



GOVERNMENT OF INDIA  
**OFFICE OF THE DIRECTOR GENERAL OF CIVIL AVIATION**  
TECHNICAL CENTRE, OPP SAFDURJUNG AIRPORT, NEW DELHI

**CIVIL AVIATION REQUIREMENTS**  
**SECTION 2 - AIRWORTHINESS**  
**SERIES 'E', PART I**  
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**EFFECTIVE: FORTHWITH**

**SUBJECT: APPROVAL OF ORGANISATIONS**

**1. INTRODUCTION:**

- a) Rule 133B of the Aircraft Rules 1937, lays down the requirements for grant of approval to Organization engaged in manufacture, maintenance, modification, repair, inspection, processing, testing, Storage and distribution of civil aircraft, aircraft components, items of equipment, aircraft goods and Training School and specifies the standards to be followed by these organization(s).
- b) This CAR stipulates the general requirements, procedures and practices to be adhered to by organizations seeking DGCA approval for manufacture, maintenance, modification, repair, inspection, processing, testing, storage and distribution of civil aircraft, aircraft components, items of equipment, aircraft goods and Training School.
- c) Organization/s engaged in any one or more of the activities mentioned above shall perform so only after the grant of Certificate of Approval and such organizations be called as Approved Organizations (AO) meeting the requirements of this Series of the CAR.
- d) The approval when granted will apply to the whole organization having an Accountable Manager acceptable to DGCA.
- e) An organization, which is located within the territories of India, will be granted approval when it is in compliance with this series of the CAR.
- f) An organization that is located outside the territories of India will only be granted approval if DGCA is satisfied that there is a need for such approval to maintain Indian registered aircraft/ engine/ components for installation on an Indian registered aircraft and when in compliance with this series of the CAR and AAC 4 of 1998.

The approval to organizations is based on the concept of "Delegated system of responsibility. The approved organization is primarily responsible for adhering to the airworthiness/safety requirements laid down by DGCA and manufacturer of aircraft engine and components and for carrying out day-to-day activities in accordance with the scope of approval granted. The role of DGCA is to carry out airworthiness oversight of organization's activity with a view to detect any deficiency in the system in adhering to airworthiness standards and suggest appropriate corrective actions.

This Civil Aviation Requirement is issued under the provision of Rule 133A.

**2. APPLICABILITY**

2.1 This CAR is applicable to all organizations engaged in manufacture, processing, testing of aircraft, aircraft components, items of equipment and Training Schools and specifies the standards to be followed by these organization/s.

2.2 This CAR is also applicable to organizations involved in the maintenance of small aircraft used for non-commercial operations, and components intended for fitment thereto.

Note: 'Small Aircraft' means an aircraft, classified as an aeroplane with a maximum take-off mass of less than 5700 kg, or a single engined helicopter.

2.3 An organization may seek approval under this CAR in any one or more of the following categories: -

Category	Area of activity	Scope of Category
A	Manufacturers	Manufacture of aircraft/ aircraft goods including aircraft components and items of equipment.
B	Workshop Process and Inspection	Processing of aircraft components by electroplating, anodic treatment, metal spraying, heat treatment etc. of components and inspection of materials and components by non-destructive methods
C Note: See applicability above	Aircraft Maintenance Organization	Maintenance of airframe, engines, electrical system, instruments system, radio system and associated parts and any of the components installed on the aircraft.
D	Test Laboratories	Chemical analysis physical tests and metallurgical tests and check of the master gauges/ instruments.
E	Fuel Lubricants and Special products	Bulk storage, compounding, blending and distribution of aviation fuels, lubricants and petroleum products, including Fueling/ Defuelling of aircraft.
G	Training Schools	Imparting instruction for ab-initio training in the field of aircraft maintenance engineering and/or conducting courses for Licensing/ approving/ authorizing individuals for certifying airworthiness.

Note: For seeking approval in any of the categories the applicant shall comply with the general requirements of this part of the CAR and shall additionally comply with the specific part of this Series E for the category applied for.

**3. DEFINITIONS:**

**Accountable Manager** is the manager who has corporate authority for ensuring that all tasks as per the scope of approval of the approved organization can be financed and carried out to the standard required by DGCA.

**Approved Maintenance Organization (AMO)** means an organization approved by DGCA in Category "C".

**Approved Organization (AO)** means an organization approved by DGCA engaged in manufacture, maintenance, processing, testing, storage and distribution of civil aircraft, aircraft components, items of equipment, aircraft goods and Training School.

