

THE CIVIL AVIATION [(NO. 5) AIRWORTHINESS]
REGULATIONS, 2004

Arrangement of Regulations

Regulation

1. Citation
2. Interpretation
3. General Applicability of these Regulations

PART I

AERONAUTICAL PRODUCT CERTIFICATION

4. Applicability of Part I
5. Application for Type Certificate
6. Application for Production Certificate
7. Application for a new Type Certificate
8. Supplemental Type Certificate

PART II

AIRWORTHINESS CERTIFICATION

9. Applicability of Part II
10. Restriction on operation of aircraft without Airworthiness Certificates
11. Requirements for the issue of Airworthiness Certificate
12. Issue of Special Flight Permit
13. Amendment of Airworthiness Certificate
14. Transfer or surrender of Airworthiness Certificate
15. Continued validity of Airworthiness Certificate
16. Contents of an Airworthiness Certificate
17. Requirement of air operator to maintain records for identification of type design
18. Requirements for continued airworthiness of aircraft and aeronautical products

19. Requirements for Aircraft Maintenance Programme
20. Airworthiness directives procedures
21. Procedures to be followed where damage occurs to aircraft
22. Requirements for reporting of failures, malfunctions and defects
23. Procedures for major modification and major repairs

PART III

AIRCRAFT MAINTENANCE AND INSPECTION

24. Applicability of Part III
25. Persons authorized to perform maintenance or preventive maintenance
26. Persons authorized to perform inspections
27. Restrictions on persons who can issue Certificate of Release to Service
28. Maintenance Performance Rules
29. Requirements for inspections performance rules
30. Requirement for annual and one hundred-hour inspections and use of a check-list
31. Issue of Certificate of Release to Service
32. Required Performance Rules, Certificate of Release to Service

PART IV

MAINTENANCE RECORDS AND ENTRIES

33. Applicability of Part IV
34. Content, form, and disposition of maintenance, preventive maintenance, rebuilding, and modification of records
35. Requirement for records of overhaul and rebuilding
36. Required content, form, and disposition of records for inspections
37. Air operator to comply with implementing standards
38. Director General to amend Schedules
39. Transitional provisions
 - Schedule 1
 - Schedule 2
 - Schedule 3

LEGAL NOTICE NO. 48

REPUBLIC OF TRINIDAD AND TOBAGO

THE CIVIL AVIATION ACT, 2001

REGULATIONS

MADE BY THE AUTHORITY WITH THE APPROVAL OF THE MINISTER
UNDER SECTION 33 OF THE CIVIL AVIATION ACT

THE CIVIL AVIATION [(NO. 5) AIRWORTHINESS] REGULATIONS,
2004

1. These Regulations may be cited as the Civil Aviation [(No. 5) Citation
Airworthiness] Regulations, 2004.

2. (1) In these Regulations—

“Act” means the Civil Aviation Act, 2001;

“aeronautical product” means any aircraft engine, propeller or
sub assembly, appliance, material, part or component to be
installed on an aircraft and any aircraft;

“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;

“aircraft category” means the classification of aircraft according
to specified basic characteristics such as aeroplane,
rotocraft, glider or lighter-than-air;

“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;

“aircraft type” means all aircraft of the same basic design;

“airworthy” means an aircraft or aeronautical product is in a fit
and safe state for flight and is in conformity with its type
design;

“approved data” means technical aeronautical information
approved by the Authority;

“Approved Maintenance Organization,” means a maintenance
organization approved by the Authority in accordance with
the Civil Aviation [(No. 6) Approved Maintenance
Organization] Regulations, 2004 to conduct maintenance
on Trinidad and Tobago aircraft and their associated
aeronautical product;

Interpreta-
tion No. 11 of
2001

“Authority” means the Civil Aviation Authority of Trinidad and Tobago;

“Director General” means the Director General of Civil Aviation appointed under section 13 of the Act;

“familiarization training” means training of a general nature whereby participant gains a general appreciation and familiarity with the subject;

“inspection” means the examination of an aircraft or aeronautical product to establish conformity with an approved standard;

“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 eighty kilogrammes maximum certified take-off mass;

“maintenance” means the tasks required to ensure the continued airworthiness of an aeronautical product and includes overhaul, repair, inspection, replacement, modification and defect rectification;

“major modification” means an alteration specified under Schedule 3;

“major repair” means a repair specified under Schedule 3;

“modification” means the alteration of an aircraft or aeronautical product in conformity with an approved standard;

“operator” means—

(a) a person, organization or enterprise, engaged in or offering to engage in, aircraft operations, and any person who causes or authorizes the operation of aircraft, in the capacity of owner, lessee or otherwise, whether with or without the control of the aircraft; and

(b) who or which is deemed to be engaged in the operation of aircraft within the Civil Aviation Act, 2001;

“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;

“preventive maintenance” means the simple or minor preservation operations and replacement of small standard parts not involving complex assembly operations;

“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 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 or an organization approved by the manufacturer, and authorized by the State of Registry;

“repair” means the restoration of an aircraft or aeronautical product to a serviceable condition in conformity with an approved standard;

“required inspection items” means maintenance items and modifications of an aeronautical product that must be inspected by a person other than the person performing the work and includes those that could result in a failure, malfunction or defect endangering the safe operation of the aircraft, if not properly performed or if improper parts or materials are used;

“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 eighty kilogrammes or less;

“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;

“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;

“State of Registry” means the Contracting State on whose register the aircraft is entered;

“Trinidad and Tobago aircraft” means a civil aircraft registered in Trinidad and Tobago.

