

FIFTH SCHEDULE (Regulations 27, 28, 29, 30)
CONTINUING AIRWORTHINESS OF AIRCRAFT

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SUBPART A: GENERAL

5.001 APPLICABILITY

This Schedule 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; and
- (7) Air operator aircraft maintenance and inspection requirements.

5.005 DEFINITIONS

For the purpose of the Schedule, the following definitions shall apply —

- (1) **"Duplicate Inspections"** means a Duplicate Inspection of the system that is required wherever any system that can affect the flight path, attitude, or propulsive force of an aircraft is disturbed, including the flight, engine, propeller, and landing gear controls, and the associated operating and support mechanisms, or whenever any defect is reported on such a system;
 - (i) after re-assembly, or satisfactory operational check, and prior to flight;
 - (ii) first carried out and certified by one appropriately type-rated AME and then subsequently carried out and certified by a second appropriately type-rated AME who took no part in the re-assembly;
- (2) **"Major modification"** is as described in Appendix 1 to 5.005;
- (3) **"Major repair"** is as described in Appendix 2 to 5.005;
- (4) **"Modification"** means the alteration of an aircraft/aeronautical product in conformity with an approved standard;
- (5) **"Non-certificated Aircraft"** means an aircraft, being an ultra-light aircraft, amateur-built; aircraft, kit-plane, or experimental aircraft, which has not been issued with a Type Certificate pursuant to Part V, Regulation 27, of these Regulations and therefore does not qualify for the issue of an Airworthiness Certificate;

- (6) **"Overhaul"** means 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 Authorisation (PMA) or Technical Standard Order (TSO);
- (7) **"Preventative maintenance"** is as described in Appendix 3 to 5.005;
- (8) **"Rebuild"** means 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 authorised by the State of Registry;
- (9) **"State of Design"** means the Contracting State which approved the original type certificate and any subsequent supplemental type certificates for an aircraft, or which approved the design of an aeronautical product or appliance.
- (10) **"State of Manufacture"** means the Contracting State, under whose authority an aircraft was assembled, approved for compliance with the type certificate and all extant supplemental type certificates, test flown and approved for operation. The state of manufacture may or may not also be the state of design;
- (11) **"State of Registry"** means the Contracting State on whose register the aircraft is entered.

5.010 ACRONYMS

The following acronyms are used in this Schedule -

- (1) AOC – Air Operator Certificate;
- (2) AMO – Approved Maintenance Organization ;
- (3) MEL – Minimum Equipment List;
- (4) PIC – Pilot in command;
- (5) TSO – Technical Standard Order;

SUBPART B: AIRWORTHINESS CERTIFICATES

5.015 APPLICABILITY

This Subpart prescribes procedures required for the issue of airworthiness certificates.

5.020 ELIGIBILITY

- (a) Any registered owner of a Jamaican registered aircraft, or agent of the owner, may apply for an airworthiness certificate for that aircraft.
- (b) Each applicant for an airworthiness certificate shall apply in a form and manner acceptable to the Authority.

5.025 CLASSIFICATIONS OF AIRWORTHINESS CERTIFICATES

- (a) An Airworthiness Certificate (or Certificate of Airworthiness) will be issued for aircraft in the specific category and model designated by the State of Design in the Type Certificate.
- (b) The Authority may issue an Airworthiness Certificate that includes restrictions or limitations.
- (c) The Authority may issue a Flight Permit where an aircraft is safe for flight but does not meet all the requirements for the issue of an Airworthiness Certificate.

5.030 AMENDMENT OF AIRWORTHINESS CERTIFICATE

The Authority may amend or modify an Airworthiness Certificate –

- (1) upon application from an operator;
- (2) on its own initiative.

5.035 TRANSFER OR SURRENDER OF AIRWORTHINESS CERTIFICATE

- (a) An owner shall transfer an Airworthiness Certificate —
 - (1) to the lessee upon lease of an aircraft within or outside of Jamaica;
 - (2) to the buyer upon sale of the aircraft within Jamaica.
- (b) An owner shall surrender the Airworthiness Certificate for the aircraft to the issuing Authority upon sale of that aircraft outside of Jamaica.

5.040 PERIOD OF VALIDITY OF AIRWORTHINESS CERTIFICATES AND FLIGHT PERMITS

- (a) Airworthiness Certificates and Flight Permits are effective as follows, unless sooner surrendered, suspended or revoked, or a special termination date is otherwise established by the Authority —
 - (1) a Flight Permit is valid for the period of time specified in the permit;
 - (2) a Certificate of Airworthiness shall remain valid for the period of time specified on the certificate, provided that the aircraft is maintained according to the approved

maintenance program of the operator, and that continuing airworthiness of the aircraft is determined by a periodical inspection at appropriate intervals specified in the maintenance schedule that forms a part of the program.

- (b) The Authority may validate an airworthiness certificate issued by another Contracting State upon registration of the aircraft in Jamaica, provided that the period of validity shall not exceed the period specified in the certificate issued by the Contracting State.

5.045 AIRCRAFT IDENTIFICATION

Each applicant for an airworthiness certificate shall show that the aircraft is properly registered and marked, including all required markings and identification plates.

5.050 ISSUE OF AN AIRWORTHINESS CERTIFICATES

- (a) The Authority will issue an Airworthiness certificate 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 Manufacture;
 - (2) the aircraft has been inspected in accordance with the performance rules of this schedule for inspections and found airworthy by persons authorised by the Authority to make such determinations within the last 30 calendar days; and
 - (3) the Authority finds after an inspection that the aircraft conforms to the type design and is in condition for safe operation.
- (b) When an aircraft is being imported for registration in Jamaica, the Authority will request an export certificate of airworthiness, or certificate of conformity, from the exporting state.

5.055 AIRWORTHINESS DIRECTIVES

- (a) Upon registration of an aircraft in Jamaica, the Authority will notify the State of Design of the aircraft of the registration in Jamaica, and request that the Authority receives any and all airworthiness directives addressing that aircraft, airframe, aircraft engine, propeller, appliance, or component part.
- (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, the Authority will make the requirements of such directives apply to Jamaica registered civil aircraft of the type identified in that airworthiness directive.
- (c) The Authority may identify 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 Jamaica.

- (d) No person may operate any Jamaica registered civil aircraft to which the measures of this subsection apply, except in accordance with the applicable directives.

5.060 ISSUE OF NOISE CERTIFICATE

The Authority will issue a noise certificate for each aircraft to be operated internationally, based on confirmation from the manufacturer, that the aircraft's noise signature meets the Stage 3 international standard.

