

**LIBERIA
CIVIL AVIATION REGULATIONS**



**PART 5
AIRWORTHINESS**

EDITION 4.0

APRIL 2019





AUTHORITY TO PROMULGATE CIVIL AVIATION REGULATIONS

IN EXERCISE OF THE POWERS CONFERRED ON THE DIRECTOR GENERAL OF LIBERIA CIVIL AVIATION AUTHORITY UNDER THE LIBERIA CIVIL AVIATION ACT OF 2005 THESE REGULATIONS ARE MADE.

THESE REGULATIONS SUPERSEDE LIBERIA CIVIL AVIATION REGULATIONS OF 2016.

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INTRODUCTION

Part 5 presumes that Liberia does not presently have the capabilities or demand to issue its own original type certification and will therefore not be the State of Design or State of Manufacture; however the mandatory requirements and design Standards of the State of Design or Manufacturer of an aircraft will be mandatory on all aircraft registered in Liberia.

Part 5 of Liberia Civil Aviation Regulations presents regulatory requirements for the airworthiness of aircraft registered in Liberia and or expected to operate in Liberia using the standards and recommended practices in ICAO Annexes 6 and Annex 8.

In most such cases, there are aircraft to be registered in Liberia that were designed and manufactured in another Contracting State, and aircraft to be registered in Liberia that were designed in one Contracting State and manufactured in another Contracting State. In addition, Liberia may have AOC holders who operate aircraft registered in another Contracting State, with different states of design and manufacture. Additionally, Liberia may have AOC holders who are part of a regional consortium, with maintenance facilities in a neighboring State.

Proper airworthiness of aircraft to be registered in Liberia will be the result of communication. These Regulations require all persons operating Liberia registered aircraft to notify the Authority when certain events occur. The Authority is required to open lines of communication with the State of Design and/or the State of Manufacture, so that the Authority can receive all service bulletins and airworthiness directives for each type of aircraft operating in Liberia.

Maintenance requirements are set forth in Part 5 for persons who are neither employees of an Approved Maintenance Organization (AMO) nor work for an air operator.

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PART 5 – AIRWORTHINESS

5.1 GENERAL

5.1.1 APPLICABILITY

- (a) This regulation prescribes the requirements for:
- (1) Certification of aircraft and aeronautical components;
 - (2) Issuance of Airworthiness Certificates and other certifications for aeronautical products;
 - (3) Continued airworthiness of aircraft and aeronautical components;
 - (4) Rebuilding and modifications of aircraft and aeronautical components;
 - (5) Maintenance and preventive maintenance of aircraft and aeronautical components;
 - (6) Aircraft inspection requirements;
 - (7) Air operator aircraft maintenance and inspection requirements.

5.1.2 DEFINITIONS

- (a) For the purpose of Part 5, the following definitions shall apply:
- (1) **Aeronautical product.** Any aircraft, aircraft engine, propeller, or subassembly, appliance, material, part or component to be installed thereon.
 - (2) **Aeroplane.** A power-driven heavier-than-air aircraft, deriving its lift in flight chiefly from aerodynamic reactions on surfaces which remain fixed under given conditions of flight.
 - (3) **Aircraft.** Any machine that can derive support in the atmosphere from the reactions of the air other than the reactions of the air against the earth's surface.
 - (4) **Airworthy.** The status of an aircraft, engine, propeller or part when it conforms to its approved design and is in a condition for safe operation.
 - (5) **Airworthiness code.** Standards relating to the design, materials, construction equipment, performance and maintenance of aircraft or aircraft component issued by the State of Design and accepted and prescribed by the Authority.
 - (6) **Airworthiness Directive.** Continuing airworthiness information that applies to the following products: aircraft, aircraft engines, propellers and appliances. An Airworthiness Directives (AD) is mandatory when issued by the State of Design.
 - (7) **Anticipated operating conditions.** Those conditions which are known from experience or which can be reasonably envisaged to occur during the operational life of the aircraft taking into account the operations for which the aircraft is made eligible, the conditions so considered being relative to the meteorological state of

the atmosphere, to the configuration of terrain, to the functioning of the aircraft, to the efficiency of personnel and to all the factors affecting safety in flight. Anticipated operating conditions do not include:

- (i) Those extremes which can be effectively avoided by means of operating procedures;
 - (ii) Those extremes which occur so infrequently that to require the Standards to be met in such extremes would give a higher level of airworthiness than experience has shown to be necessary and practical.
- (8) **Appropriate airworthiness requirements.** The comprehensive and detailed airworthiness codes established, adopted or accepted by a Contracting State for the class of aircraft, engine or propeller under consideration.
- (9) **Approved.** Accepted by a Contracting State as suitable for a particular purpose.
- (10) **Bridging Maintenance.** Is a set of tasks required to transfer an aircraft from one Maintenance Schedule to another. Every operation is unique and hence an aircraft may have been maintained to the same tasks at a different frequency or to different maintenance standards in its previous operation.
- (11) **Category A.** With respect to helicopters, means a multi-engine helicopter designed with engine and system isolation features specified in Part IVB of Annex 8 and capable of operations using take-off and landing data scheduled under a critical engine failure concept *which* assures adequate designated surface area and adequate performance capability for continued safe flight or safe rejected take-off.
- (12) **Category B.** With respect to helicopters, means a single-engine or multi-engine helicopter which does not meet Category A standards. Category B. helicopters have no guaranteed capability to continue safe flight in the event of an engine failure, and a forced landing is assumed.
- (13) **Configuration (as applied to the aeroplane).** A particular combination of the positions of the moveable elements, such as wing flaps and landing gear, etc., that affects the aerodynamic characteristics of the aeroplane.
- (14) **Continuing airworthiness.** The set of processes by which an aircraft, engine, propeller or part complies with the applicable airworthiness requirements and remains in a condition for safe operation throughout its operating life.
- (15) **Critical engines(s).** Any engine whose failure gives the most adverse effect on the aircraft characteristics relative to the case under consideration.
- Note.— On some aircraft there may be more than one equally critical engine. In this case, the expression “the critical engine” means one of those critical engines.*
- (16) **Critical power- units(s).** The power-unit(s) failure of which gives the most adverse effect on the aircraft characteristics relative to the case under consideration.
- (17) **Design landing mass.** The maximum mass of the aircraft at which, for structural design purposes, it is assumed that it will be planned to land.

- (18) **Design take-off mass.** The maximum mass at which the aircraft, for structural design purposes, is assumed to be planned to be at the start of the take-off run.
- (19) **Design taxiing mass.** The maximum mass of the aircraft at which structural provision is made for load liable to occur during use of the aircraft on the ground prior to the start of take-off.
- (20) **Discrete source damage.** Structural damage of the aeroplane that is likely to result from: impact with a bird, uncontained fan blade failure, uncontained engine failure, uncontained high energy rotating machinery failure or similar causes.
- (21) **Engine.** A unit used or intended to be used for aircraft propulsion. It consists of at least those components and equipment necessary for the functioning and control, but excludes the propeller/rotors (if applicable).
- (22) **Factor of safety.** A design factor used to provide for the possibility of loads greater than those assumed, and for uncertainties in design and fabrication.
- (23) **Final approach and take-off area (FATO).** A defined area over which the final phase of the approach maneuver to hover or landing is completed and from which the take-off maneuver is commenced. Where the FATO is to be used by performance Class 1 helicopters, the defined area includes the rejected take-off area available.
- (24) **Fire proof.** The capability to withstand the application of heat by a flame for a period of 15 minutes.
- (25) **Fire resistant.** The capability to withstand the application of heat by a flame for a period of 5 minutes.
- (26) **Helicopter.** A heavier-than-air aircraft supported in flight chiefly by the reactions of the air on one or more power-driven rotors on substantially vertical axes.
- (27) **Human Factors principles.** 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 to human performance.
- (28) **Human performance.** Human capabilities and limitations which have an impact on the safety and efficiency of aeronautical operations.
- (29) **Landing surface.** That part of the surface of an aerodrome which the aerodrome authority has declared available for the normal ground or water run of aircraft landing in a particular direction.
- (30) **Life Limited Part.** Any part for which a mandatory replacement limit is specified in the type design, the instructions for Continued Airworthiness, or the maintenance manual.
- (31) **Limit loads.** The maximum loads assumed to occur in the anticipated operating conditions.

- (32) **Load factor.** The ratio of a specified load to the weight of the aircraft, the former being expressed in terms of aerodynamic forces, inertia forces, or ground reactions.
- (33) **Maintenance.** The performance of tasks required to ensure the continuing airworthiness of an aircraft, including any one or combination of overhaul, inspection, replacement, defect rectification, and the embodiment of a modification or repair.
- (34) **Major modification.** In respect of an aeronautical product for which a Type certificate has been issued, a change in the Type Design that has an appreciable effect, or other than a negligible effect, on the mass and balance limits, structural strength, powerplant operation, flight characteristics, reliability, operational characteristics, or other characteristics or qualities affecting the airworthiness or environmental characteristics of an aeronautical product. IS: 5.1.2(a)(33).
- (35) **Major repair.** Major repair means a repair: (1) that if improperly done might appreciably affect weight, balance, structural strength, performance, powerplant, operations, flight characteristics, or other qualities affecting airworthiness; or (2) that is not done according to accepted practices or cannot be done by elementary operations. Described in IS:5.1.2(a)(34).
- (36) **Modification.** A change to the type design of an aircraft, engine or propeller.
- (37) **Organization responsible for the type design.** The organization that holds the type certificate, or equivalent document, for an aircraft, engine or propeller type, issued by a Contracting State.
- (38) **Overhaul.** The restoration of an aircraft/aeronautical product using methods, techniques, and practices acceptable to the Authority, including disassembly, cleaning, and inspection as permitted, repair as necessary, and reassembly; and 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 state of design, holder of the type certificate, supplemental type certificate, or a material, part, process, or appliance approval under Parts Manufacturing Authorization (PMA) or Technical Standard Order (TSO).
- (39) **Performance Class 1 helicopter.** A helicopter with performance such that, in case of engine failure, it is able to land on the rejected take-off area or safely continue the flight to an appropriate landing area.
- (40) **Performance Class 2 helicopter.** A helicopter with performance such that, in case of engine failure, it is able to safely continue the flight, except when the failure occurs prior to a defined point after take-off or after a defined point before landing, in which cases a forced landing may be required.
- (41) **Performance Class 3 helicopter.** A helicopter with performance such that, in case of engine failure at any point in the flight profile, a forced landing must be performed.
- (42) **Powerplant.** The system consisting of all the engines, drive system components (if applicable), and propellers (if installed), their accessories, ancillary parts, and fuel and oil systems installed on an aircraft but excluding the rotors for a helicopter.

- (43) **Power-unit.** A system of one or more engines and ancillary parts which are together necessary to provide thrust, independently of the continued operation of any other power-unit(s), but not including short period thrust-producing devices.
- (44) **Pressure-altitude.** An atmospheric pressure expressed in terms of altitude which corresponds to that pressure in the Standard Atmosphere.
- (45) **Preventative maintenance.** Described in IS: 5.1.2(a)(44).
- (46) **Rebuild.** The restoration of an aircraft/aeronautical product by using methods, techniques, and practices acceptable to the Authority, when it has been disassembled, cleaned, inspected as permitted, repaired as necessary, reassembled, and tested to the same tolerances and limits as a new item, using either new parts or used parts that conform to new part tolerances and limits. This work will be performed by only the manufacturer or an organization approved by the manufacturer, and authorized by the state of registry.
- (47) **Rendering (a Certificate of Airworthiness) valid.** The action taken by a Contracting State, as an alternative to issuing its own Certificate of Airworthiness, in accepting a Certificate of Airworthiness issued by any other Contracting State as the equivalent of its own Certificate of Airworthiness.
- (48) **Repair.** The restoration of an aeronautical product to an airworthy condition as defined by the appropriate airworthiness requirements.
- (49) **Required inspection items.** Maintenance items and/or modifications that must be inspected by a person other than the one performing the work, and include at least those that could result in a failure, malfunction, or defect endangering the safe operation of the aircraft, if not properly performed or if improper parts or materials are used.
- (50) **Satisfactory evidence.** A set of documents or activities that a Contracting State accepts as sufficient to show compliance with an airworthiness requirement.
- (51) **Standard atmosphere.** An atmosphere defined as follows:
- (i) the air is a perfect dry gas;
 - (ii) the physical constants are:
 - Sea level mean molar mass:
 $M_0 = 28.964\ 420 \times 10^{-3} \text{kg mol}^{-1}$
 - Sea level atmospheric pressure: $P_0 = 1013.250 \text{ hPa}$
 - Sea level temperature:
 $t_0 = 15^\circ\text{C}$
 $T_0 = 288.15 \text{ K}$

- Sea level atmospheric density: $\rho_0 = 1.225 \text{ 0 kg m}^{-3}$
- Temperature of the ice point: $T_i = 273.15 \text{ K}$
- Universal gas constant: $R^* = 8.31432 \text{ JK}^{-1}\text{mol}^{-1}$

(iii) The temperature gradients are

Geopotential altitude (km)		Temperature gradient (Kelvin per standard geopotential kilometer)
From	To	
-5.0	11.0	-6.5
11.0	20.0	0.0
20.0	32.0	+1.0
32.0	47.0	+2.8
47.0	51.0	0.0
51.0	71.0	-2.8
71.0	80.0	-2.0

Note 1.— The standard geopotential metre has the value $9.80665 \text{ m}^2 \text{ s}^{-2}$.

Note 2.— See Doc 7488 for the relationship between the variables and for tables giving the corresponding values of temperature, pressure, density and geopotential.

- (52) **State of design.** The State having jurisdiction over the organization responsible for the type design.
- (53) **State of Manufacture.** The State having jurisdiction over the organization responsible for the final assembly of the aircraft, engine or propeller.
- (54) **State of registry.** The State on whose register the aircraft is entered.

Note.— In the case of the registration of aircraft of an international operating agency on other than a national basis, the States constituting the agency are jointly and severally bound to assume the obligations which, under the Chicago Convention, attach to a State of Registry. See, in this regard, the Council Resolution of 14 December 1967 on Nationality and Registration of Aircraft Operated by International Operating Agencies which can be found in Policy and Guidance Material on the Economic Regulation of International Air Transport (Doc 9587).