General Applicability of these Regulations

General
Applicability
of these
Regulations

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

- (a) certification of Trinidad and Tobago aircraft and its aeronautical products;
- (b) issuance of Airworthiness Certificate and other certification for Trinidad and Tobago aircraft and aeronautical products;
- (c) continued airworthiness of aircraft and its aeronautical products;
- (d) modification and rebuilding of Trinidad and Tobago aircraft and aeronautical products;
- (e) maintenance and preventive maintenance of Trinidad and Tobago aircraft and its aeronautical products;
- (f) inspection requirements of Trinidad and Tobago aircraft; and
- (g) aircraft maintenance and inspection requirements of a national air operator.

(2) The provisions of Part I of the Civil Aviation [(No. 1) General Application and Personnel Licensing] Regulations, 2004 with respect to the surrender, suspension or revocation of aviation documents apply to certificates, authorizations and ratings issued under these Regulations.

PART I

AERONAUTICAL PRODUCT CERTIFICATION

General Applicability of Part I

General
Applicability
of Part I

4. This Part prescribes the requirements for the issue of a Type Certificate, Production Certificate and Supplemental Type Certificate.

Application for Type Certificate

Application
for Type
Certificate

5. (1) Where a person wishes an aeronautical product design to be approved for safety and airworthiness standards in Trinidad and Tobago, he shall apply to the Authority for a Type Certificate in respect of such aeronautical product.

(2) An application under subregulation (1), shall—

- (a) be accompanied by the prescribed fee; and
- (b) meet the requirements of the Act or Regulations made thereunder.

Application for Production Certificate

6. (1) A person shall not manufacture an aeronautical product without the approval of the Authority.

Application
for
Production
Certificate

(2) A person wishing to manufacture an aeronautical product in Trinidad and Tobago shall—

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

(3) Where the Director General is satisfied that an applicant meets the requirements of these Regulations to manufacture an aeronautical product in Trinidad and Tobago in a controlled manner including the use of a quality system so that construction and assembly are satisfactory, he may recommend the Authority issue a Production Certificate.

(4) An applicant under subregulation (2), for a Production Certificate shall comply with the type certificate as required by the State of Design for approval.

Application for New Type Certificate

7. A person who wishes to alter an aeronautical product by introducing a major change in type design and such alteration requires an application for a new Type Certificate shall—

Application
for a new
Type
Certificate

- (a) apply to the Authority for approval to implement such alteration;
- (b) pay the prescribed fee; and
- (c) meet the requirements of the these Regulations.

Supplemental Type Certificate

8. A person who wishes to alter an aeronautical product by introducing a major change in type design, and such alteration is not enough to require an application for a new Type Certificate under regulation 7, shall—

Supplemental
Type
Certificate

- (a) apply to the Authority for approval to implement such alteration;
- (b) pay the prescribed fee;
- (c) provide the Authority with the Supplemental Type Certificate obtained from the civil aviation authority of the State of Design that approved the original Type Certificate for that aeronautical product; and
- (d) provide the Authority with the procedure to be used for the implementation of such alteration.

PART II

AIRWORTHINESS CERTIFICATION

Application of Part II 9. This Part prescribes the requirements for the issue of Airworthiness Certificate and Special Flight Permit for Trinidad and Tobago aircraft.

Restriction on Operations without Airworthiness Certificate

Restriction on operation of aircraft without Airworthiness Certificates 10. (1) The operator of a Trinidad and Tobago aircraft shall not operate such aircraft in civil aircraft operations unless the Authority has issued an Airworthiness Certificate in respect of such aircraft certifying it to be airworthy.

- (2) The operator of a Trinidad and Tobago 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

Requirements for the issue of Airworthiness Certificate 11. (1) The Director General may recommend that the Authority issue an Airworthiness Certificate in respect of a Trinidad and Tobago aircraft where—

- (a) the applicant presents evidence to the Director General that the aircraft conforms to a type design approved under a Type Certificate and applicable Supplemental Type Certificate of a State of Design identified under paragraph (1)(e);
- (b) all applicable Airworthiness Directives and 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 authorized by the Authority to make such determinations;
- (c) he is satisfied, after an inspection of the Trinidad and Tobago aircraft, that such aircraft conforms to the type design and is in a condition for safe operation;
- (d) such aircraft has been flight tested, as required; and
- (e) such aircraft meets the acceptable and equivalent type design standards of the established international airworthiness codes set out in the Schedule 1.

Schedule 1

(2) Where a Trinidad and Tobago aircraft is known to or is suspected to have dangerous features, such aircraft shall not be issued an Airworthiness Certificate.

(3) Prior to the issue of an Airworthiness Certificate the owner of an aircraft shall register such aircraft in Trinidad and Tobago in accordance with the requirements of the Civil Aviation [(No. 4) Registration and Markings] Regulations, 2004.

Issue of Special Flight Permit

12. (1) The Director General may recommend that the Authority issue a Special Flight Permit to the operator of a Trinidad and Tobago aircraft, where such aircraft is capable of safe flight, but unable to meet 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 Trinidad and Tobago; or
- (d) evacuating aircraft from areas of impending danger.

(2) The Director General shall in the interest of safety recommend the Authority issue specific operating limitations for each Special Flight Permit issued under subregulation (1).

(3) The Director General shall require the operator of a Trinidad and Tobago aircraft which has been issued a Special Flight Permit under subregulation (1), to conduct maintenance in accordance with the aircraft maintenance manual.

(4) An operator under subregulation (3) shall ensure that the maintenance required to be conducted is performed by a person or organization authorized to so conduct such maintenance under the Act or Regulations made thereunder.

(5) A person or organization conducting maintenance under subregulations (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 all required overflight authorizations from states to be overflown on flights outside Trinidad and Tobago by an aircraft operating under a Special Flight Permit.

