from exposure.
 - (iii) Methods and procedures for avoiding accidents, such as the proper procedures for handling packages containing dangerous goods.
- (4) Security; awareness training—addressing the security risks associated with dangerous goods transportation and methods designed to enhance transportation security. This training must also include a component covering how to recognize and respond to possible security threats.
 - (5) In-depth security training—must include company security objectives, specific security procedures, employee responsibilities, actions to take in the event of a security breach, and the organizational security structure.
 - (6) Any other training required by the Authority.

IS: 6.4.1.8 RECORDS OF MANAGEMENT, SUPERVISORY, INSPECTION AND CERTIFYING STAFF

- (a) The following minimum information shall be kept on record in respect of each management, supervisory, inspection, and certifying person:
 - (1) Name;
 - (2) Date of birth;
 - (3) Basic training;
 - (4) Type training;
 - (5) Continuation training;
 - (6) Experience;
 - (7) Qualifications relevant to the approval;
 - (8) Scope of the authorization;
 - (9) Date of first issue of the authorization;
 - (10) Expiration date of the authorization (if appropriate); and
 - (11) Identification number of the authorization.

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- (b) Records of these individuals shall be controlled.
- (c) The number of persons authorized to access the system shall be limited to minimize the possibility of records being altered in an unauthorized manner and to limit confidential records from become accessible to unauthorized persons.
- (d) A certifying person shall be given reasonable access on request to his or her records.
- (e) The Authority is authorized to and may investigate the records system for initial and continued approval, or when the Authority has cause to doubt the competence of a particular certifying person.
- (f) The AMO shall keep the record of these individuals for at least two years after that person has ceased employment with the AMO or after withdrawal of his or her authorization. Upon request, the certifying staff shall be furnished with a copy of their record on leaving the AMO.

IS: 6.5.1.1 MAINTENANCE PROCEDURES MANUAL

- (a) AMO personnel shall be familiar with those parts of the manuals that are relevant to the maintenance work they perform.
- (b) The AMO shall specify in the Maintenance Procedures Manual who shall amend the manual, particularly in the case where the manual consists of several parts.
- (c) The Quality Manager shall be responsible for—
 - (1) Monitoring the amendment of the Maintenance Procedures Manual, including associated procedures manuals.
 - (2) Submitting proposed amendments to the Authority for approval, unless the Authority has agreed, via a procedure stated in the amendment section of the Maintenance Procedures Manual, that some defined class of amendments may be incorporated without approval by the Authority.
- (d) The Maintenance Procedures Manual shall address at least five main areas—
 - (1) Management;
 - (2) Maintenance procedures; including line maintenance procedures;
 - (3) Quality system procedures;
 - (4) Documentation;
 - (5) Examples of standard documents/lists; and
 - (6) Other.

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- (e) Sample Maintenance Procedures Manual Format. The manual may be put together in any subject order so long as all applicable subjects are covered.

Part 1 - Management

- 1.1 Corporate commitment by the accountable manager.
- 1.2 Management personnel.
- 1.3 Duties and responsibilities of the management personnel.
- 1.4 Management Organization Chart.
- 1.5 List of certifying staff.

Note: A separate document may be referenced.

- 1.6 Manpower resources.
- 1.7 General description of the facilities at each address intended to be approved.
- 1.8 Organizations intended scope of work.
- 1.9 Notification procedure to the Authority regarding changes to the organization's activities/approval/location/personnel
- 1.10 Manual amendment procedures.

Part 2 - Maintenance Procedures

- 2.1 Supplier evaluation procedure.
- 2.2 Acceptance/inspection of aircraft components and material from outside contractors.
- 2.3 Storage, tagging and release of aircraft components and material to aircraft maintenance.
- 2.4 Acceptance of tools and equipment.
- 2.5 Calibration of tools and equipment.
- 2.6 Use of tooling and equipment by staff (including alternate tools).
- 2.7 Cleanliness standards of maintenance facilities.
- 2.8 Maintenance instructions and relationship to aircraft/aircraft component manufacturers' instructions including updating and availability to staff.
- 2.9 Repair procedure.
- 2.10 Aircraft maintenance program compliance.