5.065 ISSUE OF A FLIGHT PERMIT

- (a) The Authority may issue a Flight Permit to an aircraft that does not qualify for an Airworthiness Certificate.
- (b) Aircraft holding Flight Permits shall be subject to operating limitations within Jamaica and may not make international flights unless the operator has obtained authorization in writing from each state in whose airspace the aircraft will be flying. The Authority shall issue specific operating limitations for each Flight Permit.
- (c) The Authority may issue a 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 a 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;
 - (6) private recreational flying, in the case of ultra-light aircraft, kit-planes, or amateur - built aircraft that are not issued with Type Certificates and are therefore classified as "Non-certificated Aircraft".
- (d) The Authority may issue a special Flight Permit with continuing authorisation for aircraft that may not meet applicable airworthiness requirements but are capable of safe flight, for the purpose of flying aircraft to a base where maintenance or alterations are to be performed. The permit issued under this paragraph is an authorisation, including conditions and limitations for flight, which is set forth in the AOC Holder's specific operating provisions. This permit under this paragraph may be issued to an AOC Holder certificated under Schedule 12.

- (e) In the case of all Flight Permits except those issued under paragraph (c) (6) above, the Authority shall require a properly executed maintenance endorsement in the aircraft permanent record, by a person or organization, authorised in accordance with this Schedule, stating that the subject aircraft has been inspected and found to be safe for the intended flight.
- (f) In the case of Flight Permits issued pursuant to paragraph (c)(6), the Authority shall impose such conditions, restrictions, and/or limitations, when issuing and/or renewing the Permit, as are necessary to ensure the safe operation of the aircraft.

SUBPART C: CONTINUED AIRWORTHINESS OF AIRCRAFT AND COMPONENTS

5.070 APPLICABILITY

This Subpart prescribes rules governing the continued airworthiness of civil aircraft registered in Jamaica whether operating inside or outside the borders of Jamaica.

5.075 RESPONSIBILITY

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, inspections, overhauls, 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 to the effect that the maintenance work performed has been completed satisfactorily and in accordance with the prescribed methods; and
- (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.

5.080 GENERAL

- (a) No person may perform maintenance, preventive maintenance, or modifications on an aircraft other than as prescribed in this schedule.
- (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 specific operating provisions approved under Schedule 12, or in accordance with the inspection program approved under this Schedule has been complied with.

- (c) No person may operate an aeronautical product to which an Airworthiness Directive applies, issued either by the State of Design, or State of Manufacture and adopted for Jamaican-registered aircraft by the Authority, or by the State of Registry for aircraft operated within Jamaica, 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.

5.085 REPORTING OF FAILURES, MALFUNCTIONS, AND DEFECTS

- (a) Owners or operators of airplanes over 5,700 kg and helicopters over 3180 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, vapour, 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 system or ability of the system to control overspeed during flight;
 - (11) a fuel or fuel-dumping system that affects fuel flow or causes hazardous leakage during flight;
 - (12) an unintended landing gear extension or retraction, opening or closing of landing gear doors during flight, or failure of the landing gear to extend normally.
 - (13) brake system components 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;
- (19) a failure or malfunction of more than one attitude, airspeed, or altitude instrument during a given operation of the aircraft.
- (20) 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;
- (21) the number of propeller featherings in flight, listed by type of propeller and engine and aircraft on which it was installed.
- (22) failure or malfunction of any system, structure, component, equipment, or appliance, inside the aircraft cabin, that endangered, or could have endangered a passenger or crew member.

(b) 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) aircraft serial number;
 - (ii) when the failure, malfunction, or defect is associated with an article approved under a TSO authorisation, the article serial number and model designation, as appropriate;
 - (iii) when the failure, malfunction or defect is associated with an engine or propeller, the engine or propeller serial number, as appropriate;
 - (iv) product model;
 - (v) identification of the part, component, or system involved, including the part number; and
 - (vi) natures of the failure, malfunction, or defect.

(c) The Authority, if the State of Registry of the aircraft, will submit all such reports upon receipt to the State of Design.

(d) The Authority, if not the State of Registry of the aircraft, will submit all such reports upon receipt to the State of Registry.

SUBPART D: AIRCRAFT MAINTENANCE REQUIREMENTS

5.090 APPLICABILITY

- (a) This Subpart prescribes the rules governing the maintenance and inspection of Jamaican registered civil aircraft operating within or outside Jamaica.
- (b) Unless otherwise approved by the Authority, this Subpart prescribes the minimum requirements that apply to aircraft operated by the holder of an AOC issued by Jamaica.
- (c) Subsections 5.105 and 5.110 do not apply to aircraft subject to an approved continuous maintenance program approved by the Authority for an AOC holder in Schedule 12.

5.095 REPAIR ASSESSMENT FOR PRESSURIZED FUSELAGES

No person may operate an aeroplane with a gross takeoff weight of 5700 Kg beyond the flight cycles prescribed by the Authority for such aircraft unless repair assessment guidelines applicable to the fuselage pressure boundary (fuselage skin, door skin and bulkhead webs) that have been approved by the competent Authority of the State of Design or Manufacture having cognizance over the type certificate for the affected aeroplane are incorporated within its inspection program.

5.100 MAINTENANCE REQUIRED

Each owner or operator of an aircraft shall —

- (1) have that aircraft inspected as prescribed in this Schedule and discrepancies repaired as prescribed in the Performance Rules of this Schedule;
- (2) repair, replace, remove, or inspect any inoperative instruments or items of equipment at the next required inspection, except when permitted under the provisions of an Minimum Equipment List (MEL);
- (3) ensure that a placard has been installed on the aircraft when listed discrepancies include inoperative instruments or equipment; and
- (4) ensure that maintenance personnel make appropriate entries in the aircraft maintenance records indicating the aircraft has been approved for return to service.

5.105 INSPECTIONS

- (a) Except as provided in paragraph (c), no person may operate an aircraft unless, within the preceding 12 calendar months, the aircraft has had —
 - (1) an annual inspection in accordance with this Schedule and has been approved for return to service by a person authorised under this Schedule; or

- (2) an inspection for the issuance of an airworthiness certificate in accordance with this Schedule.

Note: *No inspection performed under paragraph (b) of this section may be substituted for any inspection required by this paragraph unless it is performed by a person authorised to perform annual inspections and is entered as an "annual" inspection in the required maintenance record.*

- (b) Except as provided in paragraph (c), no person may operate an aircraft carrying any person (other than a crew member) for hire, and no person may give flight instruction for hire in an aircraft which that person provides, unless within the preceding 100 hours of time in service -
 - (1) the aircraft has received an annual or 100-hour inspection and been approved for return to service in accordance with this Schedule; or
 - (2) has received an inspection for the issuance of an airworthiness certificate in accordance with this Schedule.

Note: *The 100-hour limitation may be exceeded by not more than 10 hours while en route to reach a place where the inspection can be done. The excess time used to reach a place where the inspection can be done must be included in computing the next 100 hours of time in service.*

- (c) Paragraphs (a) and (b) of this section do not apply to –
 - (1) an aircraft that is operating under a flight permit;
 - (2) an aircraft subject to the requirements of subsections 5.110 and 5.112 of this section; or
 - (3) turbine-powered rotorcraft when the operator elects to inspect that rotorcraft in accordance with 5.110 of this section.
- (d) Other Inspections. No person may operate an aircraft unless the following ELT, altimeter system, transponder and VOR inspections required by Schedule 10 have been accomplished within the previous;
 - (1) 24 calendar months, for altimeter and pilot-static system inspections if the aircraft is to be used in IFR operations;
 - (2) 24 calendar months for the transponder check for transponder equipped aircraft;
 - (3) 24 calendar months for the ELT check for ELT equipped aircraft;
 - (4) 30 days for the VOR receiver check for aircraft to be used in IFR operations;

Note: *IFR aircraft maintained under a continuous maintenance program will have a different requirement other than the 30-day requirements.*

Note: *For these tests and inspections, see Appendix 1 to 5.105 for the altimeter system; Appendix 2 to 5.105 for the ATC transponder; Appendix 3 to 5.105 for the VOR receiver.*

5.110 PROGRESSIVE INSPECTION

Each registered owner or operator of an aircraft desiring to use a progressive inspection program shall submit a written request to the Authority, and shall provide —

- (1) a type-rated AME, licensed in accordance with Schedule 8, or an AMO appropriately rated in accordance with Schedule 6, to supervise or conduct the progressive inspection;
- (2) a current inspection procedures manual available and readily understandable to pilot and maintenance personnel containing, in detail —
 - (i) an explanation of the progressive inspection, including the continuity of inspection responsibility, the making of reports, and the keeping of records and technical reference material;
 - (ii) an inspection schedule, specifying the intervals in hours or days when routine and detailed inspections will be performed and including instructions for exceeding an inspection interval by not more than 10 hours while en-route and for changing an inspection interval because of service experience;
 - (iii) sample routine and detailed inspection forms and instructions for their use; and
 - (iv) sample reports and records and instructions for their use;
- (3) enough housing and equipment for necessary disassembly and proper inspection of the aircraft; and
- (4) appropriate current technical information for the aircraft.

Note 1: *The frequency and detail of the progressive inspection shall provide for the complete inspection of the aircraft within each 12 calendar months and be consistent with the current manufacturer's recommendations, field service experience, and the kind of operation in which the aircraft is engaged.*

Note 2: *The progressive inspection schedule shall ensure that the aircraft, at all times, will be airworthy and will conform to all applicable aircraft specifications, type certificate data sheets, airworthiness directives, and other approved data acceptable to the Authority. If the progressive inspection is discontinued, the owner or operator shall immediately notify the Authority, in writing, of the discontinuance.*

Note 3: *After the discontinuance, the first annual inspection under Schedule 10 is due within 12 calendar months after the last complete inspection of the aircraft under the progressive inspection.*

Note 4: *The 100-hour inspection under this Subpart is due within 100 hours after that complete inspection.*

Note 5: A complete inspection of the aircraft, for the purpose of determining when the annual and 100 hour inspections are due, requires a detailed inspection of the aircraft and all its components in accordance with the progressive inspection.

Note 6: A routine inspection of the aircraft and a detailed inspection of several components is not considered to be a complete inspection.

5.112 INSPECTION PROGRAMS FOR LARGE AND TURBINE AIRCRAFT

- (a) Except for aircraft operated under an AOC, the registered owner or operator of each large aeroplane, turbojet multi-engine aeroplane, turbo propeller-powered multi-engine aeroplane, and turbine-powered rotorcraft shall select, identify in the aircraft maintenance records, and use one of the following programs for the inspection of the aircraft —
 - (1) a current inspection program recommended by the manufacturer;
 - (2) a inspection program that is part of a continuous maintenance program for that make and model of aircraft currently approved by the Authority for use by an AOC holder; or
 - (3) any other inspection program established by the registered owner or operator of that aircraft and approved by the Authority.
- (b) Each owner/operator shall include in the selected program the name and address of the person responsible for the scheduling of the inspections required by the program and provide a copy of the program to the person performing inspection on the aircraft.
- (c) No aircraft shall be approved for return to service unless the replacement times for life-limited parts specified in the aircraft specification-type data sheets are complied with and the aeroplane, including airframe, engines, propellers, rotors, appliances, and survival and emergency equipment, is inspected in accordance with an inspection program selected.
- (d) Each person wishing to establish or change an approved inspection program shall submit the program for approval by the Authority and shall include in writing —
 - (1) instructions and procedures for the conduct of inspection for the particular make and model aircraft, including necessary tests and checks. The instructions shall set forth in detail the parts and areas of the aeronautical products, including survival and emergency equipment required to be inspected; and
 - (2) a schedule for the inspections that shall be performed expressed in terms of time in service, calendar time, number of system operations or any combination of these.
- (e) When an operator changes from one inspection program to another, the operator shall apply the time in service, calendar times, or cycles of operation accumulated under the previous program, in determining time the inspection is due under the new program.

5.115 CHANGES TO AIRCRAFT MAINTENANCE PROGRAMS

- (a) Whenever the Authority finds that revisions to an approved inspection program are necessary for the continued adequacy of the program, the owner or operator shall, after notification by the Authority, make any changes in the program found to be necessary.
- (b) The owner or operator may petition the Authority to reconsider the notice, within 30 days after receiving that notice.
- (c) Except in the case of an emergency requiring immediate action in the interest of safety, the filing of the petition stays the notice pending a decision by the Authority.