(7) Where a Special 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 Special Flight Permit has been issued under these Regulations shall not carry passengers or property for compensation or hire.

Amendment of Airworthiness Certificate

Amendment of Airworthiness Certificate 13. The Director General may on his own initiative or upon application from the operator of a Trinidad and Tobago aircraft recommend the Authority amend or modify an Airworthiness Certificate of such aircraft.

Transfer or Surrender of Airworthiness Certificate

Transfer or surrender of Airworthiness Certificate 14. (1) The Director General may recommend that the Authority transfer an Airworthiness Certificate to the lessee of a Trinidad and Tobago aircraft, where such aircraft is leased within Trinidad and Tobago.

(2) An operator shall surrender the Airworthiness Certificate for a Trinidad and Tobago aircraft to the Authority upon sale of such aircraft to an operator outside of Trinidad and Tobago.

(3) The Director General may recommend that the Authority issue an Export Airworthiness Certificate for a Trinidad and Tobago aircraft which is to be exported from Trinidad and Tobago.

(4) Nothing in subregulation (3), shall be interpreted as not requiring a Trinidad and Tobago aircraft being exported from Trinidad and Tobago from having a valid Airworthiness Certificate.

Continued Validity of Airworthiness Certificate

Continued validity of Airworthiness Certificate 15. (1) An Airworthiness Certificate shall remain valid for one year unless otherwise surrendered, suspended or revoked.

(2) Notwithstanding subregulation (1), an Airworthiness Certificate may be issued to an operator for a period of less than one year where it is issued under regulation 11.

(3) The application for the renewal of an Airworthiness Certificate shall be—

(a) made in a form and manner prescribed by the Authority; and

(b) accompanied by the prescribed fee.

(4) The continued validity of an Airworthiness Certificate shall be dependent upon—

(a) the Trinidad and Tobago aircraft being maintained in an airworthy condition in accordance with the requirements of these Regulations;

(b) the Authority being granted access to the Trinidad and Tobago aircraft to determine continued compliance with these Regulations; and

(c) the Trinidad and Tobago aircraft being operated within the performance and operating limitations of its approved Aircraft Flight Manual.

Contents of an Airworthiness Certificate

16. An Airworthiness Certificate 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;
- (c) the manufacturer and designation of the Trinidad and Tobago aircraft;
- (d) the serial number of the Trinidad and Tobago aircraft;
- (e) the category of operation;
- (f) date of issue;
- (g) authorizing 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.

Maintenance of Records for Aircraft issued an Airworthiness Certificate

17. Where an Airworthiness Certificate has been issued in respect of a Trinidad and Tobago aircraft under these Regulations, the operator of such Trinidad and Tobago aircraft shall be responsible for maintaining records of such aircraft including records to establish the identification of such aircraft with its approved type design.

Continued Airworthiness of Aircraft and Aeronautical Products

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

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

- (a) all maintenance, overhaul, modifications and repairs which affect airworthiness are performed by an approved person or Approved Maintenance Organization in a manner prescribed by the Authority;
- (b) any removal or replacement of any aeronautical product of such aircraft is conducted in a manner and with materials required by the Manufacturer;

- (c) all inspections classified in the Approved Maintenance programme or any Airworthiness Directives of the State of Design of such aeronautical products are completed as prescribed;
- (d) all approved maintenance personnel make appropriate entries in the aircraft maintenance records certifying that such aircraft is airworthy;
- (e) a Certificate of Release to Service is issued in accordance with regulation 31, to certify that maintenance work performed has been completed satisfactorily and in accordance with the prescribed methods; and
- (f) 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 and these items are made a part of the aircraft permanent record.

(3) Any failure to maintain an aeronautical product in an airworthy condition as prescribed by this regulation shall render the Trinidad and Tobago aircraft unfit for flight until such time it is restored to an airworthy condition by re-compliance with this regulation.

Aircraft Maintenance Programme

Requirements
for Aircraft
Maintenance
Programme

19. (1) Maintenance activities shall include processes and practices established by the manufacturer of the aeronautical product and approved by the civil aviation authority of the State of Design of such a product.

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

(3) A maintenance programme under subregulation (2), shall include a 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.

(4) The maintenance programme under subregulation (2), 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 utilization of the aircraft and the operator's particular maintenance and operating environment and experience of the operator.

(5) An operator shall not operate a Trinidad and Tobago 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) alternative inspection intervals and related procedures—
 - (i) set forth in the specific operating provisions approved under the Civil Aviation [(No. 3) Air Operator Certification and Administration] Regulations, 2004; or
 - (ii) in accordance with the inspection programme approved under the Civil Aviation [(No. 2) Operations] Regulations, 2004; or
- (c) maintenance programme approved under these regulations.

Airworthiness Directives

20. (1) Where an aircraft is registered in Trinidad and Tobago, the Director General shall—

- (a) notify the State of Design and State of Manufacture of the registration of such aircraft in Trinidad and Tobago; and
- (b) request all Airworthiness Directives in respect of such aircraft or its associated aeronautical product and any information which the State of Design and State of Manufacture deems necessary for the continuing airworthiness and safe operation of the Trinidad and Tobago aircraft.

(2) Whenever a State of Design considers an aircraft or its associated aeronautical product is unsafe based on an airworthiness directive by that State, such directives shall be mandatory to Trinidad and Tobago registered aircraft of the type identified in that airworthiness directive.

(3) An operator of a Trinidad and Tobago aircraft shall, whenever an Airworthiness Directive has been issued in respect of the same aircraft or aeronautical product type comply with such airworthiness directives.

Airworthiness
directives
procedures

(4) 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 a Airworthiness Directive has not been issued by the State of Design, recommend the Authority issue a Special Airworthiness Directive prescribing inspections and the conditions and limitations, where any, under which such aeronautical products may continue to be operated.

(5) The findings of any inspection under subregulation (4), shall be forwarded immediately by the operator to the Authority and the State of Design.

(6) A person shall not operate an aeronautical product to which an Airworthiness Directive applies, issued by—

- (a) the State of Design;
- (b) State of Manufacture;
- (c) the Authority; or
- (d) the State of Registry for other aircraft operated within Trinidad and Tobago,

except in accordance with the requirements of that Airworthiness Directive.

Damage to Aircraft

Procedures to be followed where damage occurs to aircraft

21. (1) An operator shall not operate an aircraft that has sustained damage unless all details of the damage are provided to allow the State of Registry to determine the airworthiness of the aircraft as defined by the appropriate airworthiness requirements.

(2) Where a Trinidad and Tobago aircraft has sustained damage, the operator shall have the aircraft inspected by an appropriately qualified maintenance person in accordance with the appropriate airworthiness requirements to assess the damage to determine the airworthy state of the aircraft.

(3) Where it is determined upon inspection of a Trinidad and Tobago aircraft under subregulation (2), that the damage sustained is of a nature such that the Trinidad and Tobago aircraft is no longer airworthy, the Trinidad and Tobago aircraft shall not be allowed to resume flight until it is certified as airworthy.

(4) Notwithstanding subregulation (3), in exceptional circumstances the Director General may, upon application by the operator, recommend the Authority issue a Special Flight Permit prescribing the conditions under which the aircraft may operate to an aerodrome at which it can be restored to an airworthy condition.

(5) An aircraft in respect of which a Special Flight Permit has been issued under these Regulations shall not carry passengers.

(6) Where the damage sustained is of a nature that a Trinidad and Tobago aircraft is no longer airworthy when the aircraft is in the territory of another Contracting State, the civil aviation authority of that Contracting State is entitled to prevent the aircraft from resuming its flight.

(7) Where a foreign registered aircraft operating in Trinidad and Tobago has sustained damage, the operator of such foreign aircraft shall report such occurrence and the details of the damage to the Authority and to the State of Registry to allow the State of Registry to make an assessment of the airworthiness status of the aircraft.

(8) The Director General may prevent the foreign registered aircraft referred to in subregulation (7) from resuming flight until he has received notification from the State of Registry that the aircraft is—

- (a) airworthy; or
- (b) safe for flight and issued with a Special Flight Permit or equivalent approval.

(9) Subject to satisfying the requirements of the Contracting State referred to in subregulation (6), and upon the restoration of the Trinidad and Tobago aircraft to an airworthy condition or the issue of a Special Flight Permit by the Authority, the civil aviation authority of that Contracting State may permit the Trinidad and Tobago aircraft to resume flight.

Reporting of Failures, Malfunctions and Defects

22. (1) Operators, Approved Maintenance Organizations, Air Traffic ^{Requirements} Controllers, Pilots, and holders of Aircraft Maintenance Licence shall ^{for reporting} report to the Director General any faults, failures, malfunctions, or ^{of failures,} defects, and other occurrences on any Trinidad and Tobago aircraft ^{malfunctions} under his control which cause or might cause adverse effects on the ^{and defects} continued airworthiness of the aircraft such as—

- (a) fires during flight and whether the related fire-warning system operated properly;
- (b) fires during flight not protected by a related fire-warning system;
- (c) false fire-warning during flight;
- (d) an engine exhaust system that causes damage during flight to the engine, adjacent structure, equipment or components;

- (e) an aircraft component that causes accumulation or circulation of smoke, vapour, or toxic or noxious fumes in the crew compartment or passenger cabin during flight;
- (f) engine shutdown during flight because of flameout;
- (g) engine shutdown during flight when external damage to the engine or aircraft structure occurs;
- (h) engine shutdown during flight due to foreign object ingestion or icing;
- (i) engine shutdown during flight;
- (j) a propeller feathering system or ability of the system to control overspeed during flight;
- (k) a fuel or fuel-dumping system that affects fuel flow or causes hazardous leakage during flight;
- (l) an unintended landing gear extension or retraction, or opening or closing of landing gear doors during flight;
- (m) brake system components that result in loss of brake actuating force when the aircraft is in motion on the ground;
- (n) aircraft structure that requires major repair;
- (o) cracks, permanent deformation, or corrosion of aircraft structure, if more than the maximum acceptable to the manufacturer or the Authority;
- (p) aircraft components or systems malfunctions that result in taking emergency actions during flight;
- (q) each interruption to a flight, unscheduled change of aircraft route, or unscheduled stop or diversion from a route caused by known or suspected technical difficulties or malfunctions;
- (r) any abnormal vibration or buffeting caused by a structural or system malfunction, defect, or failure;
- (s) a failure or malfunction of more than one attitude, airspeed, or altitude instrument during a given operation of the aircraft;
- (t) the number of engines removed prematurely because of malfunction, failure or defect, listed by make and model and the aircraft type in which it was installed; or
- (u) the number of propeller featherings in flight, listed by type of propeller and engine and aircraft on which it was installed.

- (2) A report required by this regulation shall—
- (a) be submitted to the Authority within seventy-two hours after determining that the failure, malfunction, or defect required to be reported has occurred; and
 - (b) include as much of the following information as is available and applicable:
 - (i) aircraft serial number;
 - (ii) when the failure, malfunction, or defect is associated with an article approved under a Technical Standard Order authorization, the article serial number and model designation, as appropriate;
 - (iii) when the failure, malfunction or defect is associated with an engine or propeller, the engine or propeller serial number, as appropriate;
 - (iv) product model;
 - (v) identification of the part, component, or system involved, including the part number; and
 - (vi) nature of the failure, malfunctions or defects.
- (3) The operator shall ensure that a report under subregulation (1), is also submitted in a timely basis to—
- (a) the State of Registry, for an aircraft registered in a foreign State;
 - (b) the State of Design; and
 - (c) the holder of the Type Certificate.
- (4) A report under this regulation shall be made in a form and manner acceptable to the Authority.

Major Modification and Major Repairs

23. (1) All modifications and repairs to an aeronautical product shall comply with airworthiness requirements acceptable to the Authority.

Procedures
for major
modification
and major
repairs

(2) A national operator shall establish procedures to ensure that the substantiating data which supports compliance with the airworthiness requirements are retained for the purpose of inspection by the Authority.

(3) Notwithstanding subregulation (2), in the case of a major repair or major modification to an aeronautical product, the major repair or major modification to such aeronautical product, shall be completed in accordance with technical data approved or accepted by the Authority.

(4) A major repair or major modification to an aeronautical product shall be performed by—

- (a) an Approved Maintenance Organization in accordance with the limitations of his Operations Specifications issued by the Authority;
- (b) an air operator in accordance with his Operations Specifications issued by the Authority; or
- (c) the holder of a valid Inspection Authorization in accordance with the limitation of such Inspection Authorization.

(5) An operator shall, promptly upon its completion, prepare a report of each major modification or major repair of an aeronautical product operated by him.

(6) An operator shall submit a copy of each report of a major modification to the Authority, and shall keep a copy of each report of a major repair available for inspection.

(7) Where a major repair or major modification results in a change in the aircraft operating limitations or flight data contained in the Aircraft Flight Manual, those operating limitations or flight data in the Aircraft Flight Manual shall be appropriately revised and set forth as prescribed.

PART III

AIRCRAFT MAINTENANCE AND INSPECTION

Applicability of Part III

Applicability of Part III 24. This Part prescribes the requirements for maintenance and inspection of a Trinidad and Tobago aircraft and its associated aeronautical products.

Persons authorized to Perform Maintenance or Preventive Maintenance

Persons authorized to perform maintenance or preventive maintenance 25. (1) A person shall not perform any task defined as maintenance, preventive maintenance or modification of a Trinidad and Tobago aircraft or its aeronautical products, unless such person is—

- (a) a pilot authorized by the Authority, limited to perform preventive maintenance on specified non-commercial Trinidad and Tobago small aircraft owned or operated by such pilot;

- (b) an Aircraft Maintenance Engineer, limited to perform maintenance, preventive maintenance, or modification of an aircraft or aeronautical product for which he holds a licence and;
- (c) performing maintenance, preventive maintenance or modification under the supervision of an Aircraft Maintenance Engineer, authorized to perform such maintenance who—
 - (i) personally 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 Organization subject to the limitations of his Operations;
- (e) an air operator subject to the limitations of his Operations; or
- (f) a manufacturer holding an Approved Maintenance Organization 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 Authorization, 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 the Act or Regulations made thereunder 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, preventive maintenance or modification under subregulation (1)(c) unless he has received—

- (a) basic aeronautical knowledge and skill training in the area of maintenance to be undertaken;
- (b) familiarization 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) training on procedures for introduction into service of new equipment with which the maintenance personnel are not familiar;
- (f) recurrent training on topics relevant to the operations; and
- (g) human factors training in the relevant aviation areas.

Persons Authorized to Perform Inspections

Persons
authorized to
perform
inspections

26. A person, shall not perform the inspections required by the Act or Regulations made thereunder, for a Trinidad and Tobago aircraft and its aeronautical products prior to or after it has undergone maintenance, preventive maintenance, rebuilding, or modification, 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 Organization, who may conduct the required inspection subject to its Operations Specification;
- (c) a national 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.

Persons Authorized to issue Certificate of Release to Service

Restrictions
on persons
who can issue
Certificate of
Release to
Service

27. A person issuing a Certificate of Release to Service specified in regulation 26 shall be—

- (a) a pilot authorized by the Authority to perform limited preventive maintenance in accordance with regulation 25(1)(a) on specified non-commercial Trinidad and Tobago small aircraft owned or operated by such pilot;
- (b) an Aircraft Maintenance Engineer performing, supervising, or inspecting the maintenance of an aeronautical product subject to the limitations of his licence and rating;
- (c) an Aircraft Maintenance Organization subject to the limitations of its Operations Specifications; or
- (d) a national air operator subject to the limitations of his Operations Specifications.

Maintenance Performance Rules

Maintenance
Performance
Rules

28. (1) A person authorized by these Regulations to perform maintenance or preventive maintenance under regulation 25, 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 subregulation (1), a person conducting maintenance or preventive maintenance shall—

- (a) where an air operator has an approved maintenance control manual which contains the methods, techniques and practices; and
- (b) where the Director General prescribes additional methods, techniques and practices in accordance with approved equivalent engineering and safety standards,

comply with such methods, techniques and practices.

(3) A person authorized by these Regulations to perform maintenance or preventive maintenance shall use the tools, equipment, and test apparatus necessary to assure completion of the work in accordance with accepted industry practices.

(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 authorized by these Regulations to perform maintenance or preventive 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 authorized 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.

Inspections Performance Rules

Requirements
for
inspections
performance
rules

29. (1) Where a person authorized 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 subregulation (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 authorized 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.

Annual and One Hundred-Hour Inspections and Use of Check-list

Requirement
for annual
and one
hundred-
hour
inspections
and use of a
check-list

30. (1) A person authorized 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 subregulation (1), shall include the scope and detail of the required items acceptable to the Authority.

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

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

(b) a turbine-engine-powered aircraft,

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

Issue of
Certificate of
Release to
Service

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

(2) The person authorized to perform inspections under the Act, or 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 such discrepancies.

(3) An aeronautical product under subregulation (2), shall not be issued a Certificate of Release to Service until all discrepancies identified in the listing have been addressed satisfactorily.

Performance Rules, Certificate of Release to Service

32. A person authorized to perform inspections under these Regulations shall not issue a Certificate of Release to Service for any aeronautical product under regulation 31 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.

Required
Performance
Rules,
Certificate of
Release to
Service

PART IV

MAINTENANCE RECORDS AND ENTRIES

Applicability of Part IV

33. This Part prescribes the requirements for maintenance records and entries following maintenance, preventive maintenance, overhaul and modifications for aircraft and aeronautical products.

Applicability
for Part IV

Content, Form, and Disposition of Maintenance, Preventive Maintenance, Rebuilding, and Modification of Records

34. (1) A person who is authorized 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;

Content,
form, and
disposition of
maintenance,
preventive
maintenance,
rebuilding,
and
modification
of records

- (b) the completion date of the work performed; and
- (c) the name, signature and licence or authorization number and kind of licence or authorization 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 Civil Aviation [(No. 2) Operations] Regulations, 2004 or any inspection performed after a major repair or modification.

Records of Overhaul and Rebuilding

Requirement for records of overhaul and rebuilding

35. (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.

Content, Form, and Disposition of Records for Inspections

Required content, form, and disposition of records for inspections

36. (1) A person authorized to issue a Certificate of Release to Service under the Act or Regulations made thereunder, for an aeronautical product after performing an inspection in accordance with the Act or Regulations made thereunder, 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, authorization number and approved Maintenance Organization approval number where the Certificate of Release to Service is issued under the privileges of the approved Maintenance Organization 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.

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

Part A
Schedule 2

(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 2.

Part B
Schedule 2

(4) A person authorized to perform an inspection required by the Civil Aviation [(No. 2) Operations] Regulations, 2004 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 unairworthy items.

Implementing Standards

37. A national air operator in meeting the requirements of Regulations 16, 18, 19, 23, 25, 30, 34, 35 and 36, shall ensure that he complies with the minimum standards set out in Schedule 3.

Air operator
to comply
with
implementing
standards
Schedule 3

Director General may amend Schedules

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

Director
General to
amend
Schedules

Transitional Provisions

Transitional provisions

39. (1) The airworthiness requirements of all Trinidad and Tobago aircraft and aeronautical products under these Regulations shall come into effect six months from the date of publication of these Regulations

No. 91 of 1995

(2) A person who on the commencement of these Regulations holds a valid Airworthiness Certificate for an aeronautical product and continues to operate such aircraft or aeronautical product under the conditions of its existing Airworthiness Certificate, shall apply to the Authority for re-certification under these Regulations and successfully complete that re-certification within the six month period provided under subregulation (1).

SCHEDULE 1

(Regulation 11)

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) Joint Aviation Requirements;
- (c) Canadian Aviation Regulations; and
- (d) British Civil Airworthiness Requirements.

SCHEDULE 2

(Regulation 36)

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 unairworthy items have been provided to the aircraft operator. Such aircraft shall not be released to service unless all discrepancies and unairworthy items identified on that list have been addressed in accordance with the approved airworthiness requirements.

....."
Signature Date

SCHEDULE 3

(Regulation 37)

IMPLEMENTING STANDARDS

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

Regulation 16

The categories of operation under Regulation 16 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 person other than public transport
Private Category	Any purpose other than public transport or aerial work
Special Category	Any purpose other than public transport, specified in the certificate of Airworthiness but not including the carriage of passengers unless expressly permitted

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 authorized under the Regulations and subsequently made and certified by a second person authorized 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 and the associated operating mechanisms;
- (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 Organizations, who are appropriately authorized 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 Authorization is granted by the responsible Approved Maintenance Organization, 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 Organizations, persons employed who are appropriately authorized 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 authorized by the primary Approved Organization with a Quality Control Surveillance System controlling the sub-contractor, qualified to make such inspections; and

- (ii) for Approved Maintenance Organizations who release Control System units and components, both inspections and the subsequent Certificates of Release to Service must be issued by persons authorized by the Maintenance Organization 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 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 aeroplane 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 analyze 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, utilize 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 kilogrammes 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 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 utilization 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, utilization, 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 utilization;
 - (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 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 intend 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 organization which runs the programme (it may be the operator, or an Approve Maintenance Organization 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 summarizing 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 [(No. 3) Air Operator Certification and Administration] Regulations, 2004 approved programme, these supplemental documents shall form part of the approved maintenance control manual or maintenance organization 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 [(No. 3) Air Operator Certification and Administration] Regulations, 2004 approval, these procedures should be listed in the maintenance control manual or maintenance organization 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;
- (vi) 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 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;
- (vii) 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 formalized 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 routine maintenance;
 - (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;
 - (ij) 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;
- (viii) 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;
- (ix) organizational responsibilities—

the organizational 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;
- (x) 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 Reports, 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;
- (xi) 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 organizational 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) utilization;
 - (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;
- (xii) 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;
- (xiii) 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 MRB findings and Maintenance Steering Group 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 programmes 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 co-operation 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 itemized in the programme, or included by reference to the appropriate airworthiness data;

- (vi) processes other than the primary Maintenance Programme as are 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 summarizing 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 sub-contract arrangement with an organization 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 [(No. 3) Air Operator Certification and Administration] Regulations, 2004, these procedures should be listed in the Maintenance Control Manual or Maintenance Organization 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, analyzed 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 organizations*

The Programme should define the nominated Approved Maintenance Organization or engine and Auxiliary Power Unit repair and overhaul Organizations which are to be used, together with any contractual instructions to which the Organizations will be required to work. In the case of a Programme under Civil Aviation [(No. 3) Air Operator Certification and Administration] Regulations, 2004, this information should be contained in the Maintenance Control manual or Maintenance Organization 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 timescales. 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) *Organizational responsibilities*

The organisational structure of the Operator and where appropriate the sub-contracted maintenance, repair and overhaul Organizations 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 [(No. 3) Air Operator Certification and Administration] Regulations, 2004 Programme, this information should be contained in the Maintenance Control Manual or Maintenance Organization 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 sub-contracted maintenance, engine and Auxiliary Power Unit repair and overhaul Organizations. 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, both the Civil Aviation [(No. 3) Air Operator Certification and Administration] Regulations, 2004 and non Civil Aviation [(No. 3) Air Operator Certification and Administration] Regulations, 2004 Programmes require 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 Organizations 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 workscopes*

Each engine, module and Auxiliary Power Unit upon removal from an aircraft, should have an individual workscope prepared. The workscope 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 workscope 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 workscope should be agreed by the Operator and the sub-contract maintenance, engine repair and overhaul Organization as appropriate.

(C) *Rework and refurbish specification*

Regular liaison between the technical and quality personnel of the Operator and where appropriate, the sub-contract maintenance, engine or Auxiliary Power Unit repair and overhaul Organization should take place to review, and update the content of the engine, module and Auxiliary Power Unit rework 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 sub-contracted maintenance, engine repair and overhaul Organizations 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 23

Major modification or major repairs to aeronautical products under regulation 23 shall meet the following minimum standards:

(a) Major modifications:

- (i) major modifications include modifications to the listed aircraft parts, or the listed types of modifications (when not included in the applicable aircraft specifications)—
 - (A) wings;
 - (B) tail surfaces;
 - (C) fuselage;
 - (D) engine mounts;
 - (E) control system;
 - (F) landing gear;
 - (G) hull or floats;
 - (H) elements of an airframe including spars, ribs, fittings, shock absorbers, bracing, cowlings, fairings, and balance weights;
 - (I) hydraulic and electrical actuating system of components;
 - (J) rotor blades;
 - (K) changes to the empty weight or empty balance which result in an increase in the maximum certified weight or centre of gravity limits of the aircraft;
 - (L) changes to the basic design of the fuel, oil, cooling, heating, cabin pressurisation, electrical, hydraulic, de-icing, or exhaust systems;
 - (M) changes to the wing or to fixed or movable control surfaces which affect flutter and vibration characteristics;
- (ii) major powerplant modifications, even when not listed in the applicable engine specifications, include—
 - (A) 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;

- (B) 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;
 - (C) installation of an accessory which is not approved for the engine;
 - (D) removal of accessories that are listed as required equipment on the aircraft or engine specification;
 - (E) installation of structural parts other than the type of parts approved for the installation;
 - (F) conversions of any sort for the purpose of using fuel of a rating or grade other than that listed in the engine specifications;
- (iii) major propeller modifications, when not authorized in the applicable propeller specifications, include—
- (A) changes in blade design;
 - (B) changes in hub design;
 - (C) changes in the governor or control design;
 - (D) installation of a propeller governor or feathering system;
 - (E) installation of propeller de-icing system;
 - (F) installation of parts not approved for the propeller;
- (iv) 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 Authorization that have an effect on frequency stability, noise level, sensitivity, selectivity, distortion, spurious radiation, Automatic Voltage Control 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;
- (b) Major repairs:
- (i) Airframe major repairs. Repairs to the following parts of an airframe and repairs of the following types, involving the strengthening, reinforcing, splicing, and manufacturing of primary structural members of their replacement, when replacement is by fabrication such as riveting or welding, are airframe major repairs:
- (A) box beams;
 - (B) monocoque or semimonocoque wings or control surfaces;
 - (C) wing stringers or chord members;
 - (D) spars;
 - (E) spar flanges;
 - (F) members of truss-type beams;
 - (G) thin sheet webs of beams;
 - (H) keel and chine members of boat hulls or floats;
 - (I) corrugated sheet compression members which act as flange material of wings or tail surfaces;
 - (J) wing main ribs and compression members;
 - (K) wing or tail surface brace struts;
 - (L) engine mounts;
 - (M) fuselage longerons;
 - (N) members of the side truss, horizontal truss, or bulkheads;
 - (O) main seat support braces and brackets;
 - (P) landing gear brace struts;
 - (Q) axles;
 - (R) wheels;

- (S) parts of the control system such as control columns, pedals, shafts, brackets, or horns;
 - (T) repairs involving the substitution of material;
 - (U) the repair of damaged areas in metal or plywood stressed covering exceeding six inches in any direction;
 - (V) the repair of portions of skin sheets by making additional seams;
 - (W) the splicing of skin sheets;
 - (X) 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;
 - (Y) repair of fabric covering involving an area greater than that required to repair two adjacent ribs;
 - (Z) replacement of fabric on fabric covered parts such as wings, fuselages stabilisers, and control surfaces;
 - (AA) repairing, including re-bottoming, of removable or integral fuel tanks oil tanks;
- (ii) Powerplant major repairs. Repairs of the following parts of an engine and repairs of the following types, are powerplant major repairs:
- (A) separation or disassembly of a crankcase or crankshaft of a reciprocating engine equipped with an integral supercharger;
 - (B) separation or disassembly of a crankcase or crankshaft of a reciprocating engine equipped with other than spur-type propeller reduction gearing;
 - (C) special repairs to structural engine parts by welding, plating, metalising, or other methods.
- (iii) Propeller Major Repairs. Repairs of the following types to a propeller are propeller major repairs:
- (A) any repairs to or straightening of steel blades;
 - (B) repairing or machining of steel hubs;
 - (C) shortening of blades;
 - (D) re-tipping of wood propellers;
 - (E) replacement of outer laminations on fixed pitch wood propellers;
 - (F) repairing elongated bolt holes in the hub of fixed pitch wood propellers;
 - (G) inlay work on wood blades;
 - (H) repairs to composition blades;
 - (I) replacement of tip fabric;
 - (J) replacement of plastic covering;
 - (K) repair of propeller governors;
 - (L) overhaul of controllable pitch propellers;
 - (M) repairs to deep dents, cuts, scars, nicks, etc., and straightening of aluminum blades; and
 - (N) the repair or replacement of internal elements of blades;
- (iv) Appliance major repairs. Repairs of the following types to appliances are appliance major repairs:
- (A) calibration and repair of instruments;
 - (B) calibration of avionics or computer equipment;
 - (C) rewinding the field coil of an electrical accessory;
 - (D) complete disassembly of complex hydraulic power valves;
 - (E) overhaul of pressure type carburetors, and pressure type fuel, oil, and hydraulic pumps.

Regulation 25

Preventive maintenance under regulation 25 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 30

One hundred-hour inspections under regulation 30 shall meet the following minimum standards for its performance:

- (a) a person authorized 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 authorized 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—
 - (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;
 - (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;
- (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;
 - (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 34

The content and form of the Maintenance, Preventive Maintenance and Rebuilding Record under regulation 34 shall meet the following minimum standards:

- (a) appropriately authorized persons may maintain or perform preventive maintenance, 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 in Figure 1A and 1B 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 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 Organization 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 authorized representative of the Approved Maintenance Organization and incorporating the following information:
 - (I) identity of the aeronautical product;
 - (II) if an aircraft, the make, model, serial number, nationality and registration marks, and location of the repaired area;
 - (III) if an aeronautical product, give the manufacturer's name, name of the part, model, and serial numbers (if any); and
 - (IV) include the following or a similarly worded statement:

The aeronautical product identified above was repaired, overhauled and inspected in accordance with currently effective, applicable instructions of the State of Design and regulatory requirements of the Authority, and is approved for return to service.

Pertinent details of the repair are on file at this maintenance organization.

Order No. Date

*Signed
(Signature of authorized representative)*

*.....
(Facility Name) (Approved Maintenance Organization Certificate Number)*

*.....
(Address)*

Figure 1A.

MAJOR REPAIR AND MODIFICATION (Aircraft and Aeronautical Products)				Trinidad & Tobago Civil Aviation Authority	
				For CAA Use Only	
				Office Identification:	
Reference: Civil Aviation [(No. 5) Airworthiness] Regulations, 2004				INSTRUCTIONS: Print or type all entries.	
1. Aircraft	Make:		Model:		
	Serial Number:		Nationality and Registration Mark:		
2. Owner	Name (As shown on registration certificate):		Address (As shown on registration certificate):		
3. For Authority Use Only					
4. Unit Identification					
				5. Type	
Unit	Make	Model	Serial Number	Repair	Modification
Airframe					
Power plant					
Propeller					
Appliance	Type				
	Manufacture				
6. Conformity Statement					
A. Organization Name and Address		B. Kind of License or Organization		C. Certificate or License Number	
		<input type="checkbox"/> Licensed (AME) <input type="checkbox"/> A <input type="checkbox"/> P or <input type="checkbox"/> V/P <input type="checkbox"/> Approved Maintenance Organization <input type="checkbox"/> Manufacturer		(For an AMO include the appropriate ratings issued for the major repair or modification)	
D. I certify that the repair or modification made to the unit(s) identified in item 4 above and described on the reverse or attachments hereto have been made in accordance with the requirements of the Civil Aviation [(No. 5) Airworthiness] Regulations, 2004 and that the information furnished herein is true and correct to the best of my knowledge.					
Date:			Signature of Authorized Person:		
7. Approval for Return To Service					
Pursuant to the authority given persons specified below, the unit(s) identified in item 4 was inspected in the manner prescribed by the Authority and is <input type="checkbox"/> APPROVED <input type="checkbox"/> REJECTED					
BY	<input type="checkbox"/> CAA Inspector	<input type="checkbox"/> Inspection Authorization		Other (Specify)	
	<input type="checkbox"/> Maintenance Organization	<input type="checkbox"/> Other			
Date of Approval or Rejection:		Licence or Certificate:		Signature of Authorized Person:	

Figure 1B**NOTICE**

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

8. Description of Work Accomplished

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

Regulation 35

Records of the overhaul and rebuilding of an aeronautical product under regulation 35 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 Authorization (PMA) or Technical Standard Order (TSO);
- (b) having satisfied paragraphs (1), the authorized 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 organization approved by the manufacturer and authorized by the State of Registry will be the only organizations to perform rebuilding of aeronautical products;
 - (ii) the manufacturer of the component or the organization approved by the manufacturer and authorized 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 25(f) provides that a manufacturer holding an Approved Maintenance Organization Certificate may rebuild any aeronautical product manufactured by the manufacturer under a type of production certificate, a Technical Standards Order Authorization, 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 Trinidad and Tobago 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 36

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 [(No. 2) Operations] Regulations, 2004, the Civil Aviation [(No. 3) Air Operator Certification and Administration] Regulations, 2004 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) in 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.

Made by the Authority this 19th day of March, 2004.

R. LUTCHMEDIAL
Civil Aviation Authority

Approved by the Minister of Works and Transport.

F. A. KHAN
Minister of Works and Transport

Laid in the House of Representatives this day of , 2004.

Clerk of the House

Laid in the Senate this day of , 2004.

Clerk of the Senate