**Aircraft Goods** mean aircraft components or materials, including paints, dopes, thinners, fuels lubricants and special petroleum products, intended for use in civil aircraft and which are required to be produced and certified in conformity with an approved specification, drawing or process.

**Certificate of Approval** means a document issued to an organization approved by DGCA and defining the scope of approval granted.

**Certificate of maintenance** is a certificate issued in respect of an aircraft, aircraft component/item of equipment by appropriately licensed AME, approved person or authorised person after carrying out servicing, modification, repairs, replacement, overhaul, process, treatment, test, operation and inspection, certifying that the work has been performed in accordance with the Airworthiness Requirements stipulated by DGCA.

**Item of equipment** means any self-contained unit which, when attached to or installed in an aircraft, performs a function essential under certain operating conditions of airworthiness or safety of the aircraft or its occupants.

**Psychoactive substances:** Alcohol, opioids, cannabinoids, sedatives and hypnotic, cocaine, other stimulants, hallucinogens, and volatile solvents (coffee and tobacco are excluded).

**Problematic use of substances:** The use of one or more psychoactive substances by aviation personnel in a way that:

- a) Constitutes a direct hazard to the user or endangers the life, health or welfare of others; and/or
- b) Causes or worsens an occupational, social, mental or physical problem or disorder.

**Quality control** is a management system for programming and coordinating the ongoing quality and improvement efforts of the various groups in an organization in accordance with the requirements of DGCA and any specific requirement of the organization or customer.

**Quality Control Manual** is a document, which describes the operator's procedures and practices in detail, the observance of which will ensure compliance with the airworthiness and safety requirements of DGCA and the manufacturer of the aircraft, aircraft component, item of equipment as per the scope of approval granted.

**Quality assurance** is an independent body with an overall authority for the supervision of quality standards, enabling the standards set by the system of quality control to be enforced.

**Quality assurance Manual** is a document detailing the program and procedures to monitor compliance with and adequacy of procedures as detailed in the Quality Control Manual.

**Release note** means a document accompanying the sale of aircraft components, spares, materials and goods and certifying that the same were obtained from an approved source, after manufacture/repair/overhaul and all the relevant airworthiness requirements of the DGCA are satisfied.

**Rejection note** means a document issued by an approved organization for the purpose of advising details of the rejection of certified aircraft goods, which fail to meet applicable requirements.

#### **4. PROCEDURES FOR GRANT OF APPROVAL TO ORGANIZATION/S:-**

Granting of the approval in any category will be dependent upon the request of the applicant and his capability/ capacity to perform the work as adjudged by DGCA. The scope of approval will be specified in Certificate of Approval/ Capability List while granting initial approval or extending the approval of the firm. Part approval or provisional approval shall not be granted. The scope of approval for routine maintenance of aircraft shall not be less than 100 hours inspection schedule.

Organization seeking approval in any of the categories shall comply with the general requirements in the following:-

##### **4.1 Application and Issue of Approval**

##### **4.2 Facility Requirements**

##### **4.3 Personnel Requirements**

##### **4.4 Quality System**

#### **4.1 APPLICATION AND ISSUE OF APPROVAL**

- a) Application for issue of organization approval or for amendment of certificate of approval already granted to approved organization shall be made on a form and in a manner prescribed by DGCA along with the necessary fees.
- b) Organisation located within India shall submit duly completed application in form CA182 A (Appendix 'A') to the concerned Regional Airworthiness /Sub-Regional Airworthiness Office along with fees (Appendix 'B') and a statement signed by the Accountable Manager (Appendix 'C') confirming that the Engineering organization manual and any associated manuals are in compliance with DGCA regulations and requirements and will be complied with at all times.

- c) Organisation located outside India shall submit duly completed application to Director General of Civil Aviation (Attn. Director of Airworthiness.), Technical Center, Opp. Safdarjung Airport, New Delhi (India) -1100 03. on Form CA 182 C (Appendix 'D') along with the fees (Appendix 'B') and a statement signed by the Accountable Manager (Appendix 'C') confirming that the Engineering organization manual and associated manuals are in compliance with DGCA regulations and requirements and will be complied with at all times. They shall also submit a duly completed internal audit report.

Note 1: Approval of foreign organizations will be affected by DGCA Headquarters.

Note 2: Approval of Indian organizations will be affected by Director of Airworthiness of the concerned Regional Office, where the facility is located. In case the Indian organisation desires to carry out maintenance schedules higher than Daily Inspection of their fleet outside India, DGCA Hdqrs shall grