
**CIVIL AVIATION
(PART V – AIRWORTHINESS)
REGULATIONS**

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SUBSIDIARY LEGISLATION**CIVIL AVIATION
(PART V – AIRWORTHINESS)
REGULATIONS**

MADE BY THE MINISTER IN ACCORDANCE WITH
SECTION OF THE CIVIL AVIATION ACT

Citation.

1. These Regulations may be cited as the Civil Aviation (Part V – Airworthiness) Regulations.

Interpretation.

2. In these Regulations—

- (a) “Act” means the Civil Aviation Act;
- (b) “aeronautical product” means any aircraft engine, propeller or sub assembly, appliance, material, part or component to be installed on an aircraft and any aircraft;
- (c) “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.
- (d) “aircraft” means any machine that can derive support in the atmosphere from the reactions of the air other than the reactions of the air against the surface of the earth;
- (e) “aircraft category” means the classification of aircraft according to

specified basic characteristics such as aeroplane, rotorcraft, glider or lighter-than-air;

- (f) “aircraft component” means an assembly, item, or part of an aircraft up to and including a complete power plant and any operational and emergency equipment but does not include an aircraft;
- (g) “aircraft type” means all aircraft of the same basic design;
- (h) “airworthy” means the status of an aircraft, engine, propeller or part when it conforms to its approved design and is in a condition for safe operation;
- (i) “Annex 16” means Annex 16 to the Chicago Convention;
- (j) “approved data” means technical aeronautical information approved by the Authority;
- (k) “Approved Maintenance Organisation,” means a maintenance organisation approved by the Authority in accordance with the Civil Aviation Approved Maintenance Organisation Regulations, to conduct maintenance on Guyana aircraft and their associated aeronautical product;
- (l) “Authority” means the Civil Aviation Authority of Guyana;

- (m) “Certificate of Maintenance Review” means a document issued by an operator, an approved maintenance organisation or an aircraft maintenance engineer, in respect of an aircraft, certifying that a maintenance review of such aircraft and its equipment as is necessary for airworthiness has been carried out;
- (n) “continuing airworthiness” means 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;
- (o) “critical engine” means an engine whose failure gives the most adverse effect on aircraft characteristics relative to the case under consideration;
- (p) “deferred defect” means a defect on an aircraft which has been assessed as being within the approved requirements allowed for flight operations and rectification action for that defect has been deferred by an aircraft maintenance engineer for a specified time limit;
- (q) “Director General” means the Director General of Civil Aviation appointed under section 13 of the Act;

- (r) “Duplicate Inspection” means an inspection on a critical control system, or a vital point on an aircraft, the failure of which system or vital point could result in a malfunction or defect endangering the safe operation of the aircraft, which is first carried out and certified by a person authorized to do so under these Regulations and then subsequently carried out and certified by a second person so authorized under these Regulations, with both inspections being completed independent of each other and prior to the aircraft being released to service.
- (s) “engine” means a unit consisting of at least those components and equipment necessary for functioning and control but excludes the propeller and rotors where applicable and used or intended to be used for aircraft propulsion;
- (t) “familiarisation training” means training of a general nature whereby the participant gains a general appreciation and familiarity with the subject;
- (u) “Guyana aircraft” means a civil aircraft registered in Guyana.
- (v) “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.

- (w) “inspection” means the examination of an aircraft or aeronautical product to establish conformity with an approved standard.
- (x) “large aircraft” means an aeroplane of over five thousand, seven hundred kilogrammes maximum certified take-off mass and a helicopter of over three thousand, one hundred and seventy-five kilogrammes maximum certified take-off mass;
- (y) “maintenance” means the performance of tasks required to ensure the continuing airworthiness of an aircraft or aeronautical product including any one or combination of overhaul, inspection, replacement, defect rectification, and the embodiment of a modification or repair;
- (z) “major modification” means an alteration specified under Schedule 3.
- (aa) “major repair” means a repair specified under Schedule 3.
- (bb) “modification” means the alteration of an aircraft or aeronautical product in conformity with an approved standard;
- (cc) “noise certificate” means a document issued or validated by a State or by a competent authority of a State attesting noise certification in respect of an aeroplane either by way of a separate certificate or a statement contained in

another document approved by the State of Registry of the aircraft and required by that State to be carried in the aircraft;

(*dd*) “operator” means a person, organisation or enterprise, engaged in or offering to engage in, aircraft operations, and any person who causes or authorises the operation of aircraft, in the capacity of owner, lessee or otherwise, whether with or without the control of the aircraft; and who or which is deemed to be engaged in the operation of aircraft within the Civil Aviation Act;

(*ee*) “overhaul” means the restoration of an aircraft or aeronautical product using methods, techniques and practices acceptable to the Authority, including disassembly, cleaning and inspection as permitted, repair as necessary and re-assembly and testing 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 and manufacturing approved standard in respect of material, part, process or appliance;

(*ff*) “power plant” means the system consisting of all the engines, drive system components, where applicable, and where installed, propellers, their

accessories, ancillary parts, and fuel and oil systems installed on the aircraft but excluding the rotors for helicopters.

- (gg) “preventive maintenance” means the simple or minor preservation operations and replacement of small standard parts not involving complex assembly operations;
- (hh) “rebuild” means the restoration of an aircraft or aeronautical product by the manufacturer using methods, techniques and practices acceptable to the Authority, when it has been dis- assembled, 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 or an organisation approved by the manufacturer, and authorised by the State of Registry;
- (ii) “repair” means the restoration of an aircraft or aeronautical product to an airworthy condition as defined by the appropriate airworthiness requirements;
- (jj) “small aircraft” means an aeroplane of maximum certified take-off mass of five thousand, seven hundred kilogrammes or less and a helicopter of maximum certified take-off mass of three thousand, one hundred and seventy-five kilogrammes or less;

- (kk) “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;
- (ll) “State of Manufacture” means the Contracting State under whose authority an aircraft was assembled, approved for compliance with the Type Certificate and all existing Supplemental Type Certificates, test flown and approved for operation;
- (mm) “State of Registry” means the Contracting State on whose register the aircraft is entered;
- (nn) “Type Certificate” means a document issued by a Contracting State to define the design of an aircraft type and to certify that this design meets the appropriate airworthiness requirements of that State.

Application.

3. (1) These Regulations shall apply to all Guyana aircraft and all aeronautical products to be installed or used on such aircraft and prescribes the following airworthiness requirements:

- (a) Verification of the original certification of a Guyana aircraft and its aeronautical products;
- (b) issuance of an Airworthiness Certificate

and other certification for Guyana aircraft and aeronautical products;

- (c) continued airworthiness of an aircraft and its associated aeronautical products; and
- (d) verification of the airworthiness and serviceability of a Guyana aircraft prior to release to service.

PART I TYPE CERTIFICATION

Applicability of Part I.

4. This Part prescribes the requirements for the acceptance of a Type Certificate for an aeronautical product issued by another Member State.

Application for the acceptance of a Type Certificate.

5. Where a person wishes to obtain a Certificate of Airworthiness for an aircraft being imported into Guyana, that person shall present to the Authority a copy of the Type Certificate issued by the State of Design of the aircraft along with a written request for its acceptance and provided that the Type Certificate has been issued by the Federal Aviation Administration of the United States of America, Transport Canada, or the European Aviation Safety Agency, the Authority may use that Type Certificate as the basis for the issuance of a Guyana Certificate of Airworthiness.

Certificate of Airworthiness to be based on a Type Certificate.

6. No person shall operate an aircraft in Guyana, and no person shall operate a Guyana aircraft unless that aircraft has been issued with a Certificate of Airworthiness based on that aircraft meeting the requirements of a Type Certificate issued by the Federal Aviation Administration of the United States, Transport Canada, the European Aviation Safety Agency, or another Member State whose airworthiness code has been deemed by the Authority to be equivalent to those named.

PART II
AIRWORTHINESS CERTIFICATION

Applicability
of Part II.

7. This Part prescribes the requirements for the issue of a Certificate of Airworthiness a Certificate of Maintenance Review and a Flight Permit for Guyana aircraft.

Restriction on
Operation of
Aircraft
Without
Airworthiness
Certificate.

8. (1) The operator of a Guyana aircraft shall not operate such aircraft in civil aircraft operations unless the Authority has issued a Certificate of Airworthiness in respect of such aircraft certifying it to be airworthy.

(2) The operator of a Guyana aircraft, who wishes such aircraft to be certified as airworthy shall—

- (a) apply to the Authority in the prescribed form;
- (b) pay the prescribed fee; and
- (c) satisfy the airworthiness requirements of these Regulations.

Requirements
for the Issue of
Airworthiness
Certificate.

9. (1) The Director General may issue a Certificate of Airworthiness in respect of a Guyana aircraft where—

- (a) the applicant presents evidence to the Director General that the aircraft conforms to a type design approved under a Type Certificate or applicable Supplemental Type Certificate of a State of Design that abides by one of the Airworthiness Codes specified in Schedule 1.

Schedule 1.

- (b) all applicable Airworthiness Directives, Mandatory Service Bulletins and other maintenance requirements have been completed and the aircraft and its records have been inspected within the last thirty days in accordance with these Regulations and found to be airworthy by persons authorised by the Authority to make such determinations;
- (c) he is satisfied, after an inspection of the Guyana aircraft and its maintenance records, that such aircraft conforms to the type design and is in a condition for safe operation; and
- (d) such aircraft meets the acceptable and equivalent type design standards of one of the established international airworthiness codes set out in the Schedule 1.

(2) Where a Guyana aircraft is known, or suspected by the Authority, to have one or more characteristics that may make the operation of such aircraft an unacceptable risk, that aircraft shall not be issued with a Certificate of Airworthiness.

(3) Prior to applying for the issue of a Certificate of Airworthiness, the owner of an aircraft shall –

- (a) register such aircraft in Guyana in accordance with the requirements of the Civil Aviation (Registration and Markings) Regulations; and
- (b) confirm that the aircraft meets the applicable requirements of the Civil

Aviation (Instruments and Equipment)
Regulations.

(4) The Director General may on his own initiative or upon application from the operator of a Guyana aircraft amend or modify a Certificate of Airworthiness of such aircraft.

Issue of Flight
Permit.