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- 2.11 Airworthiness Directives procedure.
- 2.12 Optional modification procedure.
- 2.13 Maintenance documentation in use and completion of same.
- 2.14 Technical record control.
- 2.15 Rectification of defects arising during base maintenance.
- 2.16 Release to service procedure.
- 2.17 Records for the AOC holder.
- 2.18 Reporting of defects to the Authority /Operator/Manufacturer.
- 2.19 Return of defective aircraft components to store.
- 2.20 Defective components shipped to outside contractors.
- 2.21 Control of computer maintenance record systems.
- 2.22 Reference to specific maintenance procedures such as:
 - Engine running procedures;
 - Aircraft pressure run procedures;
 - Aircraft towing procedures; and/or
 - Aircraft taxiing procedures.

Part L2 - Additional Line Maintenance Procedures

- L2.1 Line maintenance control of aircraft components, tools, equipment, etc.
- L2.2 Line maintenance procedures related to servicing/fuelling/de-icing, etc.
- L2.3 Line maintenance control of defects and repetitive defects.
- L2.4 Line procedure for completion of technical log.
- L2.5 Line procedure for pooled parts and loan parts.
- L2.6 Line procedure for return of defective parts removed from aircraft.

Part 3 - Quality System Procedures

- 3.1 Quality audit of organization procedures.

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- 3.2 Quality audit of aircraft.
- 3.3 Quality audit remedial action procedure.
- 3.4 Certifying staff qualification and training procedures.
- 3.5 Certifying staff records.
- 3.6 Quality audit personnel.
- 3.7 Qualifying inspectors.
- 3.8 Qualifying mechanics.
- 3.9 Exemption process control.
- 3.10 Concession control for deviation from organizations' procedures.
- 3.11 Qualification procedure for specialized activities such as non-destructive testing, welding, etc.
- 3.12 Control of manufacturers' working teams.

Part 4 - Documentation

- 4.1 Contracted air operators.
- 4.2 Air operator procedures and paperwork.
- 4.3 Air operator record completion.

Part 5 -Examples of documents; lists

- 5.1 Sample of documents, such as technical record control or rectification of defects.
- 5.2 List of subcontractors.
- 5.3 List of line maintenance locations.
- 5.4 List of contracted organizations.

IS: 6.5.1.7 CERTIFICATION OF RELEASE TO SERVICE OF AN AIRCRAFT, PART, COMPONENT OR ASSEMBLY

- (a) The following form shall be used when an AMO approves an aeronautical product for return to service.

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ECAA FORM: AWS-007

1. ECAA/Ethiopia		2. Approval for Return to Service Airworthiness Approval Tag				3. System tracking ref. number:	
4. Organization name and address:					5. Work order, contract, or invoice number:		
6. Item:	7. Description :	8. Part number:	9. Eligibility : (Installer shall check eligibility with applicable technical data)	10. Quantity:	11. Serial/batch number:	12. Status/work:	
13. Remarks:							
14. Certifies that the items identified above were manufactured in conformity to: <input type="checkbox"/> Approved design data and are in condition for safe operation <input type="checkbox"/> Non-approved design data as specified in block 13				19. Certifies that unless otherwise specified in block 13 (or attached), the work identified in block 12 and described in block 13 was accomplished in accordance with Ethiopian Civil Aviation Rules and Standard and, with respect to that work, the item(s) is (are) approved for return to service. <input type="checkbox"/> 6.5.7.1 Return to Service <input type="checkbox"/> Other regulation specified in block 13			
15. Authorized signature:		16. Approval/authorization number:		20. Authorized signature:		21. Approval/certificate number:	

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17. Name (typed or printed):	18. Date (dd/mm/yyyy):	22. Name (typed or printed):	23. Date (dd/mm/yyyy):
User/Installer Responsibilities			
<p>It is important to understand that the existence of this document alone does not automatically constitute authority to install the aircraft engine/propeller/article.</p> <p>Where the user/installer performs work in accordance with the national regulations of an airworthiness authority different than the airworthiness authority of the country specified in Block 1, it is essential that the user/installer ensures that his/her airworthiness authority accepts aircraft engine(s)/propeller(s)/article(s) from the airworthiness authority of the country specified in Block 1.</p> <p>Statements in Blocks 14 and 19 do not constitute installation certification. In all cases, aircraft maintenance records must contain an installation certification issued in accordance with the national regulations by the user/installer before the aircraft may be flown.</p>			

Instructions for Completion of an Approval for Return to Service and/or Airworthiness Approval Tag (ECAA FORM: AWS 007)

- (a) Block 1. **Ethiopian Civil Aviation Authority** (Pre-printed).
 - (b) Block 2. The Authority, Airworthiness Approval Tag.
 - (c) Block 3. Form Tracking Number.
 - (1) Fill in the unique number established by approved numbering system.
 - (2) If the form is computer-generated, it may be produced as programmed by the computer.
- NOTE:* Shippers must establish a numbering system for traceability in order to fill out block 3 of the form. This system must also provide a means of cross-referencing the number(s) and product(s) being shipped.
- (d) Block 4. Organization.
 - (1) Fill in the full name and address of the AMO or individual shipping the product(s)/part(s) as applicable:
 - (i) Company name and address.

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- (ii) Production Approval Holder (PAH) approval or certificate numbers as issued by the Authority of the State of Manufacturer, when applicable (e.g., production certificate number, approved maintenance organization certificate numbers, air operator certificate number).

Note: Production certificates are issued to manufacturing companies by the appropriate certifying authority. ECARAS presume that Ethiopia is not a State of Manufacturer or Design. However, aircraft registered in Ethiopia will likely be repaired, altered or rebuilt using parts and components exported from the State of Manufacturer. Companies performing the repair, alteration, rebuild and export will be certificated by the State of Manufacturer as a production approval holder. The PAH is required by the State of Manufacturer to use the airworthiness approval tag and certify their work in blocks 14 – 18 as described in this Part. Consequently State's which will not be filling out block 14-18 will need to be familiar with all the uses of this form in order to properly accept parts and components.

- (2) When a supplier has direct ship authorization from a PAH, the following information shall be entered:
 - (i) PAH name and address.
 - (ii) PAH approval or certificate number.
 - (iii) C/o Supplier name and address.

NOTE: If an individual product/part is produced as a spare by a supplier, the supplier must have either direct ship Authority or hold a production approval (TSO authorization) for all products/parts shipped. If the supplier holds its own production approval, and the products/parts were manufactured and are being shipped under that approval, the information required in paragraph (1) above shall be listed.

(e) Block 5. Work Order, Contract, or Invoice Number.

- (1) Fill in the contract, work order, or invoice number related to the shipment list, or maintenance release, and state the number of pages attached to the form, including dates, if applicable. If the shipment list contains the information required in Blocks 6 through 12, the respective blocks may be left blank if an original or true copy, of the list is attached to the form. In this case, the following statement should be entered in Block 13: "This is the certification statement for the products/parts listed on the attached document dated __, containing pages __through __."
- (2) In addition, the shipment list must cross-reference the number located in Block 3. The shipment list may contain more than one item; but it is the responsibility of the shipper to determine if the CAA of the importing jurisdiction will accept bulk shipments under a single Authority ECAA FORM: AWS 007. If the CAA does not permit bulk shipments under a single form, Blocks 6 through 12 of each form must be filled in for each product shipped.

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- (f) Block 6. Item. When ECAA FORM: AWS007 is issued a single item number or multiple item numbers may be used for the same part number. Multiple items shall be numbered in sequence. If a separate listing is used, enter "List Attached."

NOTE: The blank form can be computer-generated. However, the format cannot be changed, nor can any words be added or deleted. Pre-printing of some information is permissible, i.e.; the information in blocks 1, 2, 3, 4, and 19. The size of blocks may be varied slightly, but the form must remain readily recognizable. The form may also be reduced in overall size to facilitate placement of the wording on the back of the form onto the face of the document.

- (g) Block 7. Description. Enter the name or description of the product/part as shown on the design data. For products/parts that do not have design data available, the name as referenced in a part catalog, overhaul manual, etc., can be used.
- (h) Block 8. Part Number. Enter each part number of the product.
- (i) Block 9. Eligibility. State the aircraft, aircraft engine, or propeller make and model on which the parts manufacture approval is eligible for installation. If a part is eligible for installation on more than one model enter the words "to be verified by installer or TBV by installer." Where parts are TSO articles, state "TSO Article N/A" since eligibility for installation for TSO articles is determined at the time of installation.

NOTE: For TSO articles Authority ECAA FORM: AWS 007 does not constitute Authority to install a product on a particular aircraft, aircraft engine, or propeller. The user or installer is responsible for confirming that the product is eligible for installation by reference to overhaul manuals, service bulletins, etc., as applicable. While the information in Block 9 is optional, it shall be filled out whenever possible.

- (j) Block 10. Quantity. State the quantity of each product/part shipped.-
- (k) Block 11. Serial /Batch Number. State the serial number or equivalent (identified on the part) on the form for each product/part shipped. If a serial number or equivalent is not required on the part, enter "N/A."
- (l) Block 12. Status/work. Enter "Newly Overhauled" for those products that have not been operated or placed in service since overhaul. Enter "PROTOTYPE" for products/parts submitted to support type certification programs. Other permissible/appropriate terms to describe the status of the product/part include: "INSPECTED", "REPAIRED," "REBUILT," or "ALTERED."
- (m) Block 13. Remarks. Enter any information or references to support documentation necessary for the user or installer to make a final determination of airworthiness of the products/parts listed in Block 7. Each statement must specify which item identified in Block 6 is related. Examples of data to be entered in this block as appropriate, are as follows:
- (1) Maintenance documentation used, including the revision status, for all work performed and not limited to the entry made in block 12.

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- (2) A statement such as 'in accordance with the CMM' is not acceptable.
 - (3) NDT methods with appropriate documentation used when relevant.
 - (4) Compliance with airworthiness directives or service bulletins.
 - (5) Repairs carried out.
 - (6) Modifications carried out.
 - (7) Replacement parts installed.
 - (8) Life-limited parts status.
 - (9) Shelf life limitations.
 - (10) Deviations from the customer work order.
 - (11) Release statements to satisfy a foreign Civil Aviation Authority maintenance requirement.
 - (12) Information needed to support shipment with shortages or re-assembly after delivery.
 - (13) References to aid traceability, such as batch numbers.
 - (14) When used for conformity the word "CONFORMITY" must be entered in capital letters. In addition, an explanation of the products/parts use, e.g., pending approved data, type certificate pending, for test only, etc., shall be provided. Information concerning a conformity inspection such as design data, revision level, date, project number.
 - (15) When used for spare parts identify whether the parts are from the original manufacturer or another approved source and are made to the TSO. In addition, if the Airworthiness Approval Tag is for spare parts or sub components of Authority approved replacement part, the TSO authorization shall be listed in Block 13.
- (n) Blocks 14, 15, 16, 17 and 18: Must not be used for maintenance tasks by Part 6 approved maintenance organizations. These blocks are specifically reserved for release/certification of newly manufactured items in accordance with certification procedures of products and parts of the State of Design or State of Manufacture (e.g. 14 CFR Part 21).
- (o) Block 19. Return to Service. The information is already pre-printed in the block.
- (p) Block 20. Signature. Signature of the individual authorized by the air agency, air carrier,

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or the manufacturer in accordance with 5.6.1.5 (a) (2), (3), and (4). The approval signature shall be manually applied at the time and place of issuance.

- (q) Block 21. Certificate number. Enter the AMO or air operator operating certificate number. For manufacturers returning to service after rebuilding products/parts the production approval number shall be entered.
- (r) Block 22. Name. The typed or printed name of the individual identified in Block 20.
- (s) Block 23. Date. The date the Authority ECAA FORM: AWS007 is signed and the product is returned to service. This does not need to be the same as the shipping date, which may occur at a later date.

IS: 6.5.1.9 AIRWORTHINESS DATA

- (a) The AMO shall be in receipt of all airworthiness data appropriate to support the work performed from the Authority, the aircraft/aeronautical product design organization, and any other approved design organization in the State of Manufacture or State of Design, as appropriate. Some examples of maintenance-related documents are:
 - (1) Civil Aviation Rules and Standards.
 - (2) Associated advisory material.
 - (3) Airworthiness directives.
 - (4) Manufacturers' maintenance manuals.
 - (5) Repair manuals.
 - (6) Supplementary structural inspection documents.
 - (7) Service bulletins.
 - (8) Service letters.
 - (9) Service instructions.
 - (10) Modification leaflets.
 - (11) Aircraft maintenance program.
 - (12) Non-destructive Testing (NDT) Manual, etc.
- (b) An organization with an approval class rating in category A - Aircraft should hold and use the following maintenance data where published. The appropriate sections of the operator's aircraft maintenance programme, aircraft maintenance manual, repair manual,

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supplementary structural inspection document, corrosion control document, service bulletins, service letters, service instructions, modification leaflets, NDT manual, parts catalogue, type certificate datasheet and any other specific document issued by the type certificate or supplementary type certificate holder as maintenance data.

- (c) An organization with an approval class rating in category B - Engines/APUs, should hold and use the following maintenance data where published. The appropriate sections of the engine/APU maintenance and repair manual, service bulletins, service letters, modification leaflets, non-destructive testing NDT manual, parts catalogue, type certificate data sheet and any other specific document issued by the type certificate holder as maintenance data.
- (d) An organization only approved in class rating category D – Specialized services, should hold and use all applicable specialized service(s) process specifications.
- (e) A procedure shall be established to monitor the amendment status of all data and maintain a check that all amendments are being received by being a subscriber to any document amendment scheme. Special attention shall be given to TC related data such as certification life limited parts, airworthiness limitation and Airworthiness Limitation Items (ALI), etc.
- (f) Where computer systems are used to maintain airworthiness data, the number of computer terminals shall be sufficient in relation to the size of the work program to enable easy access, unless the computer system can produce paper copies. Where microfilm or microfiche readers/printers are used, a similar requirement is applicable.
- (g) The referenced procedure shall ensure that when maintenance personnel discover inaccurate, incomplete or ambiguous information in the maintenance data they should record the details. The procedure should then ensure that the approved maintenance organization notifies the problem to the author of the maintenance data in a timely manner. A record of such communications to the author of the maintenance data should be retained by the approved maintenance organization until such time as the type certificate holder has clarified the issue by e.g. amending the maintenance data.
- (h) The referenced procedure should address the need for a practical demonstration by the mechanic to the quality personnel of the proposed modified maintenance instruction. When satisfied the quality personnel should approve the modified maintenance instruction and ensure that the type certificate or supplementary type certificate holder is informed of the modified maintenance instruction. The procedure should include a paper/electronic traceability of the complete process from start to finish and ensure that the relevant maintenance instruction clearly identifies the modification. Modified maintenance instructions should only be used in the following circumstances:
 - (i) Where the type certificate/supplementary type certificate holders original intent can be carried out in a more practical or more efficient manner.

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- (ii) Where the type certificate/supplementary type certificate holders original intent cannot be achieved by following the maintenance instructions. For example, where a component cannot be replaced following the original maintenance instructions.
- (iii) For the use of alternative tools/equipment.

Note: Critical Design Configuration Control Limitations (CDCCL) are airworthiness limitations. Any modification of the maintenance instructions linked to CDCCL constitutes an aircraft modification that should be approved.

- (i) The maintenance organization should:
 - (1) transcribe accurately the maintenance data onto such work cards or worksheets, or
 - (2) make precise reference to the particular maintenance task(s) contained in such maintenance data, which already identifies the task as a CDCCL where applicable.
- (j) Relevant parts of the organization means with regard to aircraft base maintenance, aircraft line workshops. Therefore, engine workshops for example should have a common system throughout such engine workshops that may be different to that in the aircraft base maintenance.
- (k) The work-cards should differentiate and specify, when relevant, disassembly, accomplishment of task, reassembly and testing. In the case of a lengthy maintenance task involving a succession of personnel to complete such a task, it may be necessary to use supplementary work-cards or worksheets to indicate what was actually accomplished by each individual person.
- (l) Data being made available to personnel maintaining aircraft means that the data should be available in close proximity to the aircraft being maintained for supervisors, mechanics and certifying staff to study.
- (m) Airworthiness data shall be made available in the work area in close proximity to the aircraft or aeronautical product being maintained and for supervisors, mechanics, and certifying staff to study.