- (55) **Take-off surface.** That part of the surface of an aerodrome which the aerodrome authority has declared available for the normal ground or water run of aircraft taking off in a particular direction.
- (56) **Type Certificate.** A document issued by a Contracting State to define the design of an aircraft, engine or propeller type and to certify that this design meets the appropriate airworthiness requirements of that State.
- (57) **Type design.** The set of data and information necessary to define an aircraft, engine or propeller type for the purpose of airworthiness determination.
- (58) **Ultimate load.** The limit load multiplied by the appropriate factor of safety.

5.1.3 ABBREVIATIONS

(a) The following acronyms are used in Part 5:

- (1) AMO – Approved Maintenance Organization
- (2) AMT – Aviation Maintenance Technician
- (3) AOC – Air Operator Certificate
- (4) C of A - Certificate of Airworthiness
- (5) ICAO – International Civil Aviation Organization
- (6) MEL – Minimum Equipment List
- (7) NAA- National Aviation Authority
- (8) PIC – Pilot in command
- (9) STC- Supplemental Type Certificate
- (10) TCDS – Type certificate data sheet;
- (11) TSO – Technical Standard Order

5.2 ORIGINAL CERTIFICATION OF AIRCRAFT AND OTHER AERONAUTICAL PRODUCTS

5.2.1 APPLICABILITY

- (a) This Subpart describes the provisions and designation of applicable rules for original certification of aircraft and related aeronautical products.
- (b) The Authority will hold this Subpart reserved.

5.2.2 TYPE CERTIFICATES AND SUPPLEMENTAL TYPE CERTIFICATES

5.2.2.1 Applicability

- (a) This Subpart prescribes procedural requirements for the acceptance of a type certificate and supplemental type certificates.

5.2.2.2 Type Certificate

- (a) Before an aircraft can be registered in Liberia, it must hold a Type Certificate issued by the State of Design.
- (b) The authority does not issue Type Certificates, production certificates or other related approvals for aircraft or other aeronautical products until such time the Authority provides suitable regulations or provisions for the issuance of an original Certificate of Airworthiness, or airworthiness document as appropriate for the product concerned.
- (c) The type certificates of aircraft must be accepted by the authority.
- (d) The acceptance of a type certificate of an aircraft must be considered the acceptance of the type certificate for the associate engine and propeller

5.2.2.3 Type Acceptance Certificate

- (a) This Subpart prescribes:
 - (1) requirements for the issue of type acceptance certificates for aircraft; and
 - (2) rules governing the holders of those certificates; and
 - (3) rules dealing with the NAAs of foreign countries.
- (b) An applicant intending to import a first of type aircraft or aeronautical product to Liberia shall apply to the Authority for the issuance of an Acceptance Type Certificate, in a form and manner prescribed by the Authority;
- (c) The Authority may accept a type certificate or equivalent document issued by a state of design in respect of an aircraft or aircraft component if:
 - (1) The type certificate or equivalent document was issued based on an airworthiness code recognized by the Authority; or
 - (2) The design, materials, construction equipment, performance and maintenance of aircraft or aircraft component technical evaluation against a recognized

airworthiness code has been carried out by the Authority and has been found to:

- (i) Meet the required standards of the recognized airworthiness code; or
 - (ii) Has complied with any recommendations required by the Authority.
- (d) The aircraft or aeronautical product for which a Type Acceptance Certificate is sought meets the requirements of these regulations.
- (e) The Authority may deny the issuance of an acceptance type certificate if it is considered by the Authority that such issuance is contrary to the public interest, in which case the Authority will notify in writing the applicant of the reasons for the denial;
- (f) Upon acceptance of the type certificate by the Authority, the Authority may, prior to issue of standard or special certificate of airworthiness, require the applicant to comply with any additional requirements as prescribed by the Authority.

5.2.2.4 **Recognized Foreign Countries**

- (a) The Authority shall accept the Type Certificates (TCs) or equivalent documents from any of the under listed recognized countries:
- (1) Canada;
 - (2) New Zealand;
 - (3) The French Republic;
 - (4) The Kingdom of the Netherlands;
 - (5) The United Kingdom;
 - (6) The United States of America;
- (b) Some of these countries are in the process of international harmonization and use or will use the term “Type Certificate”, but earlier documents may be referred to as “Type Approval Certificate”, “Certificate of Type Approval”, “Fiche de Navigabilite” etc.
- (c) This automatic acceptance procedure does not apply in situations where the CAA of a recognized country has issued a TAC or similar document on the basis that the CAA of another country has issued a TC.
- (d) The foreign CAA that issued the original TC or equivalent document will be regarded as the relevant CAA for airworthiness control of the aircraft listed on that certificate.

5.2.2.5 **Applicable Code of Airworthiness**

- (a) Until Liberia develops a comprehensive Code of Airworthiness design, the mandatory requirements and design standards of the State of Design, shall be mandatory on all aircraft registered in Liberia.
- (b) The Authority will apply the detailed comprehensive code of airworthiness issued by the State of Design, provided:
- (1) The issuing State is an ICAO Contracting State;
 - (2) The Code of Airworthiness is in conformance with the Standards and recommended practices of ICAO Annex 8;

- (3) A copy of the regulations conforming the Code of Airworthiness is provided with the application for the Type Acceptance Certificate and is published in the English Language;
- (4) There is a satisfactory method of updating the Authority's copy of the regulations conforming the Code of Airworthiness, throughout the time the aircraft is registered in Liberia;

5.2.2.6 **Suspension or Revocation of the Type Acceptance Certificate**

- (a) The authority may suspend or revoke a type acceptance certificate if it considers that it is necessary to do so in the interest of safety, in particular the inability of the type certificate holder to provide continuing technical support for the type of aircraft.

5.2.2.7 **Supplemental Type Acceptance Certificate**

- (a) This Subpart prescribes procedural requirements for the acceptance of a supplemental type certificates.
- (b) Any person who proposes to modify an aeronautical product by introducing a major modification in type design, not great enough to require a new application for a type certificate, shall apply for a Supplemental Type Certificate to the regulatory authority of the State of Design that approved the type certificate for that product, or to the State of Registry of the aircraft provided that the State of Registry has the technical expertise to evaluate the proposed change in accordance with the type design. The applicant shall apply in accordance with the procedures prescribed by that State.
- (c) After the issuance of a Supplemental Type Certificate by the State of Design, that person shall apply to the Authority for the acceptance of the original Supplemental Type Certificate in a form and manner prescribed by the Authority.
- (d) The authority may suspend or revoke an acceptance of a supplemental type certificate if it considers that it is necessary to do so in the interest of safety

5.2.3 **TYPE ACCEPTANCE CERTIFICATE FOR IMPORTED AIRCRAFT CERTIFICATED BY NATIONAL AVIATION AUTHORITY OF RECOGNISED COUNTRY**

- (a) The Authority may issue a type acceptance certificate for an aircraft manufactured in a foreign country, without making the type acceptance certificate subject to any conditions, if:
 - (1) a foreign type certificate or equivalent document issued by the national aviation authority of a recognized country is in force for aircraft of that type; and
 - (2) the applicant has submitted to the Authority:
 - (i) evidence that the type design has been approved by the national aviation authority of the recognized country by issue of a type certificate or equivalent document; and
 - (ii) details of any equivalent safety determinations or waivers (however described) that were made in the course of the type certification; and

- (iii) a copy of the applicable type certificate data sheet; and
 - (iv) a copy of the flight manual that contains all the available options applicable to the type, and that was approved by the national aviation authority that issued the foreign type certificate; and
 - (v) a copy of the manufacturer's instructions for continued airworthiness of the aircraft; and
 - (vi) a copy of the parts catalogue for the aircraft; and
 - (vii) a list of all current field service documents applicable to the aircraft; and
 - (viii) an undertaking from the holder of the foreign type certificate to continue to supply to the Authority service bulletins and instructions for the continuing airworthiness of aircraft of that type and any amendments of the documents mentioned in subparagraphs (iv), (v), (vi) and (vii) and
 - (ix) compliance to established factory acceptance procedures.
- (b) Upon acceptance of the type certificate by the Authority, the Authority may, prior to issue of standard or special certificate of airworthiness, require the applicant to comply with any additional requirements as may be prescribed by the Authority.

5.3 CERTIFICATES OF AIRWORTHINESS

5.3.1 APPLICABILITY

- (a) This Subpart prescribes procedures required for the issue of Certificates of Airworthiness and other certifications for aeronautical products registered in Liberia.
- (b) No person shall operate an aircraft registered in Liberia without the appropriate and valid airworthiness certificates for that aircraft.
- (c) The Authority shall issue a certificate of airworthiness for aircraft registered in Liberia based on satisfactory evidence that the aircraft complies with the design aspects of the appropriate airworthiness requirements (type certificate).
- (d) An aircraft to which a certificate of airworthiness is issued shall be operated in accordance with the terms and conditions of that certificate and within the approved operating limitations in its flight manual.

5.3.2 ELIGIBILITY

- (a) Any registered owner of a Liberia registered aircraft, or agent of the owner, may apply for a Certificate of Airworthiness for that aircraft.
- (b) An aircraft registered in Liberia shall not be issued a Certificate of Airworthiness unless it is type certificated in a recognized State and there exists in force in respect of that aircraft, a type certificate and type certificate data sheet accepted by the Authority.

5.3.3 APPLICATION FOR A CERTIFICATE OF AIRWORTHINESS

- (a) Each applicant for a Certificate of Airworthiness shall apply in a form and manner acceptable to the Authority.
- (b) Each applicant shall make the application for an initial issue of a certificate of airworthiness at least 30 days before the date of intended operation.

5.3.4 AIRCRAFT IDENTIFICATION

- (a) Each applicant for an airworthiness certificate shall show that the aircraft is properly registered and marked, including identification plates.

5.3.5 CLASSIFICATIONS OF CERTIFICATES OF AIRWORTHINESS

- (a) Certificate of Airworthiness will be classified as standard certificates of airworthiness and special certificates of airworthiness.
- (b) A standard Certificate of Airworthiness will be issued for aircraft in the specific category and model designated by the State of Design in the type certificate. The types of standard certificates of airworthiness include —
 - (1) Normal;
 - (2) Utility;
 - (3) Acrobatic;
 - (4) Transport;
 - (5) Commuter;
 - (6) Balloon;
 - (7) Other
- (c) A Special Airworthiness Certificate will be issued for aircraft that do not meet the requirements of the State of Design for a standard airworthiness certificate. The types of special airworthiness certificates include—
 - (1) Primary;
 - (2) Restricted;
 - (3) Limited;
 - (4) Provisional
 - (5) Experimental
 - (6) Special flight permits;
 - (7) Other.

5.3.6 ISSUANCE OR VALIDATION OF A STANDARD CERTIFICATE OF AIRWORTHINESS

- (a) The Authority will issue a standard certificate of airworthiness if—

- (1) The applicant presents evidence to the Authority that the aircraft conforms to a type design approved under a type certificate or a supplemental type certificate and to the applicable Airworthiness Directives of the State of Design;
 - (2) In the case of initial C of A, the applicant presents evidence to the Authority that all required operational and maintenance actions and procedures under applicable Airworthiness Directives, have been fully carried out in accordance with the compliance times set out in the Airworthiness Directives;
 - (3) That all outstanding Minimum Equipment List (MEL) and Configuration Deviation List (CDL) items have been cleared;
 - (4) The aircraft has been inspected in accordance with the performance rules of section 5.8 of this regulation for inspections and found airworthy by persons authorized by the Authority to make such determinations within the last 30 calendar days;
 - (5) The Authority finds after an inspection that the aircraft conforms to type design and is in condition for safe operation.
 - (6) It is satisfied that, in the case of an initial aircraft registration, the aircraft, provided it has not come off the production line, has undergone a heavy check; or bridging maintenance as may be applicable; and
 - (7) The aircraft is being maintained in accordance with a maintenance program or schedule approved by the Authority; and
 - (8) All required aircraft records are on file and available for inspection.
- (b)** The Authority, when issuing its Certificate of Airworthiness, may consider the previous Certificate of Airworthiness issued by another Contracting State, as satisfactory evidence, in whole or in part, that the aircraft complies with the applicable requirements of this Part
- (c)** When a State of Registry renders valid a Certificate of Airworthiness issued by another Contracting State, as an alternative to issuance of its own Certificate of Airworthiness, it shall establish validity by suitable authorization to be carried with the former Certificate of Airworthiness accepting it as the equivalent of the latter. The validity of the authorization shall not extend beyond the period of validity of the Certificate of Airworthiness being rendered valid.
- (d)** The Standard Certificate of Airworthiness or the validation shall be issued using the certificate as specified in IS: 5.3.6.
- (e)** The Standard Certificate of Airworthiness or validation certificate shall be issued in the English language.
- (f)** All modifications and repairs shall where applicable comply with airworthiness requirements acceptable to the Authority. Substantiating data supporting compliance with the airworthiness requirements shall be retained. However, in the case of a major repair or major modification, the work must have been done in accordance with technical, including engineering, data approved by the state of design and accepted by the Authority

5.3.7 ISSUANCE OF SPECIAL CERTIFICATES OF AIRWORTHINESS

- (a) The Authority may issue a Special Certificate of Airworthiness to an aircraft that does not qualify for a Standard Certificate of Airworthiness.
- (b) The Authority, when issuing its Special Airworthiness Certificate, may consider the previous Special Airworthiness Certificate, issued by another Contracting State, as satisfactory evidence, in whole or in part, for the issuance of a Special Airworthiness Certificate.
- (c) When a State of Registry renders valid a Special Certificate of Airworthiness issued by another Contracting State, as an alternative to issuance of its own Special Certificate of Airworthiness, it shall establish validity by suitable authorization to be carried with the former Certificate of Airworthiness accepting it as the equivalent of the later.
- (d) Aircraft holding Special Certificates of Airworthiness shall be subject to operating limitations within Liberia and may not make international flights except as specified in (d) below. The Authority shall issue specific operating limitations for each Special Airworthiness Certificate.
- (e) No person may operate an aircraft with a special Certificate of Airworthiness
 - (1) except in accordance with the applicable regulations and in accordance with conditions and limitations which may be prescribed by the Authority as part of this certificate, or
 - (2) over any foreign country without the permission of that country
- (f) The Special Certificate of Airworthiness shall be issued using the certificate as specified in IS: 5.3.7.
- (g) The Special Certificate of Airworthiness or validation certificate shall be issued in the English language.