10. (1) The Director General may issue a Flight Permit to the operator of a Guyana aircraft, where such aircraft is capable of safe flight, but unable to meet one or more applicable airworthiness requirements, for the purpose of—

- (a) flying to a base where repairs, modifications, maintenance, or inspections are to be performed, or to a point of storage;
- (b) flight testing where required after performing maintenance;
- (c) delivering or exporting such aircraft from Guyana; or
- (d) evacuating aircraft from areas of impending danger.

(2) The Director General shall in the interest of safety issue specific operating limitations for each Flight Permit issued under sub-regulation (1).

(3) The Director General shall require the operator of a Guyana aircraft which has been issued a Flight Permit under sub-regulation (1), to conduct such required maintenance in accordance with the aircraft maintenance manual as to allow the aircraft to complete the said flight safely.

(4) An operator under sub-regulation (3) shall ensure that the maintenance required to be conducted is performed by a person or organisation authorised to so conduct such maintenance under these Regulations.

(5) A person or organisation conducting maintenance under sub-regulations (3) and (4) shall upon completing such maintenance, record a statement in the aircraft permanent record that such aircraft has been inspected and found to be safe for the intended flight and affix his signature against such statement.

(6) An operator shall obtain the required overflight authorisations from every State to be overflown on flights outside Guyana by an aircraft operating under a Flight Permit.

(7) Where a Flight Permit is issued in accordance with these Regulations, the operator shall ensure that it is displayed in the aircraft at all times during operations and a copy shall be kept on the ground.

(8) An aircraft in respect of which a Flight Permit has been issued under these Regulations shall not carry passengers or property for compensation or hire.

Surrender of a Certificate of Airworthiness.

11. An operator shall surrender the Airworthiness Certificate for a Guyana aircraft to the Authority upon sale or transfer of such aircraft to an operator outside of Guyana.

Export Certificate of Airworthiness required for export of aircraft.

12. The Director General may issue an Export Certificate of Airworthiness for a Guyana aircraft which is to be exported from Guyana for the purposes of confirming the history and status of the aircraft to the Regulatory Authority in the destination State and such a certificate shall not be used as a substitute for the Certificate of Airworthiness required for flight.

Civil Aviation (Part V – Airworthiness) Regulations

Continued
Validity of
Certificate of
Airworthiness.

13. (1) A Certificate of Airworthiness shall normally remain valid for one year unless otherwise surrendered, suspended or revoked.

(2) Notwithstanding sub-regulation (1), a Certificate of Airworthiness may be issued to an operator for a period of less than one year where it is issued under regulation 6.

(3) The continued validity of a Certificate of Airworthiness shall be dependent upon —

- (a) the Guyana aircraft being maintained in an airworthy condition in accordance with the requirements of these Regulations;
- (b) the Authority being granted access to the Guyana aircraft to determine continued compliance with these Regulations; and the Guyana aircraft being operated within the performance and operating limitations of its approved Aircraft Flight Manual.

Renewal of a
Certificate of
Airworthiness.

14. (1) The application for the renewal of a Certificate of Airworthiness shall be—

- (a) made in a form and manner prescribed by the Authority; and
- (b) accompanied by –
 - i. an engineer’s report in the form prescribed by the Authority, giving details of work done on the aircraft since the last renewal of the Airworthiness Certificate;

and

- ii. a copy of the mass and balance report for the aircraft;
- iii. the prescribed fee; and
- iv. such other documents as may be prescribed by the Director General.

Contents of a
Certificate of
Airworthiness.

15. A Certificate of Airworthiness shall be a single document signed by the Authority and shall contain the following:

- (a) the date of expiry;
- (b) the nationality and registration marks of the aircraft;
- (c) the name of the manufacturer and the designation and model number of the Guyana aircraft;
- (d) the serial number of the Guyana aircraft;
- (e) the certification basis or permitted operational category of the aircraft;
- (f) the date of issue;
- (g) an authorising signature; and
- (h) the following statement with reference to the appropriate Airworthiness Code inserted in the area marked with an asterisk:

“This Certificate of Airworthiness is issued pursuant to the Convention on International Civil Aviation dated 7th December, 1944 and () in respect of the above aircraft which is*

considered to be airworthy when maintained and operated in accordance with the foregoing and the pertinent operating limitations”.

- (i) such other matters as the Authority may deem necessary.

Aircraft Flight Manual.

16. The Aircraft Flight Manual issued by the Manufacturer and approved by the State of Design, is deemed to be a part of the Certificate of Airworthiness.

Requirements of Air Operator to Maintain Records for Identification of Type Design.

17. (1) Where a Certificate of Airworthiness has been issued in respect of a Guyana aircraft under these Regulations:

- (a) the operator of such Guyana aircraft shall be responsible for maintaining records of all maintenance tasks completed on such aircraft including records to establish the identification of such aircraft with its approved type design;
- (b) all such records shall be retained by the operator so long as the operator has custody and control of the aircraft;
- (c) at such time as the aircraft may be sold or transferred all such records shall be handed over to the new operator; and
- (d) in any event, such records shall be retained by the last operator for two (2) years after the aircraft has been removed from service or destroyed.

Requirements
for Continued
Airworthiness
of Aircraft and
Aeronautical
Products.

18. (1) A person shall not perform maintenance or preventive maintenance on a Guyana aircraft other than as prescribed in these Regulations.

(2) The operator of a Guyana aircraft shall be responsible for maintaining such Guyana aircraft in an airworthy condition by ensuring that—

- (a) all maintenance tasks which are specified by the operator's aircraft maintenance program approved by the Authority, and any other maintenance tasks that may affect airworthiness are performed by an approved person or Approved Maintenance Organisation in a manner prescribed by the Authority;
- (b) any removal or replacement of any aeronautical product of such aircraft is conducted in such a manner and using such tools, equipment and materials as is specified by the manufacturer's Aircraft Maintenance Manual and where applicable, by the Operator's Maintenance Control Manual;
- (c) approved maintenance personnel make the appropriate entries in the aircraft maintenance records certifying for the satisfactory completion of each maintenance task that was required and that such task has been accomplished on such aircraft and that such aircraft is airworthy;
- (d) a Certificate of Release to Service is issued in accordance with regulation 35,

to certify that maintenance work performed has been completed satisfactorily and in accordance with the prescribed methods;

- (e) in the event that there are discrepancies which have not been corrected, the Certificate of Release to Service includes a list of the uncorrected maintenance items, referred to as deferred defects, and these items are made a part of the aircraft permanent record; and
- (f) a Certificate of Maintenance Review is issued in accordance with regulation 36, to certify that all inspections classified in the Approved Maintenance Programme and Airworthiness Directives of the State of Design and State of Manufacture, in respect of such aircraft and its associated aeronautical products have been accomplished as prescribed.

(3) Any failure to maintain an aircraft in an airworthy condition as prescribed by this regulation shall render the Guyana aircraft ineligible for flight until such time as it is restored to an airworthy condition and certified as airworthy by a person approved by the Authority to do so in compliance with these regulations.

Requirements
for Aircraft
Maintenance
Programme.

19. (1) An operator shall prepare and submit to the Authority for approval, an aircraft maintenance programme which shall include the applicable tasks, procedures, intervals, methods, and procedures, approved by the State of Design for the aircraft type.

(2) A maintenance programme under sub-regulation (1), shall include an aircraft maintenance manual, airworthiness limitations, mandatory replacement times, fatigue life limits, inspection intervals, corrosion prevention and control, supplemental structural inspection programmes or structural integrity programmes, ageing aircraft programmes, reliability programmes and maintenance review board report as applicable.

(3) The maintenance programme under sub-regulation (1), shall, where the Authority deems appropriate, be reviewed and updated in accordance with the reliability programme of the operator which shall take into consideration continuing airworthiness information promulgated by the manufacturer, the utilisation of the aircraft, the operator's particular maintenance and operating environment, and the experience of the operator.

(4) An operator shall not operate a Guyana aircraft for which a maintenance manual of the manufacturer, or instructions for continued airworthiness that contains an airworthiness limitation section has been issued unless the operator has complied with the following:

- (a) the mandatory replacement times, inspection intervals and related procedures specified in the airworthiness limitation section of the maintenance manual or instructions for airworthiness;
- (b) the methods, procedures and practices contained in the Operator's approved Maintenance Control Manual; and
- (c) the maintenance programme approved by the Authority under these

regulations.

Airworthiness
Directives
Procedures.

20. (1) When an aircraft is first issued with a Guyana Certificate of Registration, the Director General shall –

- (a) notify the State of Design of the model number, serial number, and registration of such aircraft in Guyana; and
- (b) request all airworthiness directives in respect of such aircraft or its associated aeronautical products and any information which the State of Design deems necessary for the continuing airworthiness and safe operation of the aircraft.

(2) Where a State of Design identifies a potentially unsafe condition with respect to an aircraft and issues an Airworthiness Directive designed to counter that unsafe condition the Authority shall notify the operator of that aircraft and shall ensure that the operator takes the appropriate action with respect to that aircraft.

(3) An operator shall not operate an aircraft that is subject to an Airworthiness Directive unless he is in compliance with the requirements of that Airworthiness Directive.

Authority to
issue a Special
Airworthiness
Directive.

21. (1) Where the Director General determines that an aeronautical product has exhibited an unsafe condition and such condition is likely to exist or to develop in other aeronautical products of the same type design, he shall, where an airworthiness directive has not been issued by the State of Design, issue a Special Airworthiness Directive prescribing such inspections or other maintenance action as the Director General deems necessary and the conditions and limitations, where any, under which such aeronautical products may

continue to be operated.

(2) Where the Director General issues a Special Airworthiness Directive in respect to an aircraft, he shall notify the State of Design of the circumstances of such issuance and the nature of the findings of any resulting inspection.

PART III NOISE CERTIFICATION

Applicability
of Part III.

22. This Part specifies the requirements for the issue of a validation certificate for a noise certificate (hereinafter referred to as a ‘noise validation certificate’) for the following aircraft where such aircraft are engaged in international air navigation:

- (a) all subsonic jet aeroplanes;
- (b) supersonic aeroplanes;
- (c) propeller driven aeroplanes with a maximum certified take-off mass exceeding 5,700 kgs;
- (d) propeller driven aeroplanes with a maximum certified take-off mass of 5,700 kgs or less; and
- (e) helicopters.

Standards of
Noise.

23. The noise certification standards applicable to an aircraft shall be those set out in ICAO Annex 16.

Restriction on
Operations
Without Noise
Validation
Certificate.