5.120 DUPLICATE INSPECTIONS

- (a) No person shall operate an aircraft except as provided in the following –
 - (i) whenever any system which can affect the attitude, flight path, or propulsive force of that aircraft is disturbed, or a defect in operation of the system is reported, a Duplicate Inspection is carried out on the system before the aircraft is returned to service.
 - (ii) whenever any major repair, or major modification, is performed on any part of the structure of that aircraft, the failure of which may result in the aircraft's inability to continue in safe flight, a Duplicate Inspection is performed on the repair or modification.
- (b) A Duplicate Inspection shall be performed and certified, by two Aircraft Maintenance Engineers, independently, both of whom shall be either type or class rated on the aircraft.
- (c) The Inspection shall consist of a visual inspection and a functional check, to confirm the integrity, security, freedom from interference, and correct functioning of all parts of the system, from the pilot's control input to the operating surface or component. Where a repair or modification is being inspected, the inspection shall confirm compliance of the repair or modification with all aspects of the approved data.
- (d) The Inspection shall be carried out first by one AME and then subsequently by the second AME. The system being inspected shall not be disturbed during the time lapse between the first and second inspections, and any such time lapse shall be kept to a minimum.
- (e) At least one of the Inspectors performing the Duplicate Inspection shall not have been involved in the performance of the work being inspected.
- (f) An Inspector assigned to the Quality section of a maintenance organization may perform the second part of a Duplicate Inspection.
- (g) Each air operator shall develop a list of the systems on its aircraft that will require Duplicate Inspection and shall include this list in its Maintenance Control Manual. This list shall at a minimum, include the following systems –

- (i) aileron and aileron trim ;
 - (ii) elevator and elevator trim
 - (iii) rudder and rudder trim
 - (iv) horizontal stabilizer
 - (v) flaps
 - (vi) slats
 - (vii) speed brakes / Spoilers
 - (viii) engine power lever (Throttle)
 - (ix) engine fuel shut-off (HP Cock)
 - (x) engine fuel Mixture
 - (xi) engine thrust reverser
 - (xii) landing gear extension and retraction
- (h) Each owner of a private aircraft shall include such a list in the maintenance program approved for his aircraft.

5.130 AIRCRAFT PARTS AND MATERIALS

- (a) All aeronautical parts and materials being installed or used on Jamaican-registered aircraft must be traceable to an approved source and must be supplied with documentation to attest to the fact.
- (b) All rotatable parts must be supplied with an original or certified copy of an Authorised Release Certificate that complies with the requirements of the JCAA, FAA, Transport Canada, or EASA (European Aviation Safety Agency).
- (c) All expendable parts must be supplied with either an Authorised Release Certificate as in (b) or a signed Certificate of Conformity that carries an appropriate statement that the part complies with airworthiness requirements. Packing slips that incorporate signed conformance certification are also acceptable.
- (d) Segments of bulk parts covered under a single certification document may be supplied with a copy of the document along with the necessary certification stating the location where the original documentation is being held on file.
- (e) Uncertified photocopies of documentation are not acceptable.
- (f) Whenever a part or item of material is installed on an aircraft, the documentation specified in (a) through (d) above, as applicable, must be included in the aircraft records along with the worksheet, job card, or logbook page that carries the entry for the work performed.

SUBPART E: PERFORMANCE STANDARDS

5.135 APPLICABILITY

This Subpart prescribes performance standards governing the maintenance and inspection of any aircraft having a Airworthiness Certificate issued by Jamaica or associated aeronautical products.

5.140 PERSONS AUTHORISED TO PERFORM MAINTENANCE, PREVENTIVE MAINTENANCE, AND MODIFICATIONS

- (a) The persons authorised to perform maintenance subject to this Subpart include —
- (1) a pilot licensed by the Authority;
 - (2) a person performing maintenance under the supervision of an Aircraft Maintenance Engineer;
 - (3) an Aircraft Maintenance Engineer;
 - (4) an AOC holder approved to perform maintenance under an equivalent system; and
 - (5) an AMO.
- (b) This Subpart outlines the privileges and limitations of these entities with respect to the extent and type of work they may perform regarding —
- (1) maintenance;
 - (2) preventive maintenance;
 - (3) modification;
 - (4) inspection; and
 - (5) approvals for return to service.

5.145 PERSONS AUTHORISED TO PERFORM MAINTENANCE

- (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, if that aircraft is not approved for use by an AOC holder.
 - (2) a person working under the supervision of an Aircraft Maintenance Engineer (AME), may perform the maintenance, preventive maintenance, and modifications that the supervisory aircraft maintenance engineer is authorised 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) an aircraft maintenance engineer 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 this Schedule.
 - (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 Authorisation, 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 this Schedule on aircraft it manufactures, while currently operating under a production certificate or under a currently approved production inspection system for such aircraft.
- (b) No person may perform any task defined as maintenance on an aircraft or aeronautical product, unless that person has satisfactorily completed a course of training approved by the Authority, sufficient to allow that person to perform the task as specified in 5.160. Persons who are participants in an approved course may be allowed to carry out tasks for which they have been trained, but only under the direct supervision of an AME.
- (c) No person shall be employed by an AOC holder, or an AMO, in a capacity where that person may be asked to perform any task defined as a maintenance task, unless the educational standard achieved by that person is sufficient to allow that person to;
- (i) read and understand clearly the maintenance instructions published by the manufacturer of an aeronautical product, or instructions for continued airworthiness published by an Airworthiness Authority,
 - (ii) carry out the task as intended by, and to a standard acceptable to the manufacturer or the applicable Authority, and
 - (iii) document on a worksheet, or in a maintenance logbook, the work that he or she has performed in a manner that can be clearly understood by another person.

5.150 AUTHORISED PERSONNEL TO APPROVE FOR RETURN TO SERVICE

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 authorised preventive maintenance.

- (2) an aircraft maintenance engineer, appropriately qualified, may approve aircraft and aeronautical products for return to service after he or she has performed, supervised, or inspected its maintenance subject to the limitations of this Schedule.
- (3) an AMO may approve aircraft and aeronautical products for return to service as provided in the specifications approved by the Authority.
- (4) an AOC holder may approve aircraft and aeronautical products for return to service as specified by the Authority.

5.155 PERSONS AUTHORISED TO PERFORM INSPECTIONS

No person, other than the Authority, may perform the inspections required in this Schedule 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 aircraft maintenance engineer 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 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.

5.160 PERFORMANCE RULES: MAINTENANCE

- (a) Every 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, 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 altered 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.
- (e) each person performing a major modification or repair defined in this Schedule will use data approved by the Authority as follows –
 - (1) the approved data used must be referenced on the form or log entry used to approved the modification or repair for return to service.
 - (2) "Approved data" is data specifically approved by the following for the modification or repair -
 - (i) the Authority;
 - (ii) the State of Manufacture;
 - (iii) a Designee authorized by the State of Manufacture for that type modification or repair;
 - (iv) the State of Design; or
 - (v) a Designee authorized by the State of Design for that type modification or repair.

5.165 PERFORMANCE RULES: INSPECTIONS [GENERAL]

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) where 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.

5.167 PERFORMANCE RULES: INSPECTIONS UNIQUE TO ROTORCRAFT

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.

5.169 PERFORMANCE RULES: ANNUAL AND 100 HOUR INSPECTIONS

- (a) Each person performing an annual or 100-hour inspection shall use a checklist while performing the inspection.

- (1) 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.
- (2) this checklist shall include the scope and detail of the items prescribed by the Authority.

Note: Appendix 1 to 5.165 lists the components to be included in an annual or 100-hour inspection.

- (b) Where person approving a reciprocating-engine-powered 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 —
 - (1) power output (static and idle rpm);
 - (2) magnetos;
 - (3) fuel and oil pressure; and
 - (4) cylinder and oil temperature.
- (c) Every person approving a turbine-engine-powered 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.

5.170 PERFORMANCE RULES: AIRWORTHINESS LIMITATIONS

Each person performing an inspection or other maintenance specified in the 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.

SUBPART F: MAINTENANCE RECORDS AND ENTRIES

5.200 OWNER MAINTENANCE RECORDS

The owner/operator of an aircraft shall keep a maintenance record of —

- (1) the entire aircraft including —
 - (i) total time in service (hours, calendar time and cycles, as appropriate) of the aircraft and all life limited parts;
 - (ii) current inspection status of the aircraft, including the time since required or approved inspections were last performed;
 - (iii) current empty mass and the location of the centre of gravity when empty;
 - (iv) addition or removal of equipment;

- (v) type and extent of maintenance and alteration, including the time in service and date;
 - (vi) when work was performed; and
 - (vii) a chronological list of compliance with Airworthiness Directives, including methods of compliance.
- (2) life limited products —
- (i) total time in service;
 - (ii) date of the last overhaul;
 - (iii) time in service since the last overhaul; and
 - (iv) date of the last inspection.
- (3) instruments and equipment, the serviceability and operating life of which are determined by their time in service including —
- (i) records of the time in service as are necessary to determine their serviceability or to compute their operating life; and
 - (ii) date of last inspection.

5. 205 OWNER MAINTENANCE RECORDS RETENTION

- (a) Every registered owner, operator or lessee, of an aircraft shall retain the following records for a period of not less than two years after the aircraft has been permanently removed from service or destroyed -
- (1) records of the maintenance, preventive maintenance, minor modifications, and records of the 100-hour, annual, and other required or approved inspections, as appropriate, for each aircraft (including the airframe) and each engine, propeller, rotor, and appliance of an aircraft to include —
 - (i) a description (or reference to data acceptable to the Authority) of the work performed,
 - (ii) the date of completion of the work performed; and
 - (iii) the signature and certificate number of the person approving the aircraft for return to service.
- (b) Every registered owner, operator or lessee, of an aircraft shall retain the following records for a period of not less than two years after the aircraft has been permanently removed from service, or destroyed.
- (1) that is to say, records containing the following information—
 - (i) the total time-in-service of the airframe, each engine, each propeller, and each rotor.
 - (ii) the current status of all life-limited aeronautical products;

- (iii) the time since last overhaul of all items installed on the aircraft which are required to be overhauled on a specified time basis;
 - (iv) the current inspection status of the aircraft, including the time since the last inspection required by the inspection program under which the aircraft and its appliances are maintained;
 - (v) the current status of applicable Airworthiness Directives including, for each, the method of compliance, the Airworthiness Directive number, and revision date. If the Airworthiness Directive involves recurring action, the time and date when the next action is required;
 - (vi) Copies of the forms prescribed by this chapter for each major modification to the airframe and currently installed engines, rotors, propellers, and appliances.
- (c) Every AOC holder, whether owner or lessee, shall retain the additional records as required by Schedule 12.560.

5. 210 TRANSFER OF MAINTENANCE RECORDS BY OWNER

An owner or operator who sells or leases a Jamaica registered aircraft shall transfer to the purchaser/lessee, at the time of sale or lease, the records identified in this Subpart for that aircraft, in plain language form or in coded form at the election of the purchaser/lessee if the coded form provides for the preservation and retrieval of information in a manner acceptable to the Authority.

5. 215 MAINTENANCE AND MODIFICATION RECORD ENTRIES

- (a) Every person who maintains, performs preventive maintenance, rebuilds, or modifies an aircraft or aeronautical product 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;
 - (2) completion date of the work performed;
 - (3) name, signature, certificate number, and kind of license held by the person approving the work.

Note: *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.

Note: *See Appendix 1 to 5.215 for additional maintenance form completion requirements.*

- (c) A person working under supervision of an aircraft maintenance engineer may not perform any inspection required in this Schedule or any inspection performed after a major repair or modification.

5. 220 ENTRIES REQUIRED FOLLOWING OVERHAUL AND REBUILDING

- (a) No person may describe in any required maintenance entry or form, an aeronautical product as being overhauled 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 may 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.

5. 225 ENTRIES FOR APPROVAL FOR RETURN TO SERVICE

No person may approve for return to service or execute a maintenance release for any aeronautical product that has undergone maintenance, preventive maintenance, rebuilding, or modification unless —

- (1) the appropriate maintenance record entry has been made;
- (2) the repair or modification form authorised 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.

Note: Appendix 1 to 5.215 provides the repair or modification requirements and form.

5.230 CONTENT AND FORM FOR ENTRIES FOLLOWING INSPECTION

- (a) *Maintenance record entries.*

The person approving or disapproving the return to service of an aeronautical product after any inspection performed in accordance with this Schedule, 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 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 is found to be airworthy and approved for return to service, the following or a similarly worded statement— *“I certify that this aircraft has been inspected in accordance with (insert type) inspection and was determined to be in airworthy condition”*;
- (5) if the aircraft is not approved for return to service because of needed maintenance, non-compliance with the applicable specifications, airworthiness directives, or other approved data, the following or a similarly worded statement— *I certify that this aircraft has been inspected in accordance with (insert type) inspection and a list of discrepancies and unairworthy items 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 this Schedule, 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 this Schedule who finds that the aircraft is not airworthy or does not meet the applicable type certificate data sheet, airworthiness directives or other approved data upon which its airworthiness depends, shall give the owner/operator a signed and dated list of those discrepancies.

- (c) The list of defects of defects described in paragraph (b) shall be retained until the defects are repaired and the aircraft is approved for return to service.

APPENDICES

APPENDIX 1 TO 5.005: MAJOR MODIFICATIONS (DEFINITION)

- (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 aircraft specifications) —
- (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 pressurisation, 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) **Power Plant Major Modifications.** Major power plant 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 authorised 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 Directive are appliance major modifications. In addition, changes in the basic design of radio communication and navigation equipment approved under type certification or other authorisation that have an effect on frequency stability, noise level, sensitivity, selectivity, distortion, spurious radiation, 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.

APPENDIX 2 TO 5.005: MAJOR REPAIRS (DEFINITION)

(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 of their replacement, when replacement is by fabrication such as riveting or welding, are airframe major repairs -

- (1) box beams;
- (2) monocoque or semi-monocoque 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, stabilisers, and control surfaces;
- (27) repairing, including re-bottoming, of removable or integral fuel tanks and oil tanks.

(b) **"Power Plant Major Repairs."**

Repairs of the following parts of an engine and repairs of the following types, are power plant major repairs —

- (1) separation or disassembly of a crankcase or crankshaft of a reciprocating engine equipped with an integral supercharger;
- (2) separation or disassembly of a crankcase or crankshaft of a reciprocating engine equipped with other than spur-type propeller reduction gearing;
- (3) special repairs to structural engine parts by welding, plating, metalising, or other methods;

(c) **"Propeller Major Repairs"**

Repairs of the following types to a propeller are propeller major repairs —

- (1) any repairs to or straightening of steel blades;
- (2) repairing or machining of steel hub;
- (3) shortening of blades;
- (4) re-tipping of wood propellers;
- (5) replacement of outer laminations on fixed pitch wood propellers;
- (6) repairing elongated bolt holes in the hub of fixed pitch wood propellers;
- (7) inlay work on wood blades;
- (8) repairs to composition blades;
- (9) replacement of tip fabric;
- (10) replacement of plastic covering;
- (11) repair of propeller governors;

- (12) overhaul of controllable pitch propellers;
- (13) repairs to deep dents, cuts, scars, nicks, etc., and straightening of aluminium blades;
- (14) the repair or replacement of internal elements of blades.

(d) **"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.

APPENDIX 3 TO 5.005: PREVENTIVE MAINTENANCE (DEFINITION)

(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.

APPENDIX 1 TO 5.105: ALTIMETER SYSTEM TESTS AND INSPECTIONS

- (a) The Altimeter system and altitude reporting equipment tests and inspections must be conducted by -
 - (1) the manufacturer of the airplane, or helicopter, on which the tests and inspections are to be performed;
 - (2) a certificated repair station properly equipped to perform those functions and

holding –

- (i) an instrument rating, Class I;
 - (ii) a limited instrument rating appropriate to the make and model of appliance to be tested;
 - (iii) a limited rating appropriate to the test to be performed;
 - (iv) an airframe rating appropriate to the airplane, or helicopter, to be tested; or
- (3) any “E” licence AME (for aircraft with an MCTOW 5700 Kg or less) or an “E” licence AME trained on the type of aircraft with an MCTOW greater than 5700kg.
- (b) Altimeter and altitude reporting equipment approved under Technical Standard Orders are considered to be tested and inspected as of the date of their manufacture.
- (c) Each person performing the altimeter system tests and inspections required by schedule 10 shall comply with the following:

I. Static pressure system -

- (1) ensure freedom from entrapped moisture and restrictions.
- (2) determine that leakage is within the tolerances established in the aircraft certification rule.
- (3) determine that the static port heater, if installed, is operative.
- (4) ensure that no alterations or deformations of the airframe surface have been made that would affect the relationship between air pressure in the static pressure system and true ambient static air pressure for any flight condition.

II. Altimeter -

- (5) test by an appropriately rated repair facility in accordance with the following subparagraphs. Unless otherwise specified, each test for performance may be conducted with the instrument subjected to vibration. When tests are conducted with the temperature substantially different from ambient temperature of approximately 25 degrees C, allowance shall be made for the variation from the specified condition.

(i) **Scale error.**

With the barometric pressure scale at 29.92 inches of mercury, the altimeter shall be subjected successively to pressures corresponding to the altitude specified in Table I up to the maximum normally expected operating altitude of the airplane in which the altimeter is to be installed. The reduction in pressure shall be made at a rate not in excess of 20,000 feet per minute to within approximately 2,000 feet of the test point. The test point shall be approached at a rate compatible with the test equipment. The

altimeter shall be kept at the pressure corresponding to each test point for at least 1 minute, but not more than 10 minutes, before a reading is taken. The error at all test points must not exceed the tolerances specified in Table I.

(ii) **"Hysteresis."**

The hysteresis test shall begin not more than 15 minutes after the altimeter's initial exposure to the pressure corresponding to the upper limit of the scale error test prescribed in subparagraph (i); and while the altimeter is at this pressure, the hysteresis test shall commence. Pressure shall be increased at a rate simulating a descent in altitude at the rate of 5,000 to 20,000 feet per minute until within 3,000 feet of the first test point (50 percent of maximum altitude). The test point shall then be approached at a rate of approximately 3,000 feet per minute. The altimeter shall be kept at this pressure for at least 5 minutes, but not more than 15 minutes, before the test reading is taken. After the reading has been taken, the pressure shall be increased further, in the same manner as before, until the pressure corresponding to the second test point (40 percent of maximum altitude) is reached. The altimeter shall be kept at this pressure for at least 1 minute, but not more than 10 minutes, before the test reading is taken. After the reading has been taken, the pressure shall be increased further, in the same manner as before, until atmospheric pressure is reached. The reading of the altimeter at either of the two test points shall not differ by more than the tolerance specified in Table II from the reading of the altimeter for the corresponding altitude recorded during the scale error test prescribed in paragraph (b)(i).

(iii) **"After effect"**

Not more than 5 minutes after the completion of the hysteresis test prescribed in paragraph (b)(ii), the reading of the altimeter (corrected for any change in atmospheric pressure) shall not differ from the original atmospheric pressure reading by more than the tolerance specified in Table II.

(iv) **"Friction."**

The altimeter shall be subjected to a steady rate of decrease of pressure approximating 750 feet per minute. At each altitude listed in Table III, the change in reading of the pointers after vibration shall not exceed the corresponding tolerance listed in Table III.

(v) **"Case leak."**

The leakage of the altimeter case, when the pressure within it corresponds to an altitude of 18,000 feet, shall not change the altimeter reading by more than the tolerance shown in Table II during an interval of 1 minute.

(vi) **"Barometric scale error."**

At constant atmospheric pressure, the barometric pressure scale shall be set at each of the pressures (falling within its range of adjustment) that are listed in Table IV, and shall cause the pointer to indicate the equivalent altitude difference shown in Table IV with a tolerance of 25 feet.

- (6) Altimeters which are the air data computer type with associated computing systems, or which incorporate air data correction internally, may be tested in a manner and to specifications developed by the manufacturer which are acceptable to the Administrator.

III. Integration Test

Automatic Pressure Altitude Reporting Equipment and ATC Transponder System Integration Test. The test must be conducted by an appropriately rated person under the conditions specified in paragraph (a). Measure the automatic pressure altitude at the output of the installed ATC transponder when interrogated on Mode C at a sufficient number of test points to ensure that the altitude reporting equipment, altimeters, and ATC transponders perform their intended functions as installed in the aircraft. The difference between the automatic reporting output and the altitude displayed at the altimeter shall not exceed 125 feet.

IV. Records:

Comply with the provisions of the fifth Schedule as to content, form, and disposition of the records. The person performing the altimeter tests shall record on the altimeter the date and maximum altitude to which the altimeter has been tested and the persons approving the airplane for return to service shall enter that data in the airplane log or other permanent record.

TABLE I TO APPENDIX 1 TO 5.105: ALTITUDE & EQUIVALENT BAROMETRIC PRESSURE

Altitude	Equivalent pressure (inches of Mercury)	Tolerance \pm (feet)
-1,000	31.018	20
0	29.921	20
500	29.385	20
1,000	28.856	20
1,500	28.335	25
2,000	27.821	30
3,000	26.817	30
4,000	25.842	35
6,000	23.978	40
8,000	22.225	60

10,000	20.577	80
12,000	19.029	90
14,000	17.577	100
16,000	16.216	110
18,000	14.942	120
20,000	13.750	130
22,000	12.636	140
25,000	11.104	155
30,000	8.885	180
35,000	7.041	205
40,000	5.538	230
45,000	4.355	255
50,000	3.425	280

TABLE II TO APPENDIX 1 TO 5.105: TEST TOLERANCES

Test	Tolerance (feet)
Case Leak Test	±100
Hysteresis Test	
- <i>First Test Point</i> (50 percent of maximum altitude)	±75
- <i>Second Test Point</i> (40 percent of maximum altitude)	±75
After Effect Test	±30

TABLE III TO APPENDIX 1 TO 5.105: FRICTION

Altitude (feet)	Tolerance (feet)
1,000	±70
2,000	±70
3,000	±70
5,000	±70
10,000	±80
15,000	±90
20,000	±100
25,000	±120
30,000	±140
35,000	±160
40,000	±180
50,000	±250

TABLE IV TO APPENDIX 1 TO 5.5105: PRESSURE/ALTITUDE DIFFERENCE

Pressure (inches of Hg)	Altitude difference (feet)
28.10	-1,727
28.50	-1,340
29.00	-863
29.50	-392
29.92	0
30.50	+531
30.90	+893
30.99	+974

Appendix 2 to 5.105 Transponder Tests and Inspections

- (a) No person may use an ATC Transponder that is specified in Subpart C, Paragraph 7.110 of the Seventh Schedule unless, following any installation or maintenance on an ATC transponder where data correspondence error could be introduced, the integrated system has been tested, inspected, and found to comply with paragraph (c), of Appendix 2 to 5.105.
- (b) The tests and inspections specified in this section must be conducted by -
- (1) an Approved Maintenance Organization properly equipped to perform those functions and holding-
 - (i) a radio rating, Class III;
 - (ii) a limited radio rating appropriate to the make and model transponder to be tested;
 - (iii) a limited rating appropriate to the test to be performed, or
 - (2) a holder of a continuous airworthiness maintenance program as provided in Schedule 12, or
 - (3) the manufacturer of the aircraft on which the transponder to be tested is installed, if the transponder was installed by that manufacturer.

Note: *The ATC transponder tests may be conducted using a bench check or portable test equipment and must meet the requirements prescribed in paragraphs (a) through (j) of this appendix. If portable test equipment with appropriate coupling to the aircraft antenna system is used, operate the test equipment for ATCRBS transponders at a nominal rate of 235 interrogations per second to avoid possible ATCRBS interference. Operate the test equipment at a nominal rate of 50 Mode S interrogations per second for Mode S. An additional 3 dB loss is allowed to compensate for antenna coupling errors during receiver sensitivity measurements conducted in accordance with paragraph (c)(1) when using portable test equipment.*

- (c) **Radio Reply Frequency -**

- (1) for all classes of ATCRBS transponders, interrogate the transponder and verify that the reply frequency is 1090 ± 3 Megahertz (MHz);
- (2) for classes 1B, 2B, and 3B Mode S transponders, interrogate the transponder and verify that the reply frequency is 1090 ± 3 MHz;
- (3) for classes 1B, 2B, and 3B Mode S transponders that incorporate the optional 1090 ± 1 MHz reply frequency, interrogate the transponder and verify that the reply frequency is correct;
- (4) for classes 1A, 2A, 3A, and 4 Mode S transponders, interrogate the transponder and verify that the reply frequency is 1090 ± 1 MHz.

(d) **Suppression -**

When Classes 1B and 2B ATCRBS Transponders, or Classes 1B, 2B, and 3B Mode S transponders are interrogated Mode 3/A at an interrogation rate between 230 and 1,000 interrogations per second; or when Classes 1A and 2A ATCRBS Transponders, or Classes 1B, 2A, 3A, and 4 Mode S transponders are interrogated at a rate between 230 and 1,200 Mode 3/A interrogations per second -

- (1) verify that the transponder does not respond to more than 1 percent of ATCRBS interrogations when the amplitude of P2 pulse is equal to the P1 pulse.
- (2) verify that the transponder replies to at least 90 percent of ATCRBS interrogations when the amplitude of the P2 pulse is 9 dB less than the P1 pulse. If the test is conducted with a radiated test signal, the interrogation rate shall be 235 ± 5 interrogations per second unless a higher rate has been approved for the test equipment used at that location.

(e) **Receiver Sensitivity -**

- (1) verify that for any class of ATCRBS Transponder, the receiver minimum triggering level (MTL) of the system is -73 ± 4 dbm, or that for any class of Mode S transponder the receiver MTL for Mode S format (P6 type) interrogations is -74 ± 3 dbm by use of a test set either -
 - (i) connected to the antenna end of the transmission line;
 - (ii) connected to the antenna terminal of the transponder with a correction for transmission line loss; or
 - (iii) utilized radiated signal.

- (2) Verify that the difference in Mode 3/A and Mode C receiver sensitivity does not exceed 1 db for either any class of ATCRBS transponder or any class of Mode S transponder.

(f) **Radio Frequency (RF) Peak Output Power -**

- (1) Verify that the transponder RF output power is within specifications for the class of transponder. Use the same conditions as described in (c)(1) (i), (ii), and (iii) above.
 - (i) for Class 1A and 2A ATCRBS transponders, verify that the minimum RF peak output power is at least 21.0 dbw (125 watts);
 - (ii) for Class 1B and 2B ATCRBS Transponders, verify that the minimum RF peak output power is at least 18.5 dbw (70 watts);
 - (iii) for Class 1A, 2A, 3A, and 4 and those Class 1B, 2B, and 3B Mode S transponders that include the optional high RF peak output power, verify that the minimum RF peak output power is at least 21.0 dbw (125 watts);
 - (iv) for Classes 1B, 2B, and 3B Mode S transponders, verify that the minimum RF peak output power is at least 18.5 dbw (70 watts);
 - (v) for any class of ATCRBS or any class of Mode S transponders, verify that the maximum RF peak output power does not exceed 27.0 dbw (500 watts).

Note: The tests in (e) through (j) apply only to Mode S transponders.

- (g) **Mode S Diversity Transmission Channel Isolation:** For any class of Mode S transponder that incorporates diversity operation, verify that the RF peak output power transmitted from the selected antenna exceeds the power transmitted from the non-selected antenna by at least 20 db.
- (h) **Mode S Address:** Interrogate the Mode S transponder and verify that it replies only to its assigned address. Use the correct address and at least two incorrect addresses. The interrogations should be made at a nominal rate of 50 interrogations per second.
- (i) **Mode S Formats:** Interrogate the Mode S transponder with uplink formats (UF) for which it is equipped and verify that the replies are made in the correct format. Use the surveillance formats UF = 4 and 5. Verify that the altitude reported in the replies to UF = 4 are the same as that reported in a valid ATCRBS Mode C reply. Verify that the identity reported in the replies to UF = 5 are the same as that reported in a valid ATCRBS Mode 3/A reply. If the transponder is so equipped, use the communication formats UF = 20, 21, and 24.

- (j) **Mode S All-Call Interrogations:** Interrogate the Mode S transponder with the Mode S only all-call format UF = 11, and the ATCRBS/Mode S all-call formats (1.6 microsecond P4 pulse) and verify that the correct address and capability are reported in the replies (downlink format DF = 11).
- (i) **ATCRBS Only All-Call Interrogation:** Interrogate the Mode S transponder with the ATCRBS only all-call interrogation (0.8 microsecond P4 pulse) and verify that no reply is generated.
 - (ii) **Squitter:** Verify that the Mode S transponder generates a correct squitter approximately once per second.
 - (iii) **Records:** Comply with the provisions of Schedule 5 as to content, form, and disposition of the records.

Appendix 3 to 5.105: VOR Receiver Tests and Inspections

- (a) Each VOR system of radio navigation used in IFR operations must be;-
- (1) maintained, checked, and inspected under an approved procedure; or
 - (2) has been operationally checked within the preceding 30 days, and was found to be within the limits of the permissible indicated bearing error set forth in paragraph (b) or (c) of this section.
- (b) Except as provided in paragraph (c) of this section, each person conducting a VOR check under paragraph (a)(2) of this section shall -
- (1) use, at the airport of intended departure, an approved test signal or a test signal radiated by a certificated and appropriately rated radio approved maintenance organization or, outside Jamaica a test signal operated or approved by an appropriate authority to check the VOR equipment (the maximum permissible indicated bearing error is $\pm 4^\circ$); or
 - (2) use, at the airport of intended departure, a point on the airport surface designated as a VOR system checkpoint by the Authority, or, outside Jamaica, by an appropriate authority (the maximum permissible bearing error is $\pm 4^\circ$);
 - (3) if neither a test signal nor a designated checkpoint on the surface is available, use an airborne checkpoint designated by the Authority or, outside Jamaica, by an appropriate authority (the maximum permissible bearing error is $\pm 6^\circ$); or
 - (4) if no check signal or point is available, while in flight -
 - (i) a VOR radial that lies along the centerline of an established VOR airway;

- (ii) select a prominent ground point along the selected radial preferably more than 20 nautical miles from the VOR ground facility and manoeuvre the aircraft directly over the point at a reasonably low altitude; and
 - (iii) note the VOR bearing indicated by the receiver when over the ground point (the maximum permissible variation between the published radial and the indicated bearing is 6°).
- (c) Where dual system VOR (units independent of each other except for the antenna) is installed in the aircraft, the person checking the equipment may check one system against the other in place of the check procedures specified in paragraph (b) of this section. Both systems shall be tuned to the same VOR ground facility and note the indicated bearings to that station. The maximum permissible variation between the two indicated bearings is 4°.
- (d) Every person making the VOR operational check, as specified in paragraph (b) or (c) of this section, shall enter the date, place, bearing error, and sign the aircraft log or other record. In addition, if a test signal radiated by an approved maintenance organization, as specified in paragraph (b)(1) of this section, is used, an entry must be made in the aircraft log or other record by the organization's representative certifying to the bearing transmitted by the approved maintenance organization for the check and the date of transmission.

Appendix 1 to 5.165: Performance Rules – Annual and 100-hour Inspections

- (e) Every 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.
- (f) Every 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
- (xi) 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 safety;
- (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, 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.
- (9) 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.

APPENDIX 1 TO 5.215: RECORDING OF MAJOR REPAIRS AND MAJOR MODIFICATIONS

(a) Each person performing a major repair or major modification shall —

- (1) execute the major repair and modification form prescribed by the Authority at least in duplicate that references the approved data used;
- (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.

(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 authorised 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 —

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.

Order No. _____ Date _____

Signed _____

(Signature of authorised representative)

(Facility Name) (AMO Certificate Number)

(Address)

"