5.3.8 ISSUANCE OF SPECIAL FLIGHT PERMITS AS SPECIAL CERTIFICATE OF AIRWORTHINESS

- (a) The Authority may issue a Special Flight Permit to an aircraft that is capable of safe flight, but unable to meet applicable airworthiness requirements, for the purpose of:
 - (1) Flying to a base where repairs, modifications, maintenance, or inspections are to be performed, or to a point of storage;
 - (2) Testing after repairs, modifications, or maintenance have been performed;
 - (3) Delivering or exporting the aircraft;
 - (4) Evacuating aircraft from areas of impending danger; and
 - (5) Operating at weight in excess of the aircraft's maximum Certified Takeoff Weight for flight beyond normal range over water or land areas where adequate landing facilities or appropriate fuel is not available. The excess weight is limited to additional fuel, fuel-carrying facilities, and navigation equipment necessary for the flight.

- (b) In the case of Special Flight Permits, the Authority shall require a properly executed maintenance endorsement in the aircraft permanent record by a person or organisation, authorised in accordance to Part 5, stating that the subject aircraft has been inspected and found to be safe for the intended flight.
- (c) The operator shall obtain all required overflight authorisations from countries to be overflown on flights outside Liberia.
- (d) The Special flight permits shall be issued using the certificate as specified in IS: 5.3.8.
- (e) The Special flight permits shall be issued in the English language.

5.3.9 ISSUE A SPECIAL FLIGHT PERMIT WITH CONTINUING AUTHORIZATION

- (a) The Authority may issue a special Flight Permit with continuing authorization issued to an aircraft that may not meet applicable airworthiness requirements but is capable of safe flight, for the purpose of flying the aircraft to a base where maintenance or alterations are to be performed.
- (b) The permit issued under paragraph(a) is an authorization, including conditions and limitations for flight, which is set forth in the AOC Holder's maintenance control manual. This permit under this paragraph may be issued to an AOC Holder certificated under Part 9.

5.3.10 DURATION AND RENEWAL OF CERTIFICATES OF AIRWORTHINESS

- (a) A certificate of airworthiness or special airworthiness certificate issued by the Authority is effective for twelve (12) months unless:
 - (1) A special termination date is otherwise established by the Authority—
 - (2) The Authority amends, suspends, revokes or otherwise terminates the certificate;
 - (3) The certificate holder surrenders it to the Authority; or
- (b) A Standard Certificate of Airworthiness shall be renewed or shall remain in effect,
 - (1) until sold to a person outside of Liberia;
 - (2) until the aircraft is leased for operations, registered in another country, and is removed from the registry of Liberia, or
 - (3) until revoked by the State of Registry.
- (c) A special airworthiness certificate, such as a special flight permit, is valid for the period of time specified in the permit, which in any case shall not exceed twelve months.
- (d) The validity of a validation certificate issued by Liberia shall not extend beyond the period of validity of the Certificate of Airworthiness on which the State validation certificate is based, or twelve months, whichever is less.

- (e) Notwithstanding the provisions of paragraph (d), the validity of a validation certificate shall end with the suspension or revocation of the certificate by the issuing State.
- (f) A holder of a certificate of airworthiness that applies for a renewal of its certificate for aircraft registered in Liberia must submit its request for renewal no later than 30 days before the current certificate of airworthiness expires.
- (g) If a request for renewal is not made within this period, the holder of a certificate of airworthiness must follow the application procedures for initial issuance as prescribed by the Authority.
- (h) Each application for renewal of a Certificate of Airworthiness shall be made in a form and manner acceptable to the Authority.
- (i) Failure to maintain an aircraft in an airworthy condition, as defined by the appropriate airworthiness requirements of the State of Registry, shall render the aircraft ineligible for operations until the aircraft is restored to an airworthy condition.
- (j) When an aircraft imported for registration in Liberia has a Certificate of Airworthiness issued by another contracting state, Liberia may, as an alternative to issuance of its own Certificate of Airworthiness, establish validity by suitable authorization to be carried with the former Certificate of Airworthiness accepting it as the equivalent of a Certificate of Airworthiness issued by Liberia.

5.3.11 **SUSPENSION OR REVOCATION OF CERTIFICATE OF AIRWORTHINESS**

- (a) The authority may suspend or revoke a standard or special Certificate of Airworthiness issued in respect of an aircraft if:
 - (1) The aircraft or such of its equipment as is necessary for the airworthiness of the aircraft is maintained or if any part of the aircraft or such equipment is removed or is replaced, otherwise than in a manner and with material of a type approved by the Authority either generally or in relation to a class of aircraft or to the particular aircraft;
 - (2) The aircraft or any of its equipment is not maintained as required by the maintenance programme or schedule approved by the Authority in relation to that aircraft;
 - (3) An inspection or modification classified as mandatory by the Authority applicable to the aircraft or of any such equipment referred in paragraph (1), has not, been completed to the satisfaction of the Authority; or
 - (4) The aircraft or any such equipment as aforementioned sustains damage and the damage is ascertained during inspection which affects the airworthiness of the aircraft;
- (b) Upon surrender or revocation, the certificate shall be returned to the authority within 7 working days.

5.3.12 **CONDITIONS OF SPECIAL FLIGHT PERMIT**

- (a) A person shall not fly an aircraft on a special flight permit unless that person has complied with conditions of this Regulation.
- (b) A person who flies an aircraft on a special flight permit referred in 5.3.8 shall ensure that:

- (1) a copy of the permit is carried on board the aircraft at all times when operating under the terms of the permit;
- (2) the registration marks assigned to the aircraft by the State of Registry are displayed on the aircraft in conformity with the requirements of that State;
- (3) No persons or property are carried for compensation or hire;
- (4) No person are carried in the aircraft unless that person is essential to the purpose of the flight and has been advised of the contents of the authorization and the airworthiness status of the aircraft;
- (5) The aircraft is operated only by flight crew who are aware of the purpose of the flight and any limitations imposed, and who hold appropriate certificates or licenses acceptable to the authority;
- (6) All flights are conducted so as to avoid areas where flights might create hazardous exposure to persons or property;
- (7) all flights are conducted within the performance operating limitations prescribed in the aircraft flight manual and any additional limitations specified by the authority for the particular flight; and
- (8) All flights are conducted prior to the expiry date of the special flight permit or at any other time the Authority declares so in writing; and
- (9) The aircraft shall not depart for the flight on a special flight permit unless the aircraft has on board the required authorizations from the State(s) of intended routing.

5.3.13 COOPERATION AMONG STATES FOR CONTINUING AIRWORTHINESS INFORMATION, INCLUDING AIRWORTHINESS DIRECTIVES

- (a) Upon registration of an aircraft in Liberia, the Authority will notify the State of Design of the aircraft of the registration in Liberia, and request that the Authority receives any and all airworthiness directives addressing that aircraft, airframe, aircraft engine, propeller, appliance, or component part and any requirements for the establishment of specific continuing airworthiness programs.
- (b) Whenever the State of Design considers that a condition in an aircraft, airframe, aircraft engine, propeller, appliance, or component part is unsafe as shown by the issuance of an airworthiness directive by that State, such directives shall apply to Liberia registered civil aircraft of the type identified in that airworthiness directive.
- (c) The Authority may identify continuing airworthiness information including manufacturer's service bulletins and other sources of data, or develop and prescribe inspections, procedures and limitations, for mandatory compliance pertaining to affected aircraft in Liberia.
- (d) No person may operate any Liberia registered civil aircraft to which the measures of this subsection apply, except in accordance with the applicable airworthiness directives and service bulletins.

5.3.14 AMENDMENT OF AIRWORTHINESS CERTIFICATE

- (a) The Authority may amend or modify a Certificate of Airworthiness or a special airworthiness certificate-

- (1) Upon application from an owner or operator; or
- (2) On its own initiative

(b) Amendment may be made under the following conditions:

- (1) Modification; (STC or amended TC)
- (2) A change to the authority and basis for issue;
- (3) A change in the aircraft model
- (4) A change in the operating limitations for an aircraft with a special airworthiness certificate.

5.3.15 **TRANSFER OR SURRENDER OF A CERTIFICATE OF AIRWORTHINESS**

(a) An owner shall transfer a certificate of airworthiness—

- (1) To the lessee upon lease of an aircraft within or outside Liberia.
- (2) To the buyer upon sale of the aircraft within Liberia.

(b) An owner shall surrender the certificate of airworthiness for the aircraft to the issuing Authority upon sale of that aircraft outside of Liberia.

5.3.16 **COMMERCIAL AIR TRANSPORT**

The Authority will consider an airworthiness certificate valid for commercial air transport only when accompanied by operations specifications issued by the Authority which identifies the specific types of commercial air transport authorized.

5.3.17 **DISPLAY OF CERTIFICATE OF AIRWORTHINESS**

No person may operate a civil aircraft in Liberia or registered in Liberia unless the Certificate of Airworthiness required by this subpart, or a special flight permit, is displayed at the cabin or cockpit entrance so that it is legible to the passengers or crew.

5.3.18 **AIRCRAFT LIMITATIONS AND INFORMATION**

Each aircraft shall be provided with a flight manual, placards or other documents stating the approved limitations within which the aircraft is considered airworthy as defined by the appropriate airworthiness requirements and additional instructions and information necessary for the safe operation of the aircraft.

5.3.19 **TEMPORARY LOSS OF AIRWORTHINESS**

Any failure to maintain an aircraft in an airworthy condition as defined by the appropriate airworthiness requirements shall render the aircraft ineligible for operation until the aircraft is restored to an airworthy condition.

5.4 AIRCRAFT NOISE CERTIFICATE

5.4.1 APPLICABILITY

- (a) This Subpart establishes the requirements for issuance of aircraft noise certificates.

5.4.2 REQUIREMENT OF NOISE CERTIFICATION

- (a) An aircraft to which this regulation applies shall not land or take off in Liberia unless there is in force a noise certificate issued or rendered valid by the authority of the State of Registry.

5.4.3 ELIGIBILITY

- (a) Any registered owner of a Liberia registered aircraft, or agent of the owner, may apply for a noise certificate for that aircraft.

5.4.4 APPLICATION FOR AIRCRAFT NOISE CERTIFICATE

- (a) A registered owner of Liberia registered aircraft, or agent of the owner, shall apply for a noise certificate in a form and manner prescribed by the Authority.
- (b) The applicant for a noise certificate shall provide evidence acceptable to the Authority that the aircraft meets the noise certification levels for which the applicant requests certification.
- (c) Such evidence may include documentation from the manufacturer approved aircraft flight manual or other documents evidencing noise compliance as approved by the State of Design of that aircraft.

5.4.5 ISSUE, SUSPENSION, REVOCATION OF NOISE CERTIFICATE

- (a) An aircraft included in the classification defined for noise certification purpose in IS: 16.1.3 shall be issued with a noise certificate or a suitable statement attesting noise certification contained in another document approved by the state of registry and required by that state to be carried in the aircraft.
- (b) The noise certificate referred to in (a) above shall be issued or validated by the Authority on the basis of satisfactory evidence that the aircraft complies with the requirements which are at least equal to the applicable standards specified in LCAR Part 16, section 16.1.3, IS 16.1.3 in accordance with the Annex 16 Volume 1 to the Chicago Convention.
- (c) The document attesting noise certification of an aircraft shall be issued using the certificate as specified in IS: 16.1.3 of LCAR Part 16.
- (d) The noise certificate permits shall be issued in the English language.
- (e) The Authority shall-
 - (1) Suspend or revoke the noise certificate of aircraft on the civil aircraft register if the aircraft ceases to comply with the applicable noise standards;

- (2) Not re-instate or grant a new noise certificate unless the aircraft is found on reassessment to comply with the applicable noise standards.
- (3) Upon surrender or revocation, the certificate shall be returned to the authority.

5.4.5.1 Duration And Continued Validity Of A Noise Certificate

- (a) A noise certificate shall be issued for an unlimited duration. It shall remain valid subject to:
 - (1) Compliance with the applicable type-design, environmental protection and continuing airworthiness requirements; and
 - (2) The aircraft remaining on the Liberia register; and
 - (3) The type-certificate under which it is issued not being previously invalidated;
 - (4) The certificate not being surrendered or revoked under 5.4.5;
 - (5) Upon surrender or revocation, the certificate shall be returned to the authority of the Member State of registry.

5.4.5.2 Transferability

- (a) Where ownership of an aircraft has changed and the aircraft remains on the same register, the noise certificate shall be transferred together with the aircraft.

5.5 EXPORT CERTIFICATE OF AIRWORTHINESS

5.5.1 APPLICABILITY

- (a) This subpart prescribes the requirements for the issue of an export certificate of airworthiness for aircraft, engines, propellers and other aeronautical products registered in Liberia.
- (b) The Authority may issue an export certificate of airworthiness for aeronautical products classified as class I products when such products are being exported out of Liberia
- (c) In the case of a complete aircraft, the Export Certificate of Airworthiness will confirm the aircraft's conformity with the approved design data and its acceptable airworthiness status, stating in effect that if the aircraft were to remain on the registry of Liberia, it would continue to qualify for the continuance of its Certificate of Airworthiness.
- (d) For products other than a Class I product, the export certification of airworthiness may be issued in the form of certificates of release to service or identification tags, which will confirm that the product in question meets the approved design data, is in a condition for safe operation and complies with any special requirements as notified by the importing State.

Note It is very important to understand that an export certificate of airworthiness is not a Certificate of Airworthiness as defined by Article 31 of the Convention and therefore does not confer the right of international flight and cannot be validated in accordance with Annex 8, Part II, Chapter 3, 3.2.4. to fly internationally. An aircraft having an Export Certificate of Airworthiness will require a valid Certificate of Airworthiness issued by the State of Registry.*

5.5.2 **ELIGIBILITY**

- (a) Any registered owner of a Liberia registered aircraft, or agent of the owner, may apply for an export certificate of airworthiness for that aircraft, engine, propeller or aeronautical product.

5.5.3 **APPLICATION FOR AN EXPORT CERTIFICATE OF AIRWORTHINESS**

- (b) Each applicant for an export certificate of airworthiness shall apply in a form and manner specified by the Authority.

5.5.4 **CLASSIFICATION OF AERONAUTICAL PRODUCTS**

- (a) For the purpose of subsection 5.5.2 the authority establishes the following class of product:
 - (1) Class I product – a complete aircraft, engine or propeller which has been type certificated in accordance with the appropriate airworthiness requirements and for which the necessary type certificate data sheets or equivalent have been issued.
 - (2) Class II product – a major component of a Class I product such as a wing, fuselage, empennage, surface, the failure of which would jeopardize the safety of a Class I product or any part, material or system thereof.
 - (3) Class III product – any part or component which is not a Class I or Class II product or a standard part.

5.5.5 **ISSUANCE OF EXPORT CERTIFICATE OF AIRWORTHINESS**

- (a) Except as provided in sub-paragraph (b) of this paragraph, the Authority shall issue a Export Certificate of Airworthiness for an aircraft registered in Liberia based on satisfactory evidence that:
 - (1) the aircraft complies with the design aspects of the appropriate airworthiness requirements (type certificate) and is in a condition for safe operation
 - (2) the aircraft meets the additional requirements for import of the importing country.
- (b) An aircraft need not meet a requirement specified in paragraph (a) to (b) of this subsection as applicable, if acceptable to the importing country and the importing country indicates that acceptability in writing.
- (c) The Export Certificate of Airworthiness of an aircraft shall be issued using the certificate as specified in IS: 5.5.5.
- (d) The Export Certificate of Airworthiness shall be issued in the English language.

5.5.6 **EXPORT CERTIFICATE OF AIRWORTHINESS STATUS**

- (a) The Certificate of Airworthiness does not grant the right of international flight and cannot be validated.

- (b) To be eligible for international flight, an aircraft having an Export Certificate of Airworthiness shall carry a valid Certificate of Airworthiness issued by the State of Registry, or some equivalent document mutually acceptable to the exporting and importing States, as well as any State over which the aircraft will fly on its delivery flight.

5.6 CONTINUED AIRWORTHINESS OF AIRCRAFT AND AERONAUTICAL COMPONENTS

5.6.1 APPLICABILITY

- (a) This Subpart prescribes rules governing the continued airworthiness of civil aircraft registered in Liberia whether operating inside or outside the borders of Liberia.

5.6.2 RESPONSIBILITY

- (a) The owner of an aircraft or, in the case of a leased aircraft, the lessee, shall be responsible for maintaining the aircraft in an airworthy condition by ensuring that-
- (1) All maintenance, overhaul, modifications and repairs which affect airworthiness are performed as prescribed by the State of Registry;
 - (2) Maintenance personnel make appropriate entries in the aircraft maintenance records certifying that the aircraft is airworthy;
 - (3) The approval for return to service (maintenance release) is completed and signed to the effect that the maintenance work performed has been completed satisfactorily and in accordance with the Maintenance Program and the prescribed methods and shall contain the following information:
 - (i) basic details of the maintenance carried out including detailed reference of the approved data used;
 - (ii) Date such maintenance was completed;
 - (iii) When applicable, the identity of the Approved Maintenance Organization; and
 - (iv) The identity of the person or persons signing the release.
 - (4) In the event there are open discrepancies, the maintenance release includes a list of the uncorrected maintenance items and these items are made a part of the aircraft permanent record.
 - (5) The operational and emergency equipment necessary for the intended flight is serviceable; and
 - (6) The Certificate of Airworthiness of the aircraft remains valid.

5.6.3 GENERAL

- (a) No person may perform maintenance, preventive maintenance, or modifications on an aircraft other than as prescribed in this regulation.

- (b) No person may operate an aircraft for which a manufacturer's maintenance manual or instructions for continued airworthiness has been issued that contains an airworthiness limitation section unless the mandatory replacement times, inspection intervals, and related procedures specified in that section or alternative inspection intervals and related procedures set forth in the operations specifications approved under part 9, or in accordance with the inspection program approved under Part 8 have been complied with.
- (c) No person may operate an aircraft, aeronautical product, or accessory to which an Airworthiness Directive applies, issued either by the State of Design, or State of Manufacture and adopted for Liberia-registered aircraft by the Authority, or by the State of Registry for aircraft operated within Liberia, except in accordance with the requirements of that Airworthiness Directive.
- (d) When the Authority determines that an airframe or aeronautical product has exhibited an unsafe condition and that condition is likely to exist or to develop in other products of the same type design, the Authority may issue an Airworthiness Directive prescribing inspections and the conditions and limitations, if any, under which those products may continue to be operated.
- (e) The Authority shall report any airworthiness directives or continuing additional airworthiness requirements that it issues or any malfunction or defect reports to the State of Design.
- (f) No person shall transmit sensitive aviation security information when distributing mandatory continuing airworthiness information.
- (g) Sensitive aviation security information shall be transmitted securely to the appropriate authority in the State of Design in accordance with the Liberia civil Aviation Security Regulations.

5.6.4 MAINTENANCE AND OPERATIONAL EXPERIENCE

- (a) The owner or operator of an aeroplane over 5,700 kg or an helicopters over 3,175 kg maximum certificated take-off mass shall monitor and assess maintenance and operational experience with respect to continuing airworthiness and have a system whereby information on faults, malfunctions, defects and other occurrences that cause or might cause adverse effects on the continuing airworthiness of the aircraft is transmitted to the organization responsible for the type design of the aircraft.
- (b) The operator of an aeroplane over 5 700 kg or an helicopter over 3,175 kg maximum certificated take-off mass shall obtain and assess continuing airworthiness information and recommendations available from the organization responsible for the type design and shall implement resulting actions considered necessary in accordance with a procedure acceptable to the State of Registry.
- (c) The owner or operator and maintenance organizations shall report to the Authority in respect of aeroplanes over 5,700kg and helicopters over 3,175kg maximum certificated take-off mass the service information required by the authority according to the procedure, established by the Authority.
- (d) The owner or operator and maintenance organizations shall transmit to the organization responsible for the type design of aircraft respect of aeroplanes over 5,700kg and helicopters over 3,175kg maximum certificated take-off mass information on faults, malfunction, defects and other occurrences that cause or might cause adverse effect on the continuing airworthiness of the aircraft.

5.6.5 REPORTING OF FAILURES, MALFUNCTIONS, AND DEFECTS

- (a) Owners or operators of aircraft over 5,700 kg maximum take-off weight shall report to the Authority any failures, malfunctions, or defects that result in at least the following—
- (1) Fires during flight and whether the related fire-warning system properly operated;
 - (2) Fires during flight not protected by a related fire-warning system;
 - (3) False fire warning during flight;
 - (4) An engine exhaust system that causes damage during flight to the engine, adjacent structure, equipment, or components;
 - (5) An aircraft component that causes accumulation or circulation of smoke, vapor, or toxic or noxious fumes in the crew compartment or passenger cabin during flight;
 - (6) Engine shutdown during flight because of flameout;
 - (7) Engine shutdown during flight when external damage to the engine or aircraft structure occurs;
 - (8) Engine shutdown during flight due to foreign object ingestion or icing;
 - (9) Shutdown during flight of more than one engine;
 - (10) A propeller feathering malfunction or inability of the system to control overspeed during flight;
 - (11) A fuel or fuel-dumping system failure that affects fuel flow or causes hazardous leakage during flight;
 - (12) An unintended landing gear extension or retraction, or opening or closing of landing gear doors during flight;
 - (13) Brake system components failure that result in loss of brake actuating force when the aircraft is in motion on the ground;
 - (14) Aircraft structure that requires major repair;
 - (15) Cracks, permanent deformation, or corrosion of aircraft structure, if more than the maximum acceptable to the manufacturer or the Authority;
 - (16) Aircraft components or systems malfunctions that result in taking emergency actions during flight (except action to shut down an engine);
 - (17) Each interruption to a flight, unscheduled change of aircraft en route, or unscheduled stop or diversion from a route, caused by known or suspected technical difficulties or malfunctions;
 - (18) Any abnormal vibration or buffeting caused by a structural or system malfunction, defect, or failure; and
 - (19) A failure or malfunction of more than one attitude, airspeed, or altitude instrument during a given operation of the aircraft
- (b) Owners or operators of aircraft over 5,700 kg maximum take-off weight shall report to the Authority—
- (1) The number of engines removed prematurely because of malfunction, failure or defect, listed by make and model and the aircraft type in which it was installed; and

- (2) The number of propeller featherings in flight, listed by type of propeller and engine and aircraft on which it was installed.
- (c) Each report required by this Subsection shall—
- (1) Be made within 3 days after determining that the failure, malfunction, or defect required to be reported has occurred; and
 - (2) Include as much of the following information as is available and applicable—
 - (i) Make, Model and aircraft mark;
 - (ii) Name of the owner or operator;
 - (iii) Aircraft serial number;
 - (iv) When the failure, malfunction, or defect is associated with an article approved under a TSO authorization, the article serial number and model designation, as appropriate;
 - (v) When the failure, malfunction or defect is associated with an engine or propeller, the engine or propeller serial number, as appropriate;
 - (vi) Product model;
 - (vii) Identification of the part, component, or system involved, including the part number; and
 - (viii) Nature of the failure, malfunction, or defect
- (d) The Authority, if it is the Authority of the State of Registry of the aircraft, will submit all such reports upon receipt to the State of Design.
- (e) The Authority, if it is not the Authority of the State of Registry of the aircraft, will submit all such reports upon receipt to the State of Registry.

5.7 AIRCRAFT MAINTENANCE AND INSPECTION REQUIREMENTS

5.7.1 GENERAL

5.7.1.1 Applicability

- (a) This Subpart prescribes rules governing the maintenance and inspection of any aircraft having a Certificate of Airworthiness issued by Liberia or associated aeronautical products

5.7.1.2 General Requirements For Maintenance And Inspections

- (a) No person may operate an aircraft unless the aircraft and its components are maintained in accordance with a maintenance program and the aircraft is inspected according to an inspection program approved by the Authority.
- (b) The maintenance program shall include a description of the aircraft and components and recommended methods for the accomplishment of maintenance tasks. Such information shall include guidance on defect diagnosis.
- (c) The maintenance program shall include the maintenance tasks and the recommended intervals at which these tasks are to be performed.
- (d) Maintenance tasks and frequencies that have been specified as mandatory by the State of Design in approval of the type design shall be identified in the maintenance program.

- (e) The maintenance program shall have a maintenance release process, including signed documentation, in a manner satisfactory to the Authority, indicating that the maintenance performed has been completed satisfactorily.
- (f) A maintenance release shall contain a certification including—
 - (1) Basic details of the maintenance carried out;
 - (2) Date such maintenance was completed;
 - (3) When applicable, the identity of the approved maintenance organization, AMT, or AOC holder; and
 - (4) The identity of the person or persons signing the release
- (g) The owner or operator shall use one of the following inspection programs as appropriate for the aircraft and the type operation.
 - (1) Annual inspection,
 - (2) Annual/100 hour inspections,
 - (3) Progressive, or
 - (4) Continuous airworthiness maintenance program

Note: Mandatory requirements identified as part of the type design approval are often referred to as Certification Maintenance Requirements (CMR) and/or airworthiness limitations.

5.7.2 PERSONS AUTHORIZED

5.7.2.1 Persons Authorized To Perform Maintenance, Preventive Maintenance, Rebuilding, Repair And Modifications

- (a) No person may perform any task defined as maintenance on an aircraft or aeronautical products, except as provided in the following—
 - (1) A pilot licensed by the Authority may perform preventive maintenance on any aircraft owned or operated by that pilot so long as the aircraft is not listed for use by an AOC holder.
 - (2) A person working under the supervision of an aviation maintenance technician, may perform the maintenance, preventive maintenance, rebuilding and modifications that the supervisory aviation maintenance technician is authorized to perform—
 - (i) If the supervisor personally observes the work being done to the extent necessary to ensure that it is being done properly, and
 - (ii) If the supervisor is readily available, in person, for consultation
 - (3) A licensed aviation maintenance technician may perform or supervise the maintenance or modification of an aircraft or aeronautical product for which he or she is rated subject to the limitation of Part 2 of these regulations.
 - (4) An AMO may perform aircraft maintenance within the limits specified by the Authority.
 - (5) The AOC holder may perform aircraft maintenance as specified by the Authority.
 - (6) A manufacturer holding an AMO may-

- (i) Rebuild or alter any aeronautical product manufactured by that manufacturer under a type or production certificate;
- (ii) Rebuild or alter any aeronautical product manufactured by that manufacturer under a TSO Authorization, a Parts manufacturer Approval by the State of Design, or Product and Process Specification issued by the State of Design; and
- (iii) Perform any inspection required by Part 8 of these Directives on aircraft, it manufactures, while currently operating under a production certificate or under a currently approved production inspection system for such aircraft.

5.7.2.2 Authorized Personnel To Approve For Return To Service

- (a) No person or entity, other than the Authority, may approve an aircraft, airframe, aircraft engine, propeller, appliance, or component part for return to service after it has undergone maintenance, preventive maintenance, rebuilding, or modification, except as provided in the following:
- (1) A pilot licensed by the Authority may return his or her aircraft to service after performing authorized preventive maintenance.
 - (2) A licensed aviation maintenance technician may approve aircraft and aeronautical products for return to service after he or she has performed, supervised, or inspected its maintenance subject to the limitation of these regulations.
 - (3) An AMO may approve aircraft and aeronautical products for return to service as provided in the operations specifications approved by the Authority.
 - (4) An AOC holder may approve aircraft and aeronautical products for return to service as specified by the Authority.

5.7.2.3 Persons Authorized To Perform Inspections

- (a) No person, other than the Authority, may perform the inspections required by part 8 of Liberia Civil Aviation Regulation for aircraft and aeronautical products prior to or after it has undergone maintenance, preventive maintenance, rebuilding, or modification, except as provided in the following:
- (1) An aviation maintenance technician may conduct the required inspections of aircraft and aeronautical products for which he or she is rated and current.
 - (2) An AMO may perform the required inspections of aircraft and aeronautical products as provided in the operations specifications approved by the Authority.
 - (3) An AOC holder may perform the required inspections of aircraft and aeronautical products in accordance with specifications issued by the Authority.

5.7.3 PERFORMANCE RULES

5.7.3.1 Performance Rules: Maintenance

- (a) Each person performing maintenance, preventive maintenance, or modification on an aeronautical product shall use the methods, techniques, and practices prescribed in—
- (1) The current manufacturer's maintenance manual or instructions for Continued Airworthiness prepared by its manufacturer; and
 - (2) Additional methods, techniques and practices required by the Authority; or methods, techniques and practices designated by the Authority where the manufacturer's documents were not available.
- (b) Each person shall use the tools, equipment, and test apparatus necessary to assure completion of the work in accordance with accepted industry practices. If the manufacturer involved recommends special equipment or test apparatus, the person performing maintenance shall use that equipment or apparatus or its equivalent acceptable to the Authority.
- (c) Each person performing maintenance, preventive maintenance, rebuilding or modification on an aeronautical product shall do that work in such a manner, and use materials of such a quality, that the condition of the aeronautical product worked on will be at least equal to its original or properly modified condition with regard to aerodynamic function, structural strength, resistance to vibration and deterioration, and other qualities affecting airworthiness.
- (d) The methods, techniques, and practices contained in an AOC holder's maintenance control manual and continuous maintenance program, as approved by the Authority, will constitute an acceptable means of compliance with the requirements of this subsection.

5.7.3.2 Performance Rules: Inspections

- (a) **General.** Each person performing an inspection required by the Authority shall:
- (1) perform the inspection so as to determine whether the aircraft, or portion(s) thereof under inspection, meets all applicable airworthiness requirements; and
 - (2) If there is an inspection program required or accepted for the specific aircraft being inspected, perform the inspection in accordance with the instructions and procedures set forth in the inspection program
- (b) **Rotorcraft.** Each person performing an inspection required on a rotorcraft shall inspect the following systems in accordance with the maintenance manual or Instructions for Continued Airworthiness of the manufacturer concerned—
- (1) The drive shafts or similar systems,
 - (2) The main rotor transmission gear box for obvious defects,
 - (3) The main rotor and centre section (or the equivalent area), and
 - (4) The auxiliary rotor on helicopters
- (c) **Annual and 100-hour inspections**

- (1) Each person performing an annual or 100-hour inspection shall use a checklist while performing the inspection. The checklist may be of the person's own design, one provided by the manufacturer of the equipment being inspected, or one obtained from another source. This checklist shall include the scope and detail of the items prescribed by the Authority. See IS: 5.7.3.2 for components to be included in an annual or 100-hour inspection.
- (2) Each person approving a piston-engine aircraft for return to service after an annual or 100 hour inspection shall, before that approval, run the aircraft engine or engines to determine satisfactory performance in accordance with the current manufacturer's recommendations of—
 - (i) Power output (static and idle rpm);
 - (ii) Magnetos;
 - (iii) Fuel and oil pressure; and
 - (iv) Cylinder and oil temperature
- (3) Each person approving a turbine-engine aircraft for return to service after an annual or 100-hour inspection shall, before that approval, run the aircraft engine or engines to determine satisfactory performance in accordance with the current manufacturer's recommendations.

(d) Progressive inspections

- (1) Each person performing a progressive inspection shall, at the start of a progressive inspection shall, at the start of a progressive inspection system, inspect the aircraft completely. After this initial inspection, routine and detailed inspections must be conducted as prescribed in the progressive inspection schedule. Routine inspections consist of visual examination or check of the appliances the aircraft and its components and systems, insofar as practicable without disassembly. Detailed inspections consist of a thorough examination of the appliances, the aircraft, and its components and systems, with such disassembly as is necessary. For the purposes of this subparagraph, the overhaul of a component or system is considered to be a detailed inspection.
- (2) If the aircraft is away from the station where inspections are normally conducted, an appropriately rated AMT, an AMO or the manufacturer of the aircraft may perform inspections in accordance with the procedures and using the forms of the person who would otherwise perform the inspection.

(e) Continuous airworthiness maintenance program inspections

- (1) Each person performing the inspection program required for an AOC holder's aircraft or aircraft maintained under a continuous airworthiness maintenance program, shall perform the inspection in accordance with the instructions and procedures set forth in the inspection program.

5.7.3.3 Performance Rules: Airworthiness Limitations

- (a) Each person performing an inspection or other maintenance specified in an airworthiness limitations section of a current manufacturer's maintenance manual, or Instructions for Continued Airworthiness, shall perform the inspection or other maintenance in accordance with that section, or in accordance with specifications approved by the Authority.

5.7.4 DAMAGE TO AIRCRAFT

5.7.4.1 Applicability

- (a) This section describes the procedural requirements for resumption of flights after damage to aircraft.

5.7.4.2 General Requirements

- (a) When an aircraft has sustained damage, the Authority shall judge whether the damage is of a nature such that the aircraft is no longer airworthy as defined by the appropriate airworthiness requirements.
- (b) If the damage is sustained or ascertained when the aircraft is on the territory of another contracting state, the authorities of the other contracting state shall be entitled to prevent the aircraft from resuming its flight on the condition that they shall advise the Authority immediately, communicating to it all details necessary to formulate the judgment referred to in (a) of this subsection.
- (c) When the Authority considers that the damage sustained is of a nature such that the aircraft is no longer airworthy, it shall prohibit the aircraft from resuming flight until it is restored to an airworthy condition: The Authority may, however, in exceptional circumstances, prescribe particular limiting conditions to permit the aircraft to fly without fare-paying passengers to an aerodrome at which it can be restored to an airworthy condition, and the contracting state that has originally in accordance with (b) of this subsection prevented the aircraft from resuming flights shall permit such flight.
- (d) When the Authority considers that the damage sustained is of a nature such that the aircraft is still airworthy, the aircraft shall be allowed to resume its flight.

5.7.5 AIRCRAFT MASS AND BALANCE

5.7.5.1 General

- (a) An aircraft in respect of which a standard certificate of airworthiness is issued under these Regulations shall be weighed, and the position of the aircraft's centre of gravity determined, at such periodicity established in paragraph (b).
- (b) All Liberia registered aircraft shall be re-weighed at the following periods:
 - (1) When used for commercial or aerial work operations every three (3) years;
 - (2) When used for commercial operations and with approved weight control programme, at such periods as determined by the weight control program;
 - (3) When used in general aviation every five (5) years, or
 - (4) For any aircraft at such times as the Authority may direct.
 - (5) The weighing shall be accomplished by the manufacturer of the aircraft or by a maintenance organization approved in accordance with Part 6 or by an organization approved by the Authority for the purpose of aircraft weighing.

- (6) The Authority may approve an alternative weighing period for a particular type of aircraft or operation if requested.

5.7.5.2 **Mass and Balance Schedule**

- (a) Upon the aircraft being weighed, the owner or operator of the aircraft shall prepare a mass schedule showing-
 - (1) The basic mass of the aircraft, namely the mass of the empty aircraft together with the mass of unusable fuel and unusable oil in the aircraft and of such items of equipment as are indicated in the mass schedule, or such other mass as may be approved by the Authority in the case of that aircraft; and
 - (2) The position of the centre of gravity of the aircraft when the aircraft contains only the items included in the basic mass or such other position of the centre of gravity as may be approved by the Authority in the case of that aircraft.
- (b) The mass schedule shall be preserved by the operator of the aircraft until the expiration of a period of six months following the next occasion on which the aircraft is weighed for the purpose of this regulation.

5.7.5.3 **Accumulated Effects Of Modifications And Repairs On The Mass And Balance**

- (a) The accumulated effects of modifications and repairs on the mass and balance shall be accounted for and properly documented
- (b) The aircraft shall be reweighed whenever the effect of modifications on the mass and balance is not accurately known.
- (c) The mass and centre of gravity schedule (weight schedule) of an aircraft shall be revised whenever the cumulative changes to the dry operating mass exceed $\pm 0.5\%$ of the maximum landing mass or for aeroplanes the cumulative change in CG position exceeds 0.5% of the mean aerodynamic chord. This may be done by weighing the aircraft or by calculation.

5.8 **MAINTENANCE AND INSPECTION RECORDS AND ENTRIES**

5.8.1 **GENERAL REQUIREMENTS**

5.8.1.1 **Certificate Of Release To Service Records**

- (a) Pursuant to the terms and conditions set forth in Part 9, a certificate of release to service shall be maintained by an AOC holder in duplicate.
- (b) A certificate of release to service issued shall:
 - (1) Be effective from the date of issue;
 - (2) Cease to be effective upon expiration of the period in calendar days or flight time, whichever is earlier as specified in the maintenance schedule; and
 - (3) Be kept on board the aircraft and the original be kept by the operator elsewhere as approved by the Authority.

5.8.1.2 **Technical logbook**

- (a) A technical logbook shall be kept in respect of every aircraft registered in Liberia in respect of which a certificate in either commercial air transport or aerial work category is in force.
- (b) Technical logbook entries on defects which affect the airworthiness and safe operation of the aircraft shall be made as specified in Part 9.
- (c) Upon rectification of any defect which has been entered in the technical logbook in accordance with (b) above, a person issuing a certificate of release to service under Part 6 regulations in respect of that defect shall enter that certificate in the technical logbook.

5.8.1.3 **Aircraft Continuing Airworthiness Records System**

- (a) At the completion of any maintenance, the associated certificate of release to service shall be entered in the aircraft continuing airworthiness records. Each entry shall be made as soon as practicable but in no event more than 30 days after the day of the maintenance action.
- (b) The aircraft continuing airworthiness records shall consist of, as appropriate:
 - (1) an aircraft logbook;
 - (2) engine logbook(s) or engine module log cards;
 - (3) propeller logbook(s);
 - (4) log cards, for any service life limited component; and
 - (5) the operator's technical logbook.
- (c) The aircraft type and registration mark, the date, together with total flight time and/or flight cycles and/or landings, as appropriate, shall be entered in the aircraft logbooks.
- (d) The aircraft continuing airworthiness records shall contain the current:
 - (1) Status of airworthiness directives and measures mandated by the authority in immediate reaction to a safety problem;
 - (2) Status of modifications and repairs;
 - (3) Status of compliance with maintenance programme;
 - (4) Status of service life limited components;
 - (5) Mass and balance report;
 - (6) List of deferred maintenance.
- (e) In addition to the authorised release document, the following information relevant to any component installed shall be entered in the appropriate engine or propeller logbook, engine module or service life limited component log card:
 - (1) Identification of the component, and;

- (2) The type, serial number and registration of the aircraft to which the particular component has been fitted, along with the reference to the installation and removal of the component, and;
 - (3) The particular component accumulated total flight time and/or flight cycles and/or landings and/or calendar time, as appropriate, and;
 - (4) The current paragraph (b) information applicable to the component.
- (f)** All entries made in the aircraft continuing airworthiness records shall be clear and accurate. When it is necessary to correct an entry, the correction shall be made in a manner that clearly shows the original entry.
- (g)** An owner or operator shall ensure that a system has been established to keep the following records for the periods specified:
- (1) All detailed maintenance records in respect of the aircraft and any life-limited component fitted thereto, at least 24 months after the aircraft or component was permanently withdrawn from service, and;
 - (2) The total time and flight cycles as appropriate, of the aircraft and all life-limited components, at least 12 months after the aircraft or component has been permanently withdrawn from service, and;
 - (3) The time and flight cycles as appropriate, since last scheduled maintenance of the component subjected to a service life limit, at least until the component scheduled maintenance has been superseded by another scheduled maintenance of equivalent work scope and detail, and;
 - (4) The current status of compliance with maintenance programme such that compliance with the approved aircraft maintenance programme can be established, at least until the aircraft or component scheduled maintenance has been superseded by other scheduled maintenance of equivalent work scope and detail, and;
 - (5) The current status of airworthiness directives applicable to the aircraft and components, at least 12 months after the aircraft or component has been permanently withdrawn from service, and;
 - (6) Details of current modifications and repairs to the aircraft, engine(s), propeller(s) and any other component vital to flight safety, at least 12 months after they have been permanently withdrawn from service.
- (h)** The aircraft owner or operator shall control the records as detailed in this paragraph and present the records to the authority upon request.
- (i)** IS.: 5.8.1.3 details the particulars to be included in the aircraft, engine and propeller log books.

Note: For the purpose of this rule an aircraft engine shall also mean an Auxiliary Power Unit.

5.8.2 CONTENT, FORM, AND DISPOSITION OF RECORDS

5.8.2.1 Records For Maintenance, Preventive Maintenance, Rebuilding, and Modification of Aircraft and Life Limited Parts

- (a) Each person who maintains, performs preventive maintenance, rebuilds, or modify an aircraft or life limited parts shall, when the work is performed satisfactorily, make an entry in the maintenance record of that equipment as follows—
- (1) A description (or reference to data acceptable to the Authority) of work performed, including-
 - (i) The total time in services (hours, calendar time and cycles, as appropriate) of the aircraft and all life-limited components;
 - (ii) The current status of compliance with all mandatory continuing airworthiness information;
 - (iii) Appropriate details of modifications and repairs;
 - (iv) Time in service (hours, calendar time and cycles, as appropriate) since last overhaul of the aircraft or its components subject to a mandatory overhaul life;
 - (v) The current status of the aircraft's compliance with the maintenance program; and the detailed maintenance records to show that all requirements for signing of a maintenance release have been met.
 - (2) Completion date of the work performed;
 - (3) Name, signature, certificate number, and kind of license held by the person approving the work. The signature constitutes the approval for return to service only for the work performed.
- (b) The person performing the work shall enter records of major repairs and major modifications, and dispose of that form in the manner prescribed by the Authority.
- (c) A person working under supervision of an Aircraft Maintenance Engineer may not perform any inspection required in Part 8 or any inspection performed after a major repair or modification.