24. An operator shall not operate an aircraft to which these Regulations apply in Guyana unless there is in force in respect of the aircraft, a noise validation certificate —

- (a) validated by the Authority under regulation 25; or
- (b) issued or validated by the competent authority of the State of Registry of the aircraft on the basis of satisfactory evidence that the aircraft complies with requirements that are at least equal to the applicable Standards specified in ICAO Annex 16.

Requirements
for the Issue of
a Noise
Validation
Certificate.

25. (1) An operator of a Guyana aircraft to which these Regulations apply, who wishes to have a noise validation certificate issued for that aircraft, shall —

- (a) apply to the Authority;
- (b) pay the prescribed fee;
- (c) present evidence to the Director General that the aircraft complies with the applicable requirements of ICAO Annex 16;
- (d) submit the aircraft to such flying tests as the Director may require.

(2) Where the Director General is satisfied that the evidence presented by the applicant in support of an application for a noise validation certificate and the results of any flying tests required by the Director General, show that the aircraft complies with the requirements that are at least equal to the applicable standards specified in ICAO Annex 16 in relation to the noise made by that aircraft, he may issue a noise validation certificate.

Continued
Validity of a
Noise
Validation
Certificate.

26. (1) A noise validation certificate in respect of a Guyana aircraft shall be suspended or revoked —

- (a) where the aircraft ceases to comply with the applicable noise standards;
- (b) at such time as the aircraft or any part of it is modified, in any way which affects the ability of the aircraft to comply with the noise standards required by these Regulations, other than in a manner and with material of a type approved by the State of Design and accepted by the Authority, either generally or in relation to a class of aircraft or to a particular aircraft; or
- (c) until the completion of any inspection or test of the aircraft required by the Director General to be performed which shows that the aircraft complies with the noise standards required by these regulations.

(2) The holder of a noise validation certificate which is suspended, shall forthwith produce the noise validation certificate to the Authority for endorsement.

(3) The holder of a noise validation certificate which has been revoked by the Authority, shall within thirty (30) days from the date on which it was revoked, surrender such certificate to the Authority.

(4) Where a noise validation certificate is suspended or revoked, such suspension or revocation shall remain in force, and a new noise validation certificate shall not be granted unless the aircraft is found, on reassessment, to comply with

the applicable noise standards of ICAO Annex 16.

(5) In determining the continued validity of a noise validation certificate, the Director General may accept reports furnished to him by a person whom he approves as qualified and competent to make such reports either absolutely or subject to such conditions as he thinks fit.

Contents of a
Noise
Validation
Certificate.

27. (1) A noise validation certificate for an aircraft shall be in the form prescribed by the Director General and contain at least the following item numbers and headings:

- (a) Item 1. Guyana ;
- (b) Item 2. Noise Validation Certificate;
- (c) Item 3. Number of the document;
- (d) Item 4. Nationality or common mark and registration marks;
- (e) Item 5. Manufacturer and manufacturer's designation of aircraft;
- (f) Item 6. Aircraft serial number;
- (g) Item 7. Engine manufacturer, type and model;
- (h) Item 8. Propeller type and model for propeller driven aeroplanes;
- (i) Item 9. Maximum take-off mass in kilograms;
- (j) Item 10. Maximum landing mass, in kilograms, for certificates issued under

Chapters 2, 3, 4, 5, and 12 of ICAO Annex 16;

- (k) Item 11. The chapter and section of ICAO Annex 16 according to which the aircraft was certified;
- (l) Item 12. Additional modifications incorporated for the purpose of compliance with the applicable noise certification standards;
- (m) Item 13. The lateral or full-power noise level in the corresponding unit for documents issued under Chapters 2, 3, 4, 5 and 12 of ICAO Annex 16;
- (n) Item 14. The approach noise level in the corresponding unit for documents issued under Chapters 2, 3, 4, 5, 8 and 12 of ICAO Annex 16;
- (o) Item 15. The flyover noise level in the corresponding unit for documents issued under Chapters 2, 3, 4, 5 and 12 of ICAO Annex 16;
- (p) Item 16. The overflight noise level in the corresponding unit for documents issued under Chapters 6, 8 and 11 of ICAO Annex 16;
- (q) Item 17. The take-off noise level in the corresponding unit for documents issued under Chapters 8, and 10 of ICAO Annex 16;

- (r) Item 18. Statement of compliance, including a reference to Annex 16, Volume I;
- (s) Item 19. Date of issuance of the noise certification document; and
- (t) Item 20. Signature of the officer issuing it.

(2) Item headings on the noise validation certificate shall be uniformly numbered in Arabic numerals so that on any noise validation certificate the item number will, under any arrangement, refer to the same item heading.

PART IV AIRCRAFT MAINTENANCE AND INSPECTION

Applicability
of Part IV.

28. This Part prescribes the requirements for maintenance and inspection of a Guyana aircraft and its associated aeronautical products.

Persons
Authorised to
Perform
Maintenance
or Preventive
Maintenance
on non-
commercial
aircraft.

29. (1) A person shall not perform any task defined as maintenance, or preventive maintenance on a Guyana aircraft or its aeronautical products, unless such person is —

- (a) a pilot authorised by the Authority, limited to perform preventive maintenance on specified non-commercial small Guyana aircraft owned or operated by such pilot;
- (b) an Aircraft Maintenance Engineer, limited to perform maintenance, or preventive maintenance, on an aircraft or aeronautical product for which he holds

a licence; or

- (c) performing maintenance, or preventive maintenance under the supervision of an Aircraft Maintenance Engineer, authorised to perform such maintenance who—
 - (i) monitors and observes the work being done to the extent necessary to ensure that it is being done properly; and
 - (ii) is readily available in person for consultation;
- (d) an Approved Maintenance Organisation subject to the limitations of its Operations Specifications;
- (e) an air operator subject to the limitations of his Operations; or
- (f) a manufacturer holding an Approved Maintenance Organisation Certificate issued or accepted by the Authority may—
 - (i) rebuild or modify any aeronautical product manufactured by that manufacturer under a Type Certificate or Production Certificate;
 - (ii) rebuild or modify any aeronautical product

manufactured by that manufacturer under a Technical Standard Order Authorisation, a Parts Manufacturing Approved Standard in respect of material, parts, process or appliance issued by the State of Design; and

- (iii) where applicable, perform any inspection required by these Regulations on aircraft it manufactures, while currently operating under a Production Certificate or under a currently approved production inspection system for such aircraft.

(2) A person shall not perform maintenance, or preventive maintenance under sub-regulation (1), unless he has received, where applicable—:

- (a) basic aeronautical knowledge and skill training in the area of maintenance to be undertaken;
- (b) familiarisation training on the aeronautical product on which maintenance is to be undertaken;
- (c) training on company maintenance procedures and documentation;
- (d) training on aircraft maintenance practices and procedures;

- (e) continuing training on topics relevant to the operations; and
- (f) human factors training in the relevant aviation areas.

Persons
Authorised to
Perform
Maintenance
on commercial
aircraft.

30. A person, shall not perform any form of maintenance, required by the Act or Regulations made thereunder, for a Guyana aircraft or any of its aeronautical products operated in commercial service, unless such person is—

- (a) an Approved Maintenance Organisation, who may conduct the required maintenance subject to its Operations Specification;
- (b) an Air Operator, who may conduct the required maintenance subject to his Operations Specifications; or
- (c) a qualified person approved by the Authority and the operator to perform such inspection.

Persons
Authorised to
Perform
Inspections.

31. A person, shall not perform the inspections required by these Regulations for a Guyana aircraft and its aeronautical products prior to or after it has undergone any form of maintenance, unless such person is—

- (a) an Aircraft Maintenance Engineer, who may conduct the required inspection subject to the limitations of his licence;
- (b) an Approved Maintenance Organisation, who may conduct the required inspection subject to its Operations

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Specification;

- (c) an air operator, who may conduct the required inspection subject to his Operations Specifications; or
- (d) a qualified person approved by the Authority to perform such inspection.

Requirement
for the issue of
Certificate of
Release to
Service.

32. No person shall operate an aircraft after any form of maintenance has been performed on that aircraft or any aeronautical product forming a part of, or fitted to that aircraft, pursuant to Regulation 31, unless a Certificate of Release to Service for that aircraft has been issued in respect of that maintenance task by—

- (a) An Aircraft Maintenance Engineer holding a type rating for the aircraft and who performed, supervised, or inspected the maintenance of an aeronautical product subject to the limitations of his licence and rating;
- (b) an Aircraft Maintenance Organisation subject to the limitations of its Operations Specifications; or
- (c) an air operator subject to the limitations of its Operations Specifications.

Maintenance
Performance
Rules.

33. (1) A person authorised by these Regulations to perform maintenance under regulations 29 and 30, on an aeronautical product shall use the methods, techniques and practices prescribed in the current maintenance manual or instructions for continued airworthiness of the manufacturer.

(2) Notwithstanding the methods, techniques and practices specified in the current maintenance manual or instructions for continued airworthiness under sub-regulation (1), a person conducting maintenance on an aircraft shall comply with such methods, techniques and practices as are -

- (a) contained in the air operator's approved maintenance control manual; or
- (b) are prescribed by the Director General in accordance with approved equivalent engineering and safety standards,

(3) A person authorised by these Regulations to perform maintenance or preventive maintenance shall use the tools, equipment, and test apparatus specified by the manufacturer's maintenance manual, and approved by the Authority.

(4) Where the manufacturer recommends special equipment or test apparatus, the person approved to perform maintenance on such aeronautical product shall use such equipment or apparatus or equivalent equipment or apparatus that is acceptable to the Authority on such aeronautical product.

(5) A person authorised by these Regulations to perform maintenance on an aeronautical product which may or may not have been modified shall perform such work in such a manner and use materials of such a quality, that the condition of such aeronautical product upon which such work was performed shall be at least equal to its original or where modified to its modified standard, with regard to aerodynamic function, structural strength, resistance to vibration and deterioration and other qualities affecting airworthiness.

(6) The methods, techniques and practices contained in the Maintenance Control Manual of an air operator and maintenance programme as approved by the Authority will constitute an acceptable means of compliance with this Part.

(7) A person authorised to perform inspection or other maintenance specified in the limitations section of the current maintenance manual of the manufacturer or current instructions for continued airworthiness shall perform such inspection or other maintenance in accordance with that limitations section or in accordance with specifications acceptable to the Authority.

Requirements
for Inspections
Performance
Rules.