5.8.2.2 Additional Records For Major Repair Or Major Modification

- (a) In addition to the entry required by paragraph (a) of subsection 5.8.2.1, major repairs and modifications shall be entered on a form, and the form disposed of, in the manner prescribed in IS: 5.8.2.2 by the person performing the work.
- (b) Each person performing a major repair or major modification shall—
- (1) Execute the appropriate form prescribed by the Authority in IS 5.8.2.2 at least in duplicate;
 - (2) Give a signed copy of that form to the aircraft owner/operator; and
 - (3) Forward a copy of that form to the Authority, in accordance with Authority instructions, within 48 hours after the aeronautical product is approved for return to service.
- (c) In place of the requirements of paragraph (a), major repairs made in accordance with a manual or specifications acceptable to the Authority, an AMO may—

- (1) Use the customer's work order upon which the repair is recorded;
- (2) Give the aircraft owner a signed copy of the work order and retain a duplicate copy for at least one year from the date of approval for return to service of the aeronautical product;
- (3) Give the aircraft owner a maintenance release signed by an authorized representative of the AMO and incorporating the following information—
 - (i) Identity of the aeronautical product;
 - (ii) If an aircraft, the make, model, serial number, nationality and registration marks, and location of the repaired area;
 - (iii) If an aeronautical product, give the manufacturer's name, name of the part, model, and serial numbers (if any).

5.8.2.3 **Records For Maintenance, Preventive Maintenance, Overhaul, Modification and Rebuilding of a Product**

- (a) No person shall approve for return to service any aeronautical product that has undergone maintenance, preventive maintenance, overhaul modification or rebuilding of a product unless—
- (1) The appropriate maintenance record entry has been made;
 - (2) The repair or modification form authorized by or furnished by the Authority has been executed in a manner prescribed by the Authority;
 - (3) 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 are appropriately revised and set forth as prescribed.

5.8.2.4 **Additional Entries for Overhaul and Rebuilding**

- (a) No person shall describe in any required maintenance entry or form, an aeronautical product as being overhauled or rebuilt unless—
- (1) It has been disassembled, cleaned, inspected as permitted, repaired as necessary, and reassembled using methods, techniques, and practices acceptable to the Authority; 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 manufacturing approval.
- (b) No person shall describe in any required maintenance entry or form an aircraft or other aeronautical product as being rebuilt unless it has been disassembled, cleaned, inspected as permitted, repaired as necessary, reassembled, and tested to the same tolerances and limits as a new item, using either new parts or used parts that conform to new part tolerances and limits.
- (c) If the maintenance, preventive maintenance, overhaul, modification or rebuilding of a product is performed by an AMO, the AMO shall complete a certificate of release to service as prescribed in LCAR Part 6.

5.8.2.5 Records Of Inspections For Return To Service

- (a) **Inspection record entries.** The person approving or disapproving the return to service of an aeronautical product after any inspection performed in accordance with Part 8, shall make an entry in the maintenance record of that equipment containing the following information—
- (1) Type of inspection and a brief description of the extent of the inspection;
 - (2) Date of the inspection and aircraft or component total time in service;
 - (3) Signature, the license number, and kind of license held by the person approving or disapproving for return to service the aeronautical product;
 - (4) If the aircraft or component is found to be airworthy and approved for return to service, the following or a similarly worded statement— **“I certify that this aircraft/ component has been inspected in accordance with (insert type) inspection and was determined to be in airworthy condition”;**
 - (5) If the aircraft or component 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/component has been inspected in accordance with (insert type) inspection and a list of discrepancies and unairworthy items dated (date) has been provided for the aircraft owner or operator; and**
 - (6) If an inspection is conducted under an inspection program provided for in Part 8, the person performing the inspection shall make an entry identifying the inspection program accomplished, and containing a statement that the inspection was performed in accordance with the inspections and procedures for that particular program.
- (b) **Listing of discrepancies.** The person performing any inspection required in Part 9 who find 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, shall give the owner/operator a signed and dated list of those discrepancies.
- (c) The person performing the work shall enter records of major repairs and major modifications, and keep them for a period of ninety (90) days after the unit to which they refer has been permanently withdrawn from service and the records in 5.8.2.1 for a minimum period of one year after the signing of the maintenance release.
- (d) The lessee of a helicopter shall comply with the requirements of 5.8.2.1(a)(1) and (2) as applicable, while the helicopter is leased.

5.9 COMPONENTS

5.9.1 INSTALLATION

- (a) No component may be fitted unless it is in a satisfactory condition, has been appropriately released to service on a form specified in IS: 6.5.7 or equivalent and is adequately marked
- (b) Prior to installation of a component on an aircraft the person or approved maintenance organisation shall ensure that the particular component is eligible to be fitted when different modification and/or airworthiness directive configurations may be applicable.

- (c) Standard parts shall only be fitted to an aircraft or a component when the maintenance data specifies the particular standard part. Standard parts shall only be fitted when accompanied by evidence of conformity traceable to the applicable standard.
- (d) Material being either raw material or consumable material shall only be used on an aircraft or a component when the aircraft or component manufacturer states so in relevant maintenance data or as specified in Part 6. Such material shall only be used when the material meets the required specification and has appropriate traceability. All material must be accompanied by documentation clearly relating to the particular material and containing a conformity to specification statement plus both the manufacturing and supplier source.

5.9.2 COMPONENT MAINTENANCE

- (a) The maintenance of components shall be performed by maintenance organisations appropriately approved in accordance with Part 6, AOC holder with an equivalent system appropriately approved in accordance with Part 9 or any other equivalent organization recognized by the authority.
- (b) By derogation from paragraph (a), maintenance of a component in accordance with aircraft maintenance data or, if agreed by the authority, in accordance with component maintenance data, may be performed by an maintenance organisation approved in accordance with Part 6 to perform line maintenance as well as by certifying staff referred to in Part 9 only whilst such components are fitted to the aircraft. Nevertheless, such organisation or certifying staff may temporarily remove this component for maintenance, in order to improve access to the component, except when such removal generates the need for additional maintenance not eligible for the provisions of this paragraph. Component maintenance performed in accordance with this paragraph is not eligible for the issuance of an LCAA form specified in IS 6.5.7 and shall be subject to the aircraft release requirements provided for in LCAR Part 9.
- (c) By derogation from paragraph (a), maintenance of an engine/Auxiliary Power Unit (APU) component in accordance with engine/APU maintenance data or, if agreed by the authority, in accordance with component maintenance data, may be performed by a maintenance organisation with limited class 2 rating approved in accordance with Part 6 only whilst such components are fitted to the engine/APU. Nevertheless, such organisation may temporarily remove this component for maintenance, in order to improve access to the component, except when such removal generates the need for additional maintenance not eligible for the provisions of this paragraph.
- (d) By derogation from paragraph (a) and subsection 6.5.7 of Part 6, maintenance of a component while installed or temporarily removed from an ELA1 aircraft used by other than licensed air carriers in accordance with Part 9, and performed in accordance with component maintenance data, may be performed by certifying staff referred to in Part 6, except for:
 - (1) overhaul of components other than engines and propellers, and;
 - (2) overhaul of engines and propellers for aircraft other than CS- VLA, CS-22 and LSA.
- (e) Component maintenance performed in accordance with paragraph (d) is not eligible for the issuance of an LCAA Form described in IS 6.5.7 and shall be subject to the aircraft release requirements provided for in Part 6.

5.9.3 SERVICE LIFE LIMITED COMPONENTS

- (a) Installed service life limited components shall not exceed the approved service life limit as specified in the approved maintenance programme and airworthiness directives, except as provided for in paragraph 5.9.4(c).
- (b) The approved service life is expressed in calendar time, flight hours, landings or cycles, as appropriate.
- (c) At the end the approved service life, the component must be removed from the aircraft for maintenance, or for disposal in the case of components with a certified life limit.

5.9.4 CONTROL OF UNSERVICEABLE COMPONENTS

- (a) A component shall be considered unserviceable in any one of the following circumstances:
 - (1) expiry of the service life limit as defined in the maintenance program;
 - (2) non-compliance with the applicable airworthiness directives and other continued airworthiness requirement mandated by the Authority;
 - (3) absence of the necessary information to determine the airworthiness status or eligibility for installation;
 - (4) evidence of defects or malfunctions;
 - (5) involvement in an incident or accident likely to affect its serviceability.
- (b) Unserviceable components shall be identified and stored in a secure location under the control of an approved maintenance organisation until a decision is made on the future status of such component. Nevertheless, for aircraft not used by licensed air carriers in accordance with Part 9 and other than complex motor-powered aircraft, the person or organisation that declared the component unserviceable may transfer its custody, after identifying it as unserviceable, to the aircraft owner provided that such transfer is reflected in the aircraft logbook or engine logbook or component logbook.
- (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 according to requirements for modifications and repairs.
- (d) Any person or organisation accountable under this regulation shall, in the case of a paragraph (c) unsalvageable components:
 - (1) retain such component in the paragraph (b) location, or;
 - (2) arrange for the component to be mutilated in a manner that ensures that it is beyond economic salvage or repair before relinquishing responsibility for such component.
- (e) Notwithstanding paragraph (d) a person or organisation accountable under this regulation may transfer responsibility of components classified as unsalvageable to an organisation for training or research without mutilation.

LIBERIA CIVIL AVIATION REGULATIONS

Part 5 — IMPLEMENTING STANDARDS

For ease of reference the number assigned to each implementing standard corresponds to its associated regulation. For example IS: 5.1.2 would reflect a standard required in subsection 5.1.2.

IS 5.1.2: DEFINITION

IS 5.1.2(a)(33): MAJOR MODIFICATIONS

- (a) **Airframe Major Modifications.** Major modifications include modifications to the listed aircraft parts, or the listed types of modifications (when not included in the applicable manufacturer specifications or type certificate data sheet (TCDS)—
- (1) Wings.
 - (2) Tail surfaces.
 - (3) Fuselage.
 - (4) Engine mounts.
 - (5) Control system.
 - (6) Landing gear.
 - (7) Hull or floats
 - (8) Elements of an airframe including spars, ribs, fittings, shock absorbers, bracing, cowlings, fairings, and balance weights.
 - (9) Hydraulic and electrical actuating system of components.
 - (10) Rotor blades.
 - (11) Changes to the empty weight or empty balance which result in an increase in the maximum Certified weight or centre of gravity limits of the aircraft.
 - (12) Changes to the basic design of the fuel, oil, cooling, heating, cabin pressurization, electrical, hydraulic, de-icing, or exhaust systems.
 - (13) Changes to the wing or to fixed or movable control surfaces which affect flutter and vibration characteristics.
- (b) **Powerplant Major Modifications.** Major powerplant modifications, even when not listed in the applicable engine specifications, include—
- (1) Conversion of an aircraft engine from one approved model to another, involving any changes in compression ratio, propeller reduction gear, impeller gear ratios or the substitution of major engine parts which requires extensive rework and testing of the engine.
 - (2) Changes to the engine by replacing aircraft engine structural parts with parts not supplied by the original manufacturer or parts not specifically approved by the Authority.
 - (3) Installation of an accessory which is not approved for the engine.
 - (4) Removal of accessories that are listed as required equipment on the aircraft or engine specification.
 - (5) Installation of structural parts other than the type of parts approved for the installation.
 - (6) Conversions of any sort for the purpose of using fuel of a rating or grade other than that listed in the engine specifications.

- (c) **Propeller Major Modifications.** Major propeller modifications, when not authorized in the applicable propeller specifications, include—
- (1) Changes in blade design.
 - (2) Changes in hub design.
 - (3) Changes in the governor or control design.
 - (4) Installation of a propeller governor or feathering system.
 - (5) Installation of propeller de-icing system.
 - (6) Installation of parts not approved for the propeller.
- (d) **Appliance Major Modifications.** Modifications of the basic design not made in accordance with recommendations of the appliance manufacturer or in accordance with applicable Airworthiness Directives are appliance major modifications. In addition, changes in the basic design of radio communication and navigation equipment approved under type certification or other authorization that have an effect on frequency stability, noise level, sensitivity, selectivity, distortion, spurious radiation, automatic volume control (AVC) characteristics, or ability to meet environmental test conditions and other changes that have an effect on the performance of the equipment are also major modifications.

IS 5.1.2 (a)(34): MAJOR REPAIRS

- (a) **Airframe Major Repairs.** Repairs to the following parts of an airframe and repairs of the following types, involving the strengthening, reinforcing, splicing, and manufacturing of primary structural members or their replacement, when replacement is by fabrication such as riveting or welding, are airframe major repairs.
- (1) Box beams.
 - (2) Monocoque or semimonocoque wings or control surfaces
 - (3) Wing stringers or chord members
 - (4) Spars.
 - (5) Spar flanges.
 - (6) Members of truss-type beams.
 - (7) Thin sheet webs of beams.
 - (8) Keel and chine members of boat hulls or floats.
 - (9) Corrugated sheet compression members which act as flange material of wings or tail surfaces.
 - (10) Wing main ribs and compression members.
 - (11) Wing or tail surface brace struts.
 - (12) Engine mounts.
 - (13) Fuselage longerons.
 - (14) Members of the side truss, horizontal truss, or bulkheads.
 - (15) Main seat support braces and brackets.
 - (16) Landing gear brace struts.

- (17) Axles.
 - (18) Wheels.
 - (19) Parts of the control system such as control columns, pedals, shafts, brackets, or horns.
 - (20) Repairs involving the substitution of material.
 - (21) The repair of damaged areas in metal or plywood stressed covering exceeding six inches in any direction.
 - (22) The repair of portions of skin sheets by making additional seams.
 - (23) The splicing of skin sheets
 - (24) The repair of three or more adjacent wing or control surface ribs or the leading edge of wings and control surfaces, between such adjacent ribs.
 - (25) Repair of fabric covering involving an area greater than that required to repair two adjacent ribs.
 - (26) Replacement of fabric on fabric covered parts such as wings, fuselages, stabilizers, and control surfaces.
 - (27) Repairing, including rebotting, of removable or integral fuel tanks and oil tanks.
- (b) Powerplant Major Repairs.** Repairs of the following parts of an engine and repairs of the following types, are powerplant major repairs—
- (1) Separation or disassembly of a crankcase or crankshaft of a piston engine equipped with an integral supercharger.
 - (2) Separation or disassembly of a crankcase or crankshaft of a piston engine equipped with other than spur-type propeller reduction gearing.
 - (3) Special repairs to structural engine parts by welding, plating, metalising, or other methods.
 - (4) Propeller Major Repairs. Repairs of the following types to a propeller are propeller major repairs—
 - (5) Any repairs to or straightening of steel blades.
 - (6) Repairing or machining of steel hubs.
 - (7) Shortening of blades.
 - (8) Retipping of wood propellers.
 - (9) Replacement of outer laminations on fixed pitch wood propellers.
 - (10) Repairing elongated bolt holes in the hub of fixed pitch wood propellers.
 - (11) Inlay work on wood blades.
 - (12) Repairs to composition blades.
 - (13) Replacement of tip fabric.
 - (14) Replacement of plastic covering.
 - (15) Repair of propeller governors.
 - (16) Overhaul of controllable pitch propellers.

- (17) Repairs to deep dents, cuts, scars, nicks, etc., and straightening of aluminum blades.
- (18) The repair or replacement of internal elements of blades.
- (c) **Appliance Major Repairs.** Repairs of the following types to appliances are appliance major repairs—
 - (1) Calibration and repair of instruments.
 - (2) Calibration of avionics or computer equipment.
 - (3) Rewinding the field coil of an electrical accessory.
 - (4) Complete disassembly of complex hydraulic power valves.
 - (5) Overhaul of pressure type carburetors, and pressure type fuel, oil, and hydraulic pumps.

IS 5.1.2(a)(44): PREVENTIVE MAINTENANCE

- (a) **Preventive Maintenance.** Preventive maintenance is limited to the following work, provided it does not involve complex assembly operations.
 - (1) Removal, installation and repair of landing gear tires.
 - (2) Replacing elastic shock absorber cords on landing gear.
 - (3) Servicing landing gear shock struts by adding oil, air, or both.
 - (4) Servicing landing gear wheel bearings, such as cleaning and greasing.
 - (5) Replacing defective safety wiring or cotter keys.
 - (6) Lubrication not requiring disassembly other than removal of non-structural items such as cover plates, cowlings, and fairings.
 - (7) Making simple fabric patches not requiring rib stitching or the removal of structural parts or control surfaces.
 - (8) Replenishing hydraulic fluid in the hydraulic reservoir.
 - (9) Refinishing decorative coating of fuselage, wings, tail group surfaces (excluding balanced control surfaces), fairings, cowling, landing gear, cabin, or cockpit interior when removal or disassembly of any primary structure or operating system is not required.
 - (10) Applying preservative or protective material to components where no disassembly of any primary structure or operating system is involved and where such coating is not prohibited or is not contrary to good practices.
 - (11) Repairing upholstery and decorative furnishings of the cabin or cockpit when the repairing does not require disassembly of any primary structure or operating system or interfere with an operating system or affect primary structure of the aircraft.
 - (12) Making small simple repairs to fairings, non-structural cover plates, cowlings, and small patches and reinforcements not changing the contour so as to interfere with proper airflow.
 - (13) Replacing side windows where that work does not interfere with the structure of any operating system such as controls, electrical equipment, etc.
 - (14) Replacing safety belts.

- (15) Replacing seats or seat parts with replacement parts approved for the aircraft, not involving disassembly of any primary structure or operating system.
- (16) Troubleshooting and repairing broken circuits in landing light wiring circuits.
- (17) Replacing bulbs, reflectors, and lenses of position and landing lights.
- (18) Replacing wheels and skis where no weight and balance computation is involved.
- (19) Replacing any cowling not requiring removal of the propeller or disconnection of flight controls.
- (20) Replacing or cleaning spark plugs and setting of spark plug gap clearance.
- (21) Replacing any hose connection except hydraulic connections.
- (22) Replacing prefabricated fuel lines.
- (23) Cleaning fuel and oil strainers.
- (24) Replacing and servicing batteries.
- (25) Replacement or adjustment of non-structural fasteners incidental to operations.
- (26) The installation of anti-misfueling devices to reduce the diameter of fuel tank filler openings provided the specific device has been made a part of the aircraft type certificate data by the aircraft manufacturer, the manufacturer has provided appropriately approved instructions acceptable to the Authority for the installation of the specific device, and installation does not involve the disassembly of the existing filler opening.

IS 5.3.6: ISSUANCE OR VALIDATION OF A STANDARD CERTIFICATE OF AIRWORTHINESS

- (a) The standard Certificate of Airworthiness issued by the Liberia Civil Aviation Authority shall be as follows.

*	 <p>CERTIFICATE OF AIRWORTHINESS</p>		CERTIFICATE NUMBER:
1. Nationality and registration mark _____ _____	2. Manufacturer and Manufacturer's Designation Of Aircraft _____ _____	3. Aircraft serial number: _____ _____	
4. Categories and/or operation***:			
5. This certificate of airworthiness is issued pursuant to the convention on international civil aviation dated 7 December 1944 and the Liberia civil aviation act of 2005 in respect of the above-mentioned aircraft which is considered to be airworthy when maintained and operated in accordance with the foregoing and the pertinent operating limitations.			
Date of issue _____ Signature : _____ By Liberia Civil Aviation Authority			
Note: (1) no entries or endorsements may be made in the foregoing certificate except in the manner and by the person authorized for that purpose. (2) this certificate must be carried aboard the aircraft. (3) this certificate is not transferable			
6. ***			

* For use of the State of Registry.

** Manufacturer's designation of aircraft shall contain the aircraft type and model.

*** This space is normally used to indicate the certification basis, i.e., certification code, with which the particular aircraft complies and/or its permitted operational category, e.g., commercial air transportation, aerial work, or private.

**** This space shall be used either for periodic endorsement (giving date of expiry) or for a statement that the aircraft is being maintained under a system of continuous inspection

IS 5.3.6: ISSUANCE OF A SPECIAL CERTIFICATE OF AIRWORTHINESS

- (b) The Special Certificate of Airworthiness issued by the Liberia Civil Aviation Authority shall be as follows:

*	<i>Republic of Liberia</i>		*
 SPECIAL CERTIFICATE OF AIRWORTHINESS			
1. Nationality and registration mark	2. Manufacturer and manufacturer's designation of aircraft	3. Aircraft serial number:	
-			
4. Categories and/or operation***			
<p>5. This Certificate of Airworthiness is issued pursuant to the Convention on International Civil Aviation dated 7 December 1944 and † _____ in respect of the above-mentioned aircraft which is considered to be airworthy when maintained and operated in accordance with the foregoing and the pertinent operating limitations.</p> <p>In addition to the above the following restrictions apply:</p> <p>...</p> <p>[The aircraft may be used in the international navigation notwithstanding above restrictions].</p> <p><i>Limitations</i></p>			
Date of issue: _____ [Signature] _____			
6. ***			

* For use of the State of Registry.

** Manufacturer's designation of aircraft shall contain the aircraft type and model.

*** This space is normally used to indicate the certification basis, i.e., certification code, with which the particular aircraft complies and/or its permitted operational category, e.g., commercial air transportation, aerial work, or private.

**** This space shall be used either for periodic endorsement (giving date of expiry) or for a statement that the aircraft is being maintained under a system of continuous inspection.

IS 5.3.8: ISSUANCE OF A SPECIAL FLIGHT PERMIT

(a) The Special Certificate of Airworthiness issued by the LCAA shall be as follows.

 <p>SPECIAL AIRWORTHINESS CERTIFICATE</p>		
A	Category/Designation	
	Purpose	
B	Manufacturer	Name
		Address
C	Flight	From
		To
D	Registration No.	Serial No.
	Builder	Model
E	Date of Issuance	Expiry
	Operating limitations date [dd/mm/yyyy] are part of this certificate	
	Signature of CAA Representative	Designation or office number
Any modification, reproduction, or misuse of this certificate may be punishable as specified in LCAR Part 1. This certificate must be displayed in the aircraft in accordance with LCAR 8		
CAA Form No. []		<i>See Reverse Side</i>

Front of form

A	This special airworthiness certificate is issued under the authority of LCAR Part 5.
B	This special airworthiness certificate authorized the manufacturer named on the reverse side to conduct production flight tests, and only production flight tests, of aircraft registered in his name. No person may conduct production flight tests (1) carrying persons or property for remuneration or hire and/or (2) carrying persons not essential for the purpose of the flight.
C	This special airworthiness certificate authorized the flight specified for the flight listed on the reverse side for the sole purpose shown in Block A.
D	This special airworthiness certifies that, as of the date of issuance, the aircraft to which issued has been inspected and found to meet the requirements of the applicable LCAR. The aircraft does not meet the requirements of the applicable and comprehensive detailed airworthiness code as provided by Annex 8 of the Convention on International Civil Aviation. No person may operate the aircraft described on the reverse side (1) except in accordance with the applicable LCAR and in accordance with conditions and limitations which may be prescribed by the Authority as part of this certificate, or (2) over any foreign country without the permission of that country
E	Unless sooner surrendered, suspended or revoked, this special airworthiness certificate is effective for the duration and under the conditions prescribed in the LCARs.

Back of form

IS 5.5.5: CONTENTS OF EXPORT CERTIFICATE OF AIRWORTHINESS

(a) The contents of the export certificate of airworthiness shall include such information as follows:

- (1) Issuing Authority
- (2) Certificate Number
- (3) Class of Product
- (4) Statement of Certification “This certifies that the product identified below and more particularly described in Specification(s), has been examined and as of the date of this certificate, is considered airworthy in accordance with the provisions of Part 5 of Liberia Civil Aviation Regulation, and is in compliance with those special requirements of the importing State, except as stated below.

Note: This certificate in no way attests to compliance with any agreements or contracts between the vendor and purchaser, nor does it constitute authority to operate an aircraft.

- (5) Product Type
- (6) Manufacturer
- (7) Model
- (8) Serial Number
- (9) Aircraft Status:
 - (i) New
 - (ii) Newly Over hauled
 - (iii) Used Aircraft
- (10) State to which exported
- (11) Exceptions
- (12) Signature of Authority
- (13) Date
- (14) For complete aircraft, list applicable specification or Type Certificate Data Sheet numbers for the aircraft, engine and propeller. Applicable specifications or Type Certificate data sheet, if not attached to this Export Certificate, will have been forwarded to the appropriate governmental office of the importing country.

(b) The export certificate of airworthiness issued by the Authority shall be as follows:

*	Republic of Liberia	*
 EXPORT CERTIFICATE OF AIRWORTHINESS		
<p>1. This Certifies that the product identified below and more particularly described in Specification(s), has been examined and as of the date of this Certificate, is considered airworthy in accordance with the provisions of [Part 5 of Civil Aviation Regulation] and is in compliance with those special requirements of the importing State, except as noted below.</p> <p><i>Note: This certificate in no way attests to compliance with any agreements or contracts between the vendor and purchaser, nor does it constitute authority to operate an aircraft.</i></p>		
2. Product:		3. Engines (<i>Manufacturer, Model</i>):
4. Manufacturer:		5. Propellers (<i>Manufacturer, Model</i>):
6. Serial No.:		
7. <input type="checkbox"/> New <input type="checkbox"/> Newly Overhauled <input type="checkbox"/> Used Aircraft		
8. Specification (<i>Type Certificate, Type Acceptance Certificate, Certificate of Type Approval or other document</i>)		
<p>¹ For complete aircraft, list applicable specification or Type Certificate Data Sheet numbers for the aircraft, engine, and propeller. Applicable specifications or Type Certificate Data Sheet, if not attached to this Export Certificate, will have been forwarded to the appropriate governmental office of the importing country.</p>		
9. State to which exported:		
10. Remarks/ Exceptions:		
Date of issue: _____		[Signature] _____
11. **		

* For use of the State of Registry.

** Additional information

IS: 5.7.3.2: PERFORMANCE RULES: INSPECTIONS

- (a) Each person performing an annual or 100-hour inspection shall, before that inspection, thoroughly clean the aircraft and aircraft engine and remove or open all necessary inspection plates, access doors, fairings, and cowlings.
- (b) Each person performing an annual or 100-hour inspection shall inspect, where applicable, the following components—
 - (1) Fuselage and hull group—
 - (i) Fabric and skin - for deterioration, distortion, other evidence of failure, and defective or insecure attachment of fittings.
 - (ii) Systems and components - for improper installation, apparent defects, and unsatisfactory operation.
 - (iii) The cabin and cockpit group.
 - (iv) Generally - for uncleanness and loose equipment that might foul the controls.
 - (v) Seats and safety belts - for poor condition and apparent defects.
 - (vi) Windows and windshields - for deterioration and breakage.
 - (vii) Instruments - for poor condition, mounting, marking, and (where practicable) for improper operation.
 - (viii) Flight and engine controls - for improper installation and improper operation.
 - (ix) Batteries - for improper installation and improper charge.
 - (x) All systems - for improper installation, poor general condition, apparent and obvious defects, and insecurity of attachment.
 - (2) Engine and nacelle group—
 - (i) Engine section - for visual evidence of excessive oil, fuel, or hydraulic leaks, and sources of such leaks.
 - (ii) Studs and nuts - for improper torquing and obvious defects.
 - (iii) Internal engine - for cylinder compression and for metal particles or foreign matter on screens and sump drain plugs. If there is weak cylinder compression, for improper internal condition and improper internal tolerances.
 - (iv) Engine mount - for cracks, looseness of mounting, and looseness of engine to mount.
 - (v) Flexible vibration dampeners - for poor condition and deterioration.
 - (vi) Engine controls - for defects, improper travel, and improper safetying.
 - (vii) Lines, hoses, and clamps - for leaks, improper condition, and looseness.
 - (viii) Exhaust stacks - for cracks, defects, and improper attachment.
 - (ix) Accessories - for apparent defects in security of mounting.

- (x) All systems - for improper installation, poor general condition, defects, and insecure attachment.
- (xi) Cowling - for cracks and defects.
- (3) Landing gear group—
 - (i) All units - for poor condition and insecurity of attachment.
 - (ii) Shock absorbing devices - for improper oleo fluid level.
 - (iii) Linkage, trusses, and members - for undue or excessive wear, fatigue, and distortion.
 - (iv) Retracting and locking mechanism - for improper operation.
 - (v) Hydraulic lines - for leakage.
 - (vi) Electrical system - for chafing and improper operation of switches.
 - (vii) Wheels - for cracks, defects, and condition of bearings.
 - (viii) Tires - for wear and cuts.
 - (ix) Brakes - for improper adjustment.
 - (x) Floats and skis - for insecure attachment and obvious or apparent defects.
- (4) Wing and centre section assembly for—
 - (i) Poor general condition,
 - (ii) Fabric or skin deterioration,
 - (iii) Distortion,
 - (iv) Evidence of failure, and
 - (v) Insecurity of attachment.
- (5) Complete empennage assembly for—
 - (i) Poor general condition,
 - (ii) Fabric or skin deterioration,
 - (iii) Distortion,
 - (iv) Evidence of failure,
 - (v) Insecure attachment,
 - (vi) Improper component installation, and
 - (vii) Improper component operation.
- (6) Propeller group—
 - (i) Propeller assembly - for cracks, nicks, binds, and oil leakage,
 - (ii) Bolts - for improper torquing and lack of safety,
 - (iii) Anti-icing devices - for improper operations and obvious defects, and
 - (iv) Control mechanisms - for improper operation, insecure mounting, and restricted travel.

- (7) Avionics/instrument group—
 - (i) Avionics/instruments equipment - for improper installation and insecure mounting.
 - (ii) Wiring and conduits - for improper routing, insecure mounting, and obvious defects.
 - (iii) Bonding and shielding - for improper installation and poor condition.
 - (iv) Antenna including trailing antenna - for poor condition, insecure mounting, and improper operation.
- (8) Electronic/electrical group—
 - (i) Wiring and conduits - for improper routing, insecure mounting, and obvious defects.
 - (ii) Bonding and shielding - for improper installation and poor condition.
 - (iii) Each installed miscellaneous item that is not otherwise covered by this listing and/or has instructions for continued airworthiness - for improper installation and improper operation.

IS 5.8.1.3: AIRCRAFT CONTINUING AIRWORTHINESS RECORDS SYSTEM

- (a) **Aircraft log book.** The following entries shall be included in the aircraft log book:
 - (1) The name of the constructor, the type of the aircraft, the number assigned to it by the constructor and the date of construction of the aircraft;
 - (2) The nationality and registration marks of the aircraft;
 - (3) The date, together with total flight time and/or flight cycles and/or landings, as appropriate;
 - (4) Particulars of all maintenance work carried out on the aircraft or its equipment;
 - (5) Particulars of any overhauls, repairs, replacements and modifications relating to the aircraft or any such equipment as aforesaid provided that entries shall not be required to be made under subparagraphs 4) and 5) in respect of any engine or variable pitch propeller.
- (b) **Engine log book.** The following entries shall be included in the engine log book:
 - (6) The name of the constructor, type of engine, the number assigned to it by the constructor and the date of the construction of the engine;
 - (7) The nationality and registration marks of each aircraft in which the engine is fitted;
 - (8) The date, together with total flight time and/or flight cycles and/or landings, as appropriate;

- (9) Particulars of all maintenance work done on the engine;
- (10) Particulars of all overhauls, repairs, replacement and modifications relating to the engine or any of its accessories.

(c) Propeller log book. The following entries shall be included in the engine log book:

- (11) The name of the constructor of the propeller, the number assigned to it by the constructor and the date of the construction of the propeller;
- (12) The nationality and registration marks of each aircraft, and the type and number of each engine, to which the propeller is fitted;
- (13) The date, together with total flight time and/or flight cycles and/or landings, as appropriate;
- (14) Particulars of all maintenance work done on the propeller;
- (15) Particulars of any overhauls, repairs, replacements and modifications relating to the propeller.

IS 5.8.2.2: CONTENT, FORM AND DISPOSITION OF RECORDS FOR MAINTENANCE, PREVENTIVE MAINTENANCE, REBUILDING AND MODIFICATION OF AIRCRAFT AND LIFE LIMITED PARTS

IS 5.8.2.2(b): RECORDING OF MAJOR REPAIRS AND MODIFICATIONS

- (a)** Each person performing a major repair or major modification shall—
- (1) Execute the appropriate form prescribed by the Authority at least in duplicate;
 - (2) Give a signed copy of that form to the aircraft owner/operator; and
 - (3) Forward a copy of that form to the Authority, in accordance with Authority instructions, within 48 hours after the aeronautical product is approved for return to service.

Note: Some CAA's have an electronic system for recording major repairs and modifications. This IS is written presuming Liberia will use a hard copy form in duplicate. If an electronic system is used, the items here are recommended for inclusion in the system.

- (b)** In place of the requirements of paragraph (a), major repairs made in accordance with a manual or specifications acceptable to the Authority, an AMO may—
- (1) Use the customer's work order upon which the repair is recorded;
 - (2) Give the aircraft owner a signed copy of the work order and retain a duplicate copy for at least one year from the date of approval for return to service of the aeronautical product;
 - (3) Give the aircraft owner a maintenance release signed by an authorized representative of the AMO and incorporating the following information—
 - (i) Identity of the aeronautical product;
 - (ii) If an aircraft, the make, model, serial number, nationality and registration marks, and location of the repaired area;

(iii) If an aeronautical product, give the manufacturer's name, name of the part, model, and serial numbers (if any); and

(4) Include the following or a similarly worded statement—

<p>The aeronautical product identified above was repaired, overhauled and inspected in accordance with currently effective, applicable instructions of the State of Design and regulatory requirements of the Authority, and is approved for return to service. Pertinent details of the repair are on file at this maintenance organization.</p>	
Order No. _____	Date _____
<p>Signed _____ <i>(Signature of authorized representative)</i></p>	
_____	_____
<i>(Facility Name)</i>	<i>(AMO Certificate Number)</i>

<i>(Address)</i>	

(c) The following sample form may be used to record major modification and repairs.

MAJOR REPAIR AND MODIFICATION (Airframe, Powerplant, Propeller, or Appliance)				Liberia	
				For CAA Use Only	
				Office Identification	
INSTRUCTIONS: Print or type all entries. See LCAA Regulation Part 5, 5.8.2.2(b) and IS: 5.8.2.2 for instructions and disposition of this form.					
1. Aircraft	Make		Model		
	Serial Number		Nationality and Registration Mark		
2. Owner	Name (As shown on certificate of registration)		Address (As shown on registration certificate)		
3. For Liberia Civil Aviation Authority Use Only					
4. Unit Identification				5. Type	
Unit	Make	Model	Serial Number	Repair	Modification
Airframe	(As described in item 1 above)				
Powerplant					
Propeller					
Appliance	Type				
	Manufacture				
6. Conformity Statement					
A. Organization Name and Address		B. Kind of License/Organization		C. Certificate/License Number	
		<input type="checkbox"/> Licensed (AMT) <input type="checkbox"/> A <input type="checkbox"/> P or <input type="checkbox"/> A/P		(For an AMO include the appropriate	

<input type="checkbox"/> Approved Maintenance Organization		ratings issued for the major repair or modification)	
<input type="checkbox"/> Manufacturer AMO			
D. I certify that the repair and/or modification made to the unit(s) identified in item 4 above and described on the reverse or attachments hereto have been made in accordance with the requirements of Part 5 of LCAR Regulations and that the information furnished herein is true and correct to the best of my knowledge.			
Date		Signature of Authorized Individual	
7. Approval for Return To Service			
Pursuant to the authority given persons specified below, the unit(s) identified in item 4 was inspected in the manner prescribed by the Director of the Liberia Civil Aviation Authority and is <input type="checkbox"/> APPROVED <input type="checkbox"/> REJECTED			
BY	<input type="checkbox"/> CAA Inspector	<input type="checkbox"/> Inspection Authorization	Other (Specify)
	<input type="checkbox"/> Maintenance Organization	<input type="checkbox"/> Other	
Date of Approval or Rejection		Certificate or Designation Number	Signature or Authorized Individual

NOTICE

Weight and balance or operating limitation changes shall be entered in the appropriate aircraft record. A Modification must be compatible with all previous modifications to assure continued conformity with the applicable airworthiness requirements.

8. Description of Work Accomplished

(If more space is required, attach additional sheets. Identify each page with aircraft nationality and registration mark and date work completed.)

Instructions For Completion Of Major Repair And Modification Form

Item 1 – Aircraft. Information to complete the “make,” “model,” and “serial number” blocks will be found on the aircraft manufacturer’s identification plate. The “Nationality and Registration Mark” is the same as shown on Certificate of Aircraft Registration.

Item 2 – Owner. Enter the aircraft owner’s complete name and address as shown on the Certificate of Aircraft Registration.

Note: When a major repair or modification is made to a spare part or appliance, items 1 and 2 will be left blank, and the original and duplicate copy of the form will remain with the part until such time as it is installed on an aircraft. The person installing the part will then enter the required information in blocks 1 and 2, give the original of the form to the aircraft owner/operator, and forward the duplicate copy to the Authority within 48 hours after the work is inspected.

Item 3 – For Authority Use Only. Approval may be indicated in Item 3 when the Authority determines that data to be used in performing a major modification or a major repair complies

with accepted industry practices and all applicable Liberia regulations. Approval is indicated in one of the following methods:

1. Approval by examination of data only – one aircraft only: “The data identified herein complies with the applicable airworthiness requirements and is approved for the above described aircraft, subject to conformity inspection by a person authorized in § 5.6.4.
2. Approval by physical inspection, demonstration, testing, etc. of the data and aircraft – one aircraft only” “The modification or repair identified herein complies with the applicable airworthiness requirements and is approved for the above described aircraft, subject to conformity inspections by a person in § 5.6.4.”
3. Approval by examination of data only – duplication on identical aircraft. “The modification identified herein complies with the applicable airworthiness requirements and is approved for duplication on identical aircraft make, model, and modified configuration by the original modifier.”
4. A signature in item 3, “For Authority Use Only,” indicates approval of the data described in that section for use in accomplishing the work described under item 8, “Description of the Work Accomplished.” This signature does not indicate CAA approval of the work described under item 8 for return to service.

Item 4 – Unit Identification. The information blocks under item 4 are used to identify the airframe, powerplant, propeller, or appliance repaired or modified. It is only necessary to complete the blocks for the unit repaired or modified.

Item 5 – Type. Enter a checkmark in the appropriate column to indicate if the unit was repaired or modified.

Item 6 – Conformity Statement

- “A” – Agency’s Name and Address. Enter name of the AMT, AMO or manufacturer accomplishing the repair or modification. AMTs should enter their name and permanent mailing address. Manufacturers and AMOs should enter the name and address under which they do business.
- “B” – Kind of License/Organization. Check the appropriate box to indicate the type of person or organization who performed the work.
- “C” – Certificate/License Number. AMT’s should enter their AMT license number in this block. AMO’s should enter their AMO certificate number and the rating or ratings under which the work was performed. Manufacturers should enter their type production or Supplemental Type Certificate (STC) number. Manufacturers of Technical Standard Orders (TSO) appliances modifying these appliances should enter the TSO number of the appliance modified.
- “D” – Compliance Statement. This space is used to certify that the repair or modification was made in accordance with Part 5 of these regulations. When work was performed or supervised by licensed AMT’s not employed by a manufacturer or AMO, they should enter the date the repair or alteration was completed and sign their full name. AMO’s are permitted to authorize persons in their employ to date and sign this conformity statement.

A signature in item 6, “Conformity Statement,” is a certification by the person performing the work that it was accomplished in accordance with applicable CAA and CAA-approved data. The certification is only applicable to that work described under item 8, “Description of Work Accomplished.” This signature does not indicate CAA approval of the work described under item 8 for return to service.

Item 7 – Approval for Return to Service. LCAR Part 5 establishes the conditions under which major repairs and modifications to airframes, powerplants, propellers, and/or appliances may be approved for return to service. This portion of the form is used to indicate approval or rejection of the repair or modification of the unit involved and to identify the person or agency making the airworthiness inspection. Check the “approved” or “rejected” box to indicate the finding. Additionally, check the appropriate box to indicate who made the finding. Use the box

labeled “other” to indicate a finding by a person other than those listed. Enter the date the finding was made. The authorized person who made the finding should sign the form and enter the appropriate certificate or designation number.

1. Previously Approved Data. The forms will be completed as instructed ensuring that Item 7 is completed as noted above.
2. Non-previously Approved Data. The form will be completed as instructed, leaving item 7, “Approval for Return to Service” blank and both copies of the form will be sent to the Authority with supporting data. When the CAA determines that the major repair or modification data complies with the applicable regulations and is in conformity with accepted industry practices, data approval will be recorded by entering an appropriate statement in item 3, “for CAA use only.” Both forms and supporting data will be returned to the applicant who will complete item 7 “Approval for Return to Service.” The applicant will give the original of the form, with its supporting data to the aircraft owner or operator and return the duplicate copy to the Authority for inclusion in the aircraft records at its Aircraft Registry.

A signature in item 7, “Approval for Return to Service,” does not signify CAA approval unless the box to the left of “CAA Inspector” has been checked. The other persons listed in item 7 are authorized to “approve for return to service” if the repair or modification is accomplished using CAA-approved data, performed in accordance with LCAR Part 5, and found to conform.

Item 8 – Description of Work Accomplished. A clear, concise, and legible statement describing the work accomplished should be entered in the item 8 on the reverse side of the form. It is important that the location of the repair or modification, relative to the aircraft or component, be described. The approved data used as the basis for approving the major repair or modification for the return to service should be identified and described in this area.

1. For example, if a repair was made to a buckled spar, the description and entered in this part might begin by stating, “Removed wing from aircraft and removed skin from outer 6 feet. Repaired buckled spar 49 inches from the tip in accordance with ...” and continue with a description of the repair. The description should refer to applicable regulations and approved data used to substantiate the airworthiness of the repair or modification. If the repair or modification is subject to being covered by skin or other structures, statement should be made certifying that a recover inspection was made and that covered areas were found satisfactory.
2. Data used as a basis for the approving major repairs or modifications for return to service shall be approved prior to its use for that purpose and includes: Airworthiness Directives, Advisory Circulars under certain circumstances, TSO parts manufacturing approval, Approved Manufacturer’s instructions, kits and service handbooks, type certificates data sheets, and aircraft specifications. Supporting data such as stress analyses, test reports, sketches or photographs should be submitted on the form. These supporting data will be returned to the applicant by the Authority.
3. If additional space is needed to describe the repair or modification, attach sheets bearing the aircraft nationality and registration mark and the date work was completed.
4. Showing weight and balance computations under this item is not required; however, it may be done. In all cases where weight and balance of the aircraft are affected, the changes should be entered in the aircraft weight and balance records with the date, signature, and reference to the work performed on the [CAA MR&A Form] that required the changes.

Note: CAA MR&M Form is not authorized for use on other than Liberia-registered aircraft. If a foreign civil aviation authority requests the form, as a record of work performed, it may be provided.