34. (1) Where a person authorised to perform inspections under these Regulations is required by the Act or Regulations made thereunder to perform an inspection on an aeronautical product he shall perform the inspection so as to determine whether the aeronautical product or portion thereof under inspection, meets all applicable airworthiness requirements.

(2) Where an inspection programme is required by the maintenance manual of a manufacturer for a specific aeronautical product being inspected under sub-regulation (1), the person conducting such inspection shall do so in accordance with the instructions and procedures set forth in the inspection programme.

(3) A person authorised to perform inspections under these Regulations, shall in performing such inspection on a rotorcraft shall conduct such inspections in accordance with the Maintenance Manual or Instructions for Continued Airworthiness of the manufacturer.

Requirement
for Annual
and One
Hundred-
Hour
Inspections
and use of a
Check-List.

35. (1) A person authorised to perform an annual or one hundred hour inspection under these Regulations shall use a check-list while performing such inspection.

(2) The check-list under sub-regulation (1), shall include the scope and detail of the required items acceptable to the Authority.

(3) A person authorised to perform inspections under these Regulations, before issuing a Certificate of Release to Service in respect of—

(a) a reciprocating-engine-powered aircraft;
or

(b) a turbine-engine-powered aircraft,
shall operate the aircraft engine or engines to determine satisfactory performance in accordance with the current recommendations of the aircraft manufacturer after an annual or one hundred-hour inspection.

Issue of
Certificate of
Release to
Service.

36. (1) Where a person authorised to perform inspections under these Regulations is satisfied that an aeronautical product which has undergone maintenance is airworthy and serviceable as required under these regulations, he shall issue a Certificate of Release to Service in respect of such aeronautical product.

(2) A person authorised to perform or to certify maintenance under these Regulations made thereunder, who finds that the aircraft is not airworthy, shall not issue a Certificate of Release to Service and shall provide the operator of the aeronautical product with a signed and dated list of the applicable discrepancies.

(3) A person shall not issue a Certificate of Release to Service for an aeronautical product under sub-regulation (2),

until all discrepancies identified in the listing have been addressed satisfactorily.

Certificate of
Maintenance
Review.

37. (1) A person shall not operate a Guyana aircraft in commercial service operations unless there is in force a Certificate of Maintenance Review in the form set out in Schedule 3 in respect of such aircraft.

(2) A Certificate of Maintenance Review shall be issued in respect of an aircraft where the following items have been accomplished as prescribes for such aircraft—

- (a) All inspections classified in the Approved Maintenance Programme;
- (b) all Airworthiness Directives of the State of Design and State of Manufacture;
- (c) Special Airworthiness Directives issued by the Authority; and
- (d) mandatory and alert service bulletins issued by the manufacturer,

have been accomplished as prescribed for such aircraft.

(3) A Certificate of Maintenance Review shall be valid for a period of six months from the date of issue where the requirements for the issue of a Certificate of Maintenance Review in sub-regulation (2) have been satisfied for—

- (a) an aeroplane or helicopter engaged in commercial air transport operations;
- (b) an aeroplane 5,700 kg. and more maximum certified take-off mass; or

- (c) a helicopter 3,175 kg. and more maximum certified take-off mass.

(4) A Certificate of Maintenance Review shall be issued by—

- (i) an operator approved by the Authority to carry out its own maintenance;
- (ii) an approved maintenance organisation designated by the operator;
- (iii) a type-rated aircraft maintenance engineer approved by the Authority to do so.

(5) An operator of a Guyana aircraft shall ensure that a valid Certificate of Maintenance Review is carried on board such aircraft during all civil aviation operations.

Required
Performance
Rules,
Certificate of
Release to
Service.

38. A person authorised to perform inspections under these Regulations shall not issue a Certificate of Release to Service for any aeronautical product under regulations 29 and 30 unless—

- (a) the appropriate maintenance record entry has been made;
- (b) the repair or modification form has been completed in the manner prescribed by the Authority;
- (c) the maintenance requirements, aircraft operating limitations or flight data contained in the approved Aircraft Flight Manual required to be revised as a result of a repair or modification are

appropriately revised;

- (d) he used up-to-date approved data company procedures as applicable, recommended and calibrated tools and test equipment and an appropriate environment to perform the inspections; and
- (e) the appropriate Release to Service check has been satisfactorily performed.

PART V MAINTENANCE RECORDS AND ENTRIES

Applicability
of Part V.

39. This Part prescribes the requirements for maintenance records and entries following maintenance, preventive maintenance, overhaul and modifications for aircraft and aero-nautical products.

Procedures for
major
modification
and major
repairs.

40. (1) No person shall perform, on an aeronautical product, a repair or a modification classified in Schedule 2 as a major repair or major modification unless that person is performing the said repair or modification using data approved by the State of Design and has received approval from the Authority, either directly through a once-only document, or generally through an approved procedure in that person's Maintenance Control Manual or his Operations Specifications, for that repair or modification.

(2) No person shall operate an aircraft on which a major repair or major modification has been accomplished, unless that major repair or major modification has been approved by the Authority and an entry has been made and certified in the Technical Logbook of the aircraft to that effect.

Content, Form,
and
Disposition of
Maintenance
Records.

41. (1) A person who is authorised under these Regulations to perform maintenance, preventive maintenance, rebuild an aircraft or aeronautical product shall, when the work is performed satisfactorily, make the following entry in the maintenance record of such aircraft or aeronautical product:

- (a) a description and reference to data acceptable to the Authority of the work performed;
- (b) the completion date of the work performed; and
- (c) the name, signature and licence or authorisation number and kind of licence or authorisation as applicable, held by such person.

(2) A person performing a major repair or major modification shall record the details of such major repair or major modifications in the form and manner prescribed by the Authority.

(3) A person working under the supervision of an Aircraft Maintenance Engineer shall not perform any inspection required by the Approved Aircraft Maintenance Programme, or any inspection performed after a major repair or modification.

Requirement
for Records of
Overhaul and
Rebuilding.

42. (1) A person shall not describe an aeronautical product as being overhauled in any Maintenance Record, unless such aeronautical product has been—

- (a) disassembled, cleaned, inspected as permitted, repaired as necessary and reassembled using methods, techniques

and practices acceptable to the Authority; and

- (b) 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.

(2) A person shall not describe an aeronautical product as being rebuilt in any maintenance record, 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.

Required
Content, Form,
and
Disposition of
Records for
Inspections.

43. (1) A person authorised to issue a Certificate of Release to Service under these Regulations, after performing an inspection on an aeronautical product shall enter in the maintenance record of such aeronautical product –

- (a) the type of inspection and a brief description of the extent of the inspection;
- (b) the date of the inspection and aircraft total time in service;
- (c) his name, signature, licence number and kind of licence where the Certificate of Release to Service is issued under the privileges of his licence;

- (d) his name, signature or stamp, authorisation number and approved Maintenance Organisation approval number where the Certificate of Release to Service is issued under the privileges of the approved Maintenance Organisation certificate; and
- (e) the inspection programme accomplished and a statement that the inspection was performed in accordance with the inspections and procedures for that particular programme where an inspection is conducted under an inspection programme provided for in the Act or Regulations made thereunder.

Part A
Schedule 3.

(2) Where the aeronautical product is found to be airworthy the person authorised to issue a Certificate of Release to Service under sub-regulation (1) shall append his signature in a statement set out in Part A of Schedule 3.

Part B
Schedule 3.

(3) Where the aircraft is not approved for return to service because of needed maintenance, non-compliance with applicable specifications, airworthiness directives or other approved data, the person performing the inspection shall append his signature on a statement set out in Part B of Schedule 3.

(4) A person authorised to perform an inspection required by these Regulations, who finds that the aircraft is not airworthy or does not meet the applicable type certificate data sheet, airworthiness directives or approved data requirements, upon which its airworthiness depends, shall give the aircraft operator a signed and dated list of those discrepancies and un-airworthy items.

Air Operator
to Comply
with
Implementing
Standards.
Schedule 3.

44. An air operator in meeting the requirements of Regulations 15, 18, 19, 29, 34, 36, 39, 40 and 41, shall ensure that he complies with the minimum standards set out in Schedule 3.

Director
General to
Amend
Schedules.

45. The Director General may by Order amend any of the Schedules.

Transitional
Provisions.

46. (1) The airworthiness requirements of all Guyana aircraft and aeronautical products under these Regulations shall come into effect three months from the date of publication of these Regulations.

(2) Notwithstanding the requirements of sub-regulation (1), a person who on the commencement of these Regulations holds a valid Airworthiness Certificate for an aircraft may continue to operate such aircraft under the conditions of his existing Airworthiness Certificate until January 1, 2017, and thereafter shall meet the requirements of these Regulations.

SCHEDULE 1

(Regulation 9)

The following established international airworthiness codes meet the minimum international civil aviation requirements for giving effect to Annex 8 of the Chicago Convention in respect of the minimum standards relating to the airworthiness requirements of these Regulations as applicable:

- (a) Federal Aviation Regulations of the United States of America;
- (b) Transport Canada Regulations; and
- (c) European Aviation Safety Agency Regulations.

SCHEDULE 2

(Regulation 40)

**MAJOR MODIFICATIONS
(DEFINITIONS)**

- (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 center 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) **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) **Airframe 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.

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, or their replacement when the replacement procedure 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;

SCHEDULE 3

(Regulation 41)

PART A

“I..... (insert name) certify that this aeronautical product has been inspected in accordance with..... (insert type) inspection and such aeronautical product was determined to be in an airworthy condition.

.....
Signature

.....
Date

PART B

“I..... (insert name) certify that this aeronautical product was inspected in accordance with (insert type) inspection and a list of (insert quantity) discrepancies and un-airworthy items have been provided to the aircraft operator. Such aircraft shall not be released to service unless all discrepancies and un-airworthy items identified on that list have been addressed in accordance with the approved airworthiness requirements.

.....
Signature

.....
Date

SCHEDULE 3

(Regulation 42)

IMPLEMENTING STANDARDS

The following standards are numbered to correspond numerically with the relevant provisions in the Regulations.

Regulation 15

The categories of operation under Regulation 15 and the related purposes for which the aircraft may fly are as outlined in the following Table:

TABLE

Category of Operation	Purpose
Transport Category (Passengers)	Any Purpose
Transport Category (Cargo)	Any purpose other than public transport of passengers
Aerial Work Category	Any purpose other than public transport
General Category	Any purpose other than public transport or aerial work

Regulation 18

The following provisions set out the minimum standards for the continued airworthiness of aircraft and components:

- (a) inspections classified as mandatory include but are not limited to duplicate inspections. A duplicate inspection is

an inspection first made and certified by one person authorised under the Regulations and subsequently made and certified by a second person authorised under the Regulations. It shall be conducted following initial assembly or any disturbance of a Control System. A control system is a system by which the flight path, attitude, or propulsive force of an aircraft is changed, including the flight controls, engine and propeller controls, the related system controls, the associated operating mechanisms and control surfaces;

- (b) duplicate inspections are also applicable to any defined point of the aircraft at any point where a single mal-assembly could lead to an accident or serious incident;
- (c) a duplicate inspection of all Vital Points and Control Systems in an aircraft shall be made after initial assembly and before a Certificate of Release to Service has been issued after overhaul, repair, replacement, modification or adjustment and, in any case, before the first flight;
- (d) the first and second inspections of a duplicate inspection must take account of the full extent of the work undertaken and not simply the immediate area of disturbance. This is to ensure that distant or remote parts of the system that may have been affected by the disturbance are also subject to duplicate inspections. Where work has been carried out on other systems for safety precautions, or to enhance accessibility, the need to carry out a duplicate inspection on these systems shall be considered. Persons who carry out and certify duplicate inspections are therefore required to undertake an independent review of the complete task, as detailed in the maintenance manual and by reference to worksheets used, including shift hand-over records, to assess the scope of the duplicate inspection(s) required;

- (e) it may not be possible to inspect the complete Vital Point or Control System when assembled in the aircraft, due to routing the controls through conduits or boxed-in sections and the pre- sealing of various units. In these cases the persons certifying the duplicate inspection shall be satisfied that a duplicate inspection has been made previously on the units and covered sections and that the sealed units are acceptable for the particular use. Such tests as are necessary shall be completed to determine that these particular units and sections have full, free and correct directional movement;
- (f) vital Point or Control Systems subject to duplicate inspection must not be disturbed or re-adjusted after the first certified inspection and the second part of the duplicate inspection must, as nearly as possible, follow immediately after the first part;
- (g) if a Vital Point or Control System is disturbed after completion of the duplicate inspection, that part which has been disturbed shall again be inspected in duplicate and a Certificate of Release to Service issued before the aircraft flies;
- (h) the duplicate inspection shall be the final operation to establish the integrity of the Vital Point or Control System when all the work has been completed and shall take into account all the relevant instructions and information contained in the associated technical data;
- (i) the inspections prescribed here shall include an inspection to ensure that full, free and correct movement of the controls is obtained throughout the systems relative to the movements of the crew controls. An additional inspection shall be made, when all covers and fairings are finally secured, to ensure that full, free and correct movement of the controls is obtained;

- (j) persons qualified to make the first and second part of a duplicate inspection are as follows:
 - (i) appropriately licensed aircraft engineers;
 - (ii) persons employed by approved Organisations, who are appropriately authorised to make such inspections and to certify the task itself in accordance with company procedures;
- (k) should a minor adjustment of the Vital Point or Control System be necessary when the aircraft is away from base, the second part of the duplicate inspection may be completed by a pilot or flight engineer licensed for the type of aircraft concerned, providing that Authorisation is granted by the responsible Approved Maintenance Organisation, if the aircraft is being used for the purpose of Commercial Air Transport;
- (l) where appropriate to the type of unit or component forming part of a Control System, a schedule of inspections and functioning tests shall be compiled at manufacture, overhaul and repair, and the following shall be certified:
 - (i) duplicate inspection of the section/parts of the units or components which will be concealed during bench assembly and which cannot be proved during inspections and functioning tests when installed in the aircraft Control System;
 - (ii) duplicate inspection of the completed assembly of the unit or component, functioning and checking for correct relative movement; and

- (m) persons qualified to make the first and second part of the duplicate inspection required units or components are as follows:
 - (i) for Approved Manufacturing Organisations, persons employed who are appropriately authorised and qualified to make such inspections in accordance with company procedures. Persons employed by a sub-contracting firm, not directly approved by Authority, who are appropriately authorised by the primary Approved Organisation with a Quality Control Surveillance System controlling the subcontractor, qualified to make such inspections; and
 - (ii) for Approved Maintenance Organisations who release Control System units and components, both inspections and the subsequent Certificates of Release to Service must be issued by persons authorised by the Maintenance Organisation approved under the Act or Regulations made thereunder.

Regulation 19

An Aircraft Maintenance Programme under regulation 19 shall meet the following minimum standards:

- (a) a reliability programme shall be part of an Aircraft Maintenance Programme and shall be required when specified by the Manufacturer's Maintenance Planning Document or a Maintenance Review Board Report or as specified below. Operators may, however, develop their own reliability monitoring programme which shall be

approved by the Authority when it may be deemed beneficial from a maintenance planning point of view;

(b) reliability programmes general—

- (i) an operator shall ensure the airworthiness of the aero- plane and the serviceability of both operational and emergency equipment by performing all maintenance to an approved maintenance programme;
- (ii) an operator should have a system to analyse the effectiveness of the maintenance programme with regard to spares, established defects, malfunctions and damage, and to amend the maintenance programme (this amendment will involve the approval of the Authority);
- (iii) the maintenance programme will be required to include reliability programme when the authority determines that such a reliability programme is necessary;
- (iv) where an operator wishes to use an aeroplane with the initial operator's aeroplane maintenance programme based upon the maintenance review board report process, any associated programme for the continuous surveillance of the reliability, or health monitoring of the aeroplane should be considered as part of the aeroplane maintenance programme; and
- (v) some approved operator's aeroplane maintenance programmes, not developed from the maintenance review board process, utilise

reliability programmes. Such reliability programmes should be considered as a part of the approved maintenance programme;

- (c) reliability programmes—
- (i) should be developed for aeroplane maintenance programmes based upon Maintenance Steering Group logic or those that include condition monitored components or that do not contain overhaul time periods for all significant system components;
 - (ii) need not be developed for aeroplane maintenance programmes of aeroplanes of five thousand seven hundred kilograms and below or that do contain overhaul time periods for all significant system components; and
 - (iii) form one important method of updating approved maintenance programmes;
- (d) a reliability programme is required in the following cases:
- (i) the aeroplane maintenance programme is based upon Maintenance Steering Group—3 logic;
 - (ii) the aeroplane maintenance programme includes condition monitored components; and
 - (iii) the aeroplane maintenance programme does not contain overhaul time periods for all significant system components when specified by the Manufacturer's maintenance planning document or Maintenance Review Board;

- (e) a reliability Programme is not required in the following cases:
- (i) the maintenance programme is based upon the Maintenance Steering Group—1 or 2 logic but only contains hard time or on condition items;
 - (ii) the aeroplane maximum take-off mass is five thousand seven hundred kilogrammes or below; and
 - (iii) the aircraft maintenance programme provides overhaul time periods for all significant system components;
- (f) application to operators of small fleets of less than six (6) aircraft of the same type—
- (i) the requirement for a reliability programme is irrespective of the operator's fleet size;
 - (ii) complex reliability programmes could be inappropriate for a small fleet and is recommended that such operators tailor their Reliability Programmes to suit the size and complexity of operation;
 - (iii) one difficulty with a small fleet of aircraft is the amount of available data which can be processed when this amount is too low, the calculation of alert level is very coarse. Therefore 'alert levels' should be used carefully;

- (iv) an operator of a small fleet of aircraft, when establishing a reliability programme, should consider the following:
- A. the programme should focus on areas where a sufficient amount of data is likely to be processed;
 - B. when the amount of available data is very limited, the engineering judgment of the operator is then a vital element;
 - C. careful engineering analysis should be exercised before taking decisions in the following circumstances:
 - (I) A „0“ rate in the statistical calculation may possibly simply reveal that enough statistical data is missing, rather than there is no potential problem;
 - (II) when alert levels are used, a single event may have the figures reach the alert level. Engineering judgment is necessary so as to discriminate an artifact from an actual need for a corrective action;
 - (III) in making his engineering judgment, an operator is encouraged to establish contact and make comparisons with other operators of the same aircraft, where possible

and relevant. Making comparison with data provided by the Manufacturer may also be possible;

(IV) in order to obtain accurate reliability data, it should be recommended to pool data and analysis with one or more other operators;

D. notwithstanding the above there are cases where the operator will be unable to pool data with other operators, e.g., at the introduction to service of a new type. In that case the Authority should impose additional restrictions on the Maintenance Review Board or Maintenance Planning Document tasks intervals (e.g., no variations or only minor evolution are possible, and with the Authority approval);

(v) pooling arrangements—

A. in some cases, in order that sufficient data may be analysed it may be desirable to, ‘pool’ data: i.e., collate data from a number of operators of the same type of aircraft. For the analysis to be valid, the aircraft concerned, mode of operation, and maintenance procedures applied must be substantially the same; variations in utilisation between two operators may more than anything, fundamentally corrupt the analysis. Although not

exhaustive, the following list gives guidance on the primary factors which need to be taken into account:

- (I) certification factors, such as: aircraft Type Certificate Data Sheet, compliance modification status, including Service Bulletin compliance;
- (II) operational factors, such as: operational environment, utilisation, for example, low, high, and seasonal, respective fleet size operating rules applicable, for example, extended range operations, reduced vertical separation minimum and weather operations, operating procedures, Minimum Equipment List and Minimum Equipment List utilisation;
- (III) maintenance factors, such as: aircraft age maintenance procedures; maintenance standards applicable; lubrication procedures and programme; Maintenance Planning Document revision or escalation applied or maintenance programme applicable;

B. although it may not be necessary for all of the foregoing to be completely

common, it is necessary for a substantial amount of commonality to prevail. Decision should be taken by the Authority on a case by case basis;

- C. in case of a short term lease agreement (less than six (6) months) more flexibility against the above criteria may be granted by the Authority, so as to allow the operator to operate the aircraft under the same programme during the lease agreement effectively;
- D. changes by any one of the operators to the above requires assessment in order that the pooling benefits can be maintained. Where an operator wishes to pool data in this way, the approval of the Authority should be sought prior to any formal agreement being signed between operators;
- E. whereas it is intended to address the pooling of data directly between operators, it is acceptable that the operator participates in a reliability programme managed by the aircraft manufacturer, when the Authority is satisfied that the manufacturer manages a reliability programme which complies with the intent of this leaflet;

(vi) engineering judgement—

- A. engineering judgement is itself inherent to Reliability Programmes as

no interpretation of data is possible without judgement. In approving the Operator's Maintenance and reliability programmes, the Authority is expected to ensure that the organisation which runs the programme (it may be the operator, or an Approved Maintenance Organisation under contract) hires sufficiently qualified personnel with appropriate engineering experience and understanding of reliability concept;

- B.* it follows that failure to provide appropriately qualified personnel for the reliability programme may lead the Authority to reject the approval of the reliability programme and therefore the aircraft maintenance programme;

(g) reliability programme elements—

(i) objectives—

a statement should be included summarising as precisely as possible the prime objectives of the Programme. The extent of the objectives should be directly related to the scope of the Programme, which could vary from a component defect monitoring system to an integrated maintenance management programme. The manufacturer's maintenance planning documents may give guidance on the objectives and should be consulted in every case;

- (ii) identification of items—

the Items controlled by the Programme should be stated. Where some items (e.g., aircraft structure, engines, Auxiliary Power Unit) are controlled by separate inspection and development procedures, the associated procedures will be subject to individual approval by the Authority, e.g., individual Sampling or Life Development Programmes, Constructor's Structure Sampling Programmes. In the case of the Civil Aviation Air Operator Certification and Administration Regulations approved programme, these supplemental documents shall form part of the approved maintenance control manual or maintenance organisation procedures manual as appropriate and should be cross referenced in the programme—

- (iii) terms and definitions: the significant terms and definitions applicable to the Programme should be clearly identified. Terms already defined in the World Airlines Technical Glossary of Terms and other industry standards should be used. The number of other defined terms should be kept to a minimum;

- (iv) information sources and collection—
 - A. sources of information should be listed, and the procedures for the transmission of information from the sources, together with the procedure for collecting and receiving it, should be set out in detail. In the case of the Civil Aviation Air Operator Certification and Administration

Regulations approval, these procedures should be listed in the maintenance control manual or maintenance organisation procedures manual as appropriate;

B. the type of information to be collected should be related to the objectives of the Programme and should be such that it enables both an overall broad based assessment of the information to be made and also allows for assessments to be made as to whether any reaction, both to trends and to individual events, is necessary. The following are examples of the normal prime sources:

- (I) pilots reports;
- (II) technical logs;
- (III) aircraft maintenance access terminal/on-board;
- (IV) maintenance system readouts;
- (V) maintenance worksheets;
- (VI) workshop reports;
- (VII) reports on functional checks;
- (VIII) reports on special inspections;
- (IX) stores issues/reports;

- (X) air safety reports; and
 - (XI) reports on technical delays;
- C. in addition to the normal prime sources of information, due account should be taken of continuing airworthiness and safety information promulgated by Airworthiness Authorities, Constructors and Manufacturers;
- (v) displays—
- A. collected information may be displayed in either graphical or tabular presentations or a combination of both. The rules governing any separation or discarding of information prior to incorporation into these displays should be stated. The format of any display should be such that the identification of trends, specific highlights and related matters arising would be readily apparent;
 - B. displays should include provisions for ,nil returns‘ to aid the examination of the total information;
 - C. where ,standards‘ or ,alert levels‘ are included in the Programme, the display information should be oriented accordingly;
- (vi) examination, analysis and interpretation of information—

- A. examination—
- (I) methods of examination of information may be varied according to the content and quantity of information of individual Programmes. These can range from examination of the initial indication of performance variations to formalised detailed procedures at specified periods and the methods should be fully described in the Programme documentation;
 - (II) the procedures for analysis and interpretation of information should be such as to enable the performance of the items controlled by the Programme to be measured. They should also facilitate recognition, diagnosis and recording of significant problems. The whole process should be such as to enable a critical assessment to be made of the effectiveness of the Programme as a total activity. Such a process may involve—
 - (aa) comparisons of operational reliability with

- established or allocated standards (in the initial period these could be obtained from in-service experience of similar equipment or aircraft types);
- (bb) analysis and interpretation of trends;
 - (cc) the evaluation of repetitive defects;
 - (dd) confidence testing of expected and achieved results;
 - (ee) studies of life-bands and survival characteristics;
 - (ff) reliability predictions;
 - (gg) other methods of assessment;
- (III) the range and depth of engineering analysis and interpretation should be related to the particular Programme and to the facilities available. The

following, at least, should be taken into account:

- (aa) flight defects and reductions in operational reliability;
- (bb) defects occurring on-line and at main base;
- (cc) deterioration observed during
- (dd) workshop and overhaul facility findings;
- (ee) modification evaluations;
- (ff) sampling programmes;
- (gg) the adequacy of maintenance equipment and publications;
- (hh) the effectiveness of maintenance procedures;
- (ii) staff training;
- (jj) service bulletins, technical instructions, etc.;

- B. where the Operator relies upon contracted maintenance and overhaul facilities as input to the Programme, the arrangements for availability and continuity of such information should be established and details should be included;
- (vii) corrective actions—
- A. the procedures and time scales both for implementing corrective actions and for monitoring the effects of corrective actions should be fully described. Corrective actions should correct any reduction in reliability revealed by the programme and could take the form of—
 - (I) changes to operational procedures or techniques;
 - (II) maintenance changes involving inspection frequency and content, function checks, overhaul requirements and time limits, which will require amendment of the scheduled maintenance periods or tasks in the approved Programme;
 - (III) amendments to Approved manuals (e.g., Maintenance Manual, Crew Manual);

- (IV) initiation of modifications;
 - (V) special inspections or fleet campaigns;
 - (VI) spares provisioning;
 - (VII) staff training; and
 - (VIII) manpower and equipment planning;
- B.* the procedures for effecting changes to the Programme should be described, and the associated documentation should include a planned completion date for each corrective action, where applicable;
- (viii) organisational responsibilities — the organisational structure and the departments responsible for the administration of the Programme should be stated. The chains of responsibility for individuals and departments (Engineering Production, Quality Control, Operations, etc.) in respect of the Programme, together with the formation and functions of any Programme control committees, should be defined. This information should be contained in the Maintenance Control Manual as appropriate;
- (ix) presentation of information to the Authority—
- A.* the production of reports and the notification of Programme events to the Authority will have to be agreed

with the Authority. As the information to be supplied to the Authority will vary for individual Programmes, the Programme and its associated documentation should define at least the following:

- B.* the format and content of routine and event reports;
- C.* the time scales for the production of reports together with their distribution;
- D.* details of any special reports (Annual Re-ports, special investigations, etc.);
- E.* reports supporting requests for increases in periods between maintenance (escalation) and for amendments to the Programme. These reports should contain sufficient detailed information to enable the Authority to make its own evaluation where necessary;
- F.* the production and distribution of agenda and minutes of various meetings related to the Programme and its functions;
- G.* the identification of the availability of any non-reportable information which may be used to support the Programme (e.g., 'in-house' information);

- H. any relationship between the reporting procedures of the Programme and the requirements for Mandatory Occurrence Reporting;
- (x) evaluation and review:
- A. each programme should describe the procedures and individual responsibilities in respect of continuous monitoring of the effectiveness of the Programme as a whole. The time periods and the procedures for both routine and non-routine reviews of maintenance control should be detailed (progressive, monthly, quarterly, or annual reviews, procedures following reliability, standards' or, alert levels' being exceeded, etc.);
 - B. each programme should contain procedures for monitoring and, as necessary, revising the reliability, standards' or, alert levels'. The organisational responsibilities for monitoring and revising the, standards' should be specified together with associated time scales;
 - C. although not exhaustive, the following list gives guidance on the criteria to be taken into account during the review:
 - (I) utilisation;
 - (II) fleet commonality;

- (III) alert level adjustment criteria;
 - (IV) adequacy of data;
 - (V) reliability procedure audit;
 - (VI) staff training; and
 - (VII) operating and maintenance procedures;
- (xi) condition monitored maintenance is not acceptable as the primary maintenance process for any items, the failure of which can produce—
- A. a hazardous increase in crew work load;
 - B. degradation of flight qualities, performance or strength of the aircraft;
 - C. fire; or
 - D. the necessity for an unscheduled landing, marginal conditions for occupants or injury to occupants;
- (xii) operator derived reliability programmes—
- A. operators who select to submit for approval a reliability centred maintenance programme, even though the Type Certificate holder may not require it, must include in the programme a classification listing

which will indicate the importance of each item to continued airworthiness of the aircraft in the event of failure of the item so classified. Normally, this classification is applied after consultation between the Operator, Constructor and the Authority, but, alternatively, due account may be taken of Maintenance Review Board (MRB) findings and Maintenance Steering Group (MSG) logic analysis in arriving at the appropriate classification;

- B.* classifications should be as follows:
- (I) items, the failure of which, would reduce the airworthiness of the aircraft to an unacceptable level. The reliability of such items will be controlled by the allocation of an overhaul period and/or Failure Rate Monitoring;
 - (II) items, the failure of which, would reduce the airworthiness of the aircraft but not to an unacceptable level. Such items will be controlled by Failure Rate Monitoring. Where it is known that an item is subject to wear or deterioration, the allocation of an overhaul period may be necessary;

- (III) items, the single failure of which does not affect the airworthiness of the aircraft;
- (h) an operator shall where the Authority requests make available the Maintenance Programmes and all associated airworthiness data, including that data used for the substantiation of escalation programmes shall be made available to the Authority upon request;
- (i) a maintenance programme submitted for approval shall contain the following information:
 - (i) reference number, issue number and date;
 - (ii) registered name and address of the owner or operator;
 - (iii) type and model of aircraft, engines, auxiliary power- units, and, where applicable, propellers;
 - (iv) areas of operation of the aircraft;
 - (v) class of work in relation to the areas of operation;
 - (vi) registration marks of aircraft maintained in accordance with the programme;
 - (vii) details of any arrangements involving the cooperation of more than one operator, or which involve the combination of information from other aircraft fleets for the purpose of providing additional statistical and sampling material;

- (j) primary maintenance processes:
- In respect of each part of the aircraft, its engines and auxiliary power-units, propellers, components, accessories, equipment, instruments, electrical and radio apparatus, and all associated systems and installations (hereinafter referred to as ‘an Item’), a list of the primary maintenance processes in terms of—
- (i) cross reference, where applicable, to the source of the task, e.g., Maintenance Review Board Report and Maintenance Planning Document;
 - (ii) periods at which the item shall be inspected, together with the type and degree of inspection;
 - (iii) periods at which the item shall, as appropriate, be checked, cleaned, lubricated, adjusted and tested;
 - (iv) periods at which the item shall be overhauled or replaced by a new or overhauled item, expressed in terms of—
 - A. a criterion related to usage, e.g., a period of time, number of cycles, number of landings;
 - B. criterion related to conditions, e.g., limits of wear, limiting dimensions;
 - (v) the mandatory life limitations to which certain parts of aircraft, engines, propellers, auxiliary power units and systems, the failure of which could have a hazardous effect on the aircraft, are subject. The limitations may be itemised in

- the programme, or included by reference to the appropriate airworthiness data;
- (vi) processes other than the primary Maintenance Programme as agreed by the Authority, which may include—
 - A. condition monitoring;
 - B. optional maintenance processes;
 - C. operator required supplemental inspections;
 - D. recommended from service bulletins or other service information;
 - E. passenger entertainment or aircraft appearance tasks;
 - (vii) a record of the amendments incorporated in the programme;
 - (viii) reference to the source of the content of the programme, e.g., Maintenance Review Board, Maintenance Planning Document and Maintenance Manual;
- (ix) criteria for ‘packaging’ checks (e.g., A Check—400FH, B Check—800 FH, etc.);
- (k) maintenance programmes—engines and auxiliary power units— A reliability centred maintenance and condition monitored maintenance programme for an engine or auxiliary power unit is required when the restoration task for the engine or auxiliary power unit is not defined as either a Hot Section Inspection (HSI) and/or overhaul in

accordance with the constructor's approved engine overhaul manual;

(i) *approval:*

Engine or Auxiliary Power Unit Programmes should form part of the associated aircraft Programme. These procedures provide guidance on elements to be followed to obtain Authority approval of Programmes, and amendments to them;

(ii) *programme elements:*

A. *Introduction*

An Engine or Auxiliary Power Unit Reliability Centred Maintenance and Condition Monitored Maintenance Programme provides for the integration of Reliability Analysis, Hard Time Control, On Condition and Condition Monitoring into one Programme. It may vary in size and scope depending on the complexity and number of different engine and Auxiliary Power Unit types being controlled by the Programme. The Programme sets out the means to identify both on-wing and off-wing maintenance tasks. On-wing engine or Auxiliary Power Unit maintenance tasks and their intervals are initially established by means of threshold and opportunity samples, Constructor's Engine Maintenance Planning Guides and the inspection requirements of the Engine Manuals. The on-wing and off-wing maintenance tasks and intervals

may be changed as a result of reviewing the experience gained by operating the Programme and information provided in Service Bulletins, Manual Revisions, Service Letters, Airworthiness Directives and other relevant sources.

B. Objectives

A statement should be included summarising the objectives of the Programme, together with a definition of the engines or Auxiliary Power Unit types controlled by the Programme and the associated aircraft in which those engine or Auxiliary Power Unit types are installed.

C. Identification

The engine or Auxiliary Power Unit Programme document can be unique and separate from the associated aircraft Programme or it can form part of the aircraft Programme. If it is a separate document, it should be identified by a reference number, issue number and date and be cross referred from the appropriate part of the aircraft Programme.

D. Data Pooling Arrangements

The primary factors which, where appropriate, should be taken into account for engines and Auxiliary Power Units are dealt with under Reliability Programmes General.

E. Sub-Contracting

It is permissible for the operator to enter into a subcontract arrangement with an organisation which has the necessary resources and experience on the engine or Auxiliary Power Unit type, to manage the Programme, and is acceptable to the Authority. However, this sub-contract arrangement does not absolve the Operator from the overall responsibility for ensuring the safe operation and continuing airworthiness of the aircraft to which the engine or Auxiliary Power Unit is installed.

F. Data Collection, Analysis and Interpretation

The data required for analysis and control of the engine or Auxiliary Power Unit Programme together with associated procedures for the collection analysis and interpretation of the data should be defined in the Programme. In the case of an approval under Civil Aviation Air Operator Certification and Administration Regulations these procedures should be listed in the Maintenance Control Manual or Maintenance Organisation Procedures Manuals, appropriate. The following is typical of the data which should be collected for an engine or Auxiliary Power Unit Programme:

- (I) oil consumption trend monitoring;
- (II) pilots reports;
- (III) aircraft maintenance access terminal/on-board maintenance system readouts;
- (IV) boroscope inspection findings;
- (V) magnetic chip detector findings;
- (VI) in flight shut down, abandoned take-off, unscheduled removal rates and causes;
- (VII) delay and cancellation rates and causes;
- (VIII) performance trend analysis;
- (IX) engine and auxiliary power unit removal reports;
- (X) airworthiness directives, manufacturer's information and publications, e.g., service bulletins, service letters, all operator wires, etc.;
- (XI) engine or auxiliary power unit and component workshop strip and condition reports;

(XII) vibration monitoring;

(XIII) sampling programme findings;

(XIV) reliability programme (statistical displays);

G. the final list of data to be collected, analysed and interpreted should be related to the objectives of the Programme and experience of operating the particular engine or Auxiliary Power unit type.

H. *Sampling programme*

The Programme should define a threshold life at which a sample engine/module or Auxiliary Power Unit should be scheduled for removal if sufficient data regarding engine or module or Auxiliary Power Unit internal conditions has not been generated by previous scheduled or unscheduled removals. Subsequent requirements should be based upon a review of all applicable evidence, e.g., defect investigations, workshop investigations, health monitoring data and evidence from other operators.

I. *Technical recording of life limited components*

The programme should give details of the method used and organisational responsibilities for recording flying hours, engine or auxiliary power unit

cycles, training, touch and go landings etc. which are needed to show compliance with the mandatory life limitations of the engine or Auxiliary Power Unit and for controlling ‘hard’ and ‘soft’ time intervals;

- J. Refurbish and rework specifications*
Every engine, module and Auxiliary Power Unit whose restoration task is not defined as either a HSI or Overhaul in accordance with an appropriate Overhaul Manual (Engine Manual) should have a rework or refurbish specification established in accordance with the procedures defined in the Programme. The Specification should define the minimum modification standard and the degree of strip inspection and rework necessary to release an engine, module or Auxiliary Power Unit for specified periods of service usage. The content of the Specification should be based upon the appropriate Constructor’s Maintenance Planning Guides, threshold and opportunity samples, the inspection requirements of the engine manuals and the review and analysis of the data collected by the programme.
- K. Repair and overhaul organisations*
The Programme should define the nominated Approved Maintenance Organisation or engine and Auxiliary Power Unit repair and overhaul

Organisations which are to be used, together with any contractual instructions to which the Organisations will be required to work. In the case of a Programme under Civil Aviation Air Operator Certification and Administration Regulations, this information should be contained in the Maintenance Control manual or Maintenance Organisation Procedures Manual, as appropriate.

L. Corrective actions

The Programme should define the means by which the collected data is routinely analysed and interpreted in order to monitor the effectiveness of the current on-wing and off-wing maintenance tasks and airworthiness of the fleet and so identify the need for any remedial action and appropriate time-scales. The procedure for changing or escalating any of the on and off-wing tasks, inspections and time intervals should also be defined in the programme.

(iii) Organisational responsibilities

The organisational structure of the Operator and where appropriate the sub-contracted maintenance, repair and overhaul Organisations responsible for the administration and control of the Programme should be defined. The responsibilities for decision making with respect to both the on-wing and off-wing elements of the Programme

shall be clearly defined in the Programme. In the case of the Civil Aviation Air Operator Certification and Administration Regulations Programme, this information should be contained in the Maintenance Control Manual or Maintenance Organisation Procedures Manual as appropriate.

(iv) *Management evaluation and review*

The Programme should be managed effectively and ensure that good communications prevail between the various technical and quality departments of the Operator and if appropriate, the subcontracted maintenance, engine and Auxiliary Power Unit repair and overhaul Organisations. The Programme should define how the review, agreement, co-ordination and communication are ensured in the following areas:

A. *Contractual arrangements*

Where the Operator sub-contracts any of the on-wing or off-wing engine or Auxiliary Power Unit maintenance, repair and overhaul, the Civil Aviation (Air Operator Certification and Administration) Regulations Programme requires the details of the arrangements for maintenance, repair and overhaul to be clearly defined in a written maintenance contract. This is necessary to ensure that the technical and quality personnel of all the sub-contract Organisations which are involved in the application of the contract have a common understanding of the technical

requirements of the Programme and of their respective duties and responsibilities.

B. Engine auxiliary power unit work scopes

Each engine, module and Auxiliary Power Unit upon removal from an aircraft, should have an individual work scope prepared. The work scope should detail the reason for removal, engine or Auxiliary Power Unit hours and cycles accrued in service, list any outstanding defects and define the required work to be carried out during the shop visit, cross referring, where appropriate, to the refurbish specification. The content of the work scope should also reflect any corrective actions which the Programme has previously identified as needing to be carried out at this visit. Where sub-contract arrangements exist, the content of the work scope should be agreed by the Operator and the sub-contract maintenance, engine repair and overhaul Organisation as appropriate.

C. Rework and refurbish specification

Regular liaison between the technical and quality personnel of the Operator and where appropriate, the subcontract maintenance, engine or Auxiliary Power Unit repair and overhaul Organisation should take place to review, and update the content of the engine, module and Auxiliary

Power Unit re-work and refurbish specifications. The review should be based upon the results of the analysis conducted upon the data collected in accordance with these procedures.

(v) *Technical and quality review:*

It is necessary for the Operator and where appropriate the subcontracted maintenance, engine repair and overhaul Organisations to periodically review all of the data inputs and reliability analysis defined in the Programme together with any adverse quality audit findings and action taken. The review should seek to adjust 'alert levels', identify trends, address any reduction in reliability or increase of in-flight shut down rate, delays, and cancellations and so implement any necessary remedial action.

(vi) *Management overview:*

Every Programme should have a controlling body which is responsible for the implementation, decision making and overall running of the Programme. Management at a senior level (Quality manager, Engineering Manager, etc.) should periodically review the effectiveness of the Programme, and where necessary, implement changes.

(vii) *Changes to the programme:*

Any significant changes to the Programme will require approval of the Authority.

Regulation 29

Preventive maintenance under regulation 29 is limited to the following work, provided it does not involve complex assembly operations:

- (a) removal, installation and repair of landing gear tyres;
- (b) replacing elastic shock absorber cords on landing gear;
- (c) servicing landing gear shock struts by adding oil, air, or both; servicing landing gear wheel bearings, such as cleaning and greasing;
- (d) replacing defective safety wiring or cotter keys;
- (e) lubrication not requiring disassembly other than removal of non- structural items such as cover plates, cowlings, and fairings;
- (f) making simple fabric patches not requiring rib stitching or the removal of structural parts or control surfaces;
- (g) replenishing hydraulic fluid in the hydraulic reservoir;
- (h) 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;
- (i) 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;

- (j) 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;
- (k) 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;
- (l) replacing side windows where that work does not interfere with the structure of any operating system such as controls, electrical equipment, etc;
- (m) replacing seats or seat parts with replacement parts approved for the aircraft, not involving disassembly of any primary structure or operating system;
- (n) troubleshooting and repairing broken circuits in landing light wiring circuits;
- (o) replacing bulbs, reflectors, and lenses of position and landing lights;
- (p) replacing wheels and skis where no weight and balance computation is involved;
- (q) replacing any cowling not requiring removal of the propeller or disconnection of flight controls;
- (r) replacing or cleaning spark plugs and setting of spark plug gap clearance;
- (s) replacing any hose connection except hydraulic connections;

- (t) replacing prefabricated fuel lines;
- (u) cleaning fuel and oil strainers;
- (v) replacing and servicing batteries;
- (w) replacement or adjustment of non-structural fasteners incidental to operations; and
- (x) 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.

Regulation 34

One hundred-hour inspections under regulation 34 shall meet the following minimum standards for its performance:

- (a) a person authorised under these Regulations to perform an annual or one hundred-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) a person authorised under these Regulations performing an annual or one hundred-hour inspection shall inspect, where applicable, the following components:
 - (i) fuselage and hull group—

- A. fabric and skin—for deterioration, distortion, other evidence of failure, and defective or insecure attachment of fittings;
 - B. systems and components—for improper installation, apparent defects, and unsatisfactory operation;
 - C. the cabin and cockpit group;
 - D. generally—for uncleanness and loose equipment that might foul the controls;
 - E. seats and safety belts—for poor condition and apparent defects;
 - F. windows and windshields—for deterioration and breakage;
 - G. instruments—for poor condition, mounting, marking, and (where practicable) for improper operation;
 - H. flight and engine controls for improper installation and improper operation;
 - I. batteries—for improper installation and improper charge; and
 - J. all systems—for improper installation, poor general condition, apparent and obvious defects, and insecurity of attachment;
- (ii) engine and nacelle group—

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- A. engine section—for visual evidence of excessive oil, fuel, or hydraulic leaks, and sources of such leaks;
- B. studs and nuts—for improper torquing and obvious defects;
- C. 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;
- D. engine mount—for cracks, looseness of mounting, and looseness of engine to mount;
- E. flexible vibration dampeners—for poor condition and deterioration;
- F. engine controls—for defects, improper travel, and improper safetying;
- G. lines, hoses, and clamps—for leaks, improper condition, and looseness;
- H. exhaust stacks—for cracks, defects, and improper attachment;
- I. accessories—for apparent defects in security of mounting;

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- J. all systems—for improper installation, poor general condition, defects, and insecure attachment; and
 - K. cowling—for cracks and defects;
- (iii) landing gear group—
- A. all units—for poor condition and insecurity of attachment;
 - B. shock absorbing devices—for improper oleo fluid level;
 - C. linkage, trusses, and members—for undue or excessive wear, fatigue, and distortion;
 - D. retracting and locking mechanism—for improper operation;
 - E. hydraulic lines—for leakage;
 - F. electrical system—for chafing and improper operation of switches;
 - G. wheels—for cracks, defects, and condition of bearings;
 - H. tires—for wear and cuts;
 - I. brakes—for improper adjustment; and
 - J. floats and skis—for insecure attachment and obvious or apparent defects;

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- (iv) wing and centre section assembly for—
 - A. poor general condition;
 - B. fabric or skin deterioration;
 - C. distortion;
 - D. evidence of failure;
 - E. insecurity of attachment;
- (v) complete empennage assembly for—
 - A. poor general condition;
 - B. fabric or skin deterioration;
 - C. distortion,
 - D. evidence of failure;
 - E. insecure attachment;
 - F. improper component installation; and
 - G. improper component operation;
- (vi) propeller group—
 - A. propeller assembly—for cracks, nicks, binds, and oil leakage;
 - B. bolts—for improper torquing and lack of safety;

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- C. anti-icing devices—for improper operations and obvious defects; and
 - D. control mechanisms—for improper operation, insecure mounting, and restricted travel;
- (vii) avionics or instrument group—
- A. avionics or instruments equipment—for improper installation and insecure mounting;
 - B. wiring and conduits—for improper routing, insecure mounting, and obvious defects;
 - C. bonding and shielding—for improper installation and poor condition; and
 - D. antenna including trailing antenna—for poor condition, insecure mounting, and improper operation;
- (viii) electronic/electrical group—
- A. wiring and conduits—for improper routing, insecure mounting, and obvious defects; and
 - B. bonding and shielding—for improper installation and poor condition;
- (ix) 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.

Regulation 36

Certificate of Maintenance Review required to operate a Guyana aircraft in civil aviation operations:

“CERTIFICATE OF MAINTENANCE REVIEW”

Aircraft Type:

Nationality and Registration Mark:

Certified that a maintenance review of this aircraft and such of its equipment as is necessary for its airworthiness has been carried out in accordance with the requirements of the Act and Regulations made thereunder for the time being in force.

The next maintenance review is due:

Name: Signature:

CAA Licence No.: Date:

Organisation:

Regulation 39

The content and form of the Maintenance, Preventive Maintenance and Rebuilding Record under regulation 39 shall meet the following minimum standards:

- (a) appropriately authorised persons may maintain or perform preventive maintenance on an aeronautical product. When the work is satisfactorily performed, the person who has performed the work is required to make the following entries on the applicable forms and document for recording purposes, such as Logbooks, Technical Log, Routine and non-Routine Work/Record cards, Major Modification and Major Repair Record card. Certain documents may be provided by the Authority, however where the operator develops official company documents for recording purposes, such documents shall be approved by the Authority prior to official use;
- (b) the maintenance record entry is required to include ,a description of the work performed,' which must be in sufficient detail to permit a person unfamiliar with the work to understand what was done, including the methods and procedures used in doing it. Manufacturer's manuals, service letters, bulletins, work orders, and others, which accurately describe what was done, or how it was done, may be referenced. Except for the documents mentioned, which are in common usage, referenced documents are to be made a part of the maintenance records;
- (c) the date of completion of work performed is normally the date upon which the work is approved for return to service. However, when work is accomplished by one person and approved for return to service by another, the date may differ. The date the work performed was completed must be appended on the record document;
- (d) the name in block letters, signature and certificate number of the person approving the aircraft for return to service is the only signature required. The signature constitutes the Certificate of Release to Service only for the work

performed. The signature of the person who accomplished the work may be appended in an ‘accomplished by’ column but is not a requirement;

- (e) recording of Major Repairs and Major Modifications—
- (i) each person performing a major repair or major modification shall—
 - A. complete the major repair and major modification form prescribed by the Authority at least in duplicate;
 - B. give a signed copy of that form to the aircraft operator; and
 - C. forward a copy of that form to the Authority, in accordance with Authority instructions, within forty-eight (48) hours after the aeronautical product is approved for return to service;
 - (ii) in place of the requirements of paragraph (a), major repairs made in accordance with a manual or specifications acceptable to the Authority, an Approved Maintenance Organisation may—
 - A. use the customer's work order upon which the repair is recorded;
 - B. 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;

- C. give the aircraft owner a maintenance release signed by an authorised representative of the Approved Maintenance Organisation 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; and
 - (III) if an aeronautical product, give the manufacturer's name, name of the part, model, and serial numbers (if any).

Regulation 40

Records of the overhaul and rebuilding of an aeronautical product under regulation 40 shall meet the following minimum standards:

- (a) the overhaul of an aeronautical product shall entail the restoration of an aircraft or 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);
- (b) having satisfied paragraphs (1), the authorised maintenance personnel may describe the maintenance activity to be an ‘overhaul’ and make records to so indicate;
- (c) the rebuilding of an aeronautical product shall include—
- (i) 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. The manufacturer or an organisation approved by the manufacturer and authorised by the State of Registry will be the only organisations to perform rebuilding of aero- nautical products;
 - (ii) the manufacturer of the component or the organisation approved by the manufacturer and authorised by the State of Registry, having satisfied the requirements of paragraphs (a) may describe the maintenance activity performed on the aeronautical product as a ‘rebuild’ and make records to so indicate;
 - (iii) regulation 29(f) provides that a manufacturer holding an Approved Maintenance Organisation Certificate may rebuild any aeronautical product manufactured by the

manufacturer under a type of production certificate, a Technical Standards Order Authorisation, a Parts Manufacturer Approval by the State of Design or Product and Processes Specification issued by the State of Design. When this is done, the operator of a Guyana aircraft may use a new maintenance record without regard to previous operating history;

- (iv) the manufacturer or an agency approved by the State of Design or manufacture that rebuilds and grants zero time to an aeronautical product is required to provide a signed statement containing—
 - A. the date the product was rebuilt;
 - B. each change made, as required by an Airworthiness Directive; and
 - C. each change made in compliance with service bulletins, when the service bulletin specifically requests an entry to be made.

Regulation 41

The content and form of records for the inspection of aeronautical products shall meet the following minimum standards:

- (a) persons issuing Certificate of Release to Service for Inspections performed in accordance with these Regulations and the Civil Aviation Operations Regulations, the Civil Aviation Air Operator Certification and Administration Regulations, are required to make an entry in the maintenance record of that equipment. The

following information may be made in the airframe, engine, engine module or propeller logbook, the Technical log, Routine and non-Routine Job Cards or Defect or Work card as appropriate to the recording scheme adopted by the operator approved by the Authority:

- (i) the type of inspection, including references to the maintenance manual and procedures used; and a brief description of the extent of the inspection performed;
 - (ii) the date the inspection was completed and the total time-in-service at that time. The total time-in-service is the cumulative times that the aircraft was in flight;
- (b) recording of time-in-service under paragraph (1)(b) the operator may use recording devices that sense aircraft lift-off and touchdown. Any other recording devices that sense such things as electrical power on, oil pressure, wheels on the ground, etc., and from these conditions provide an approximate indication of time-in-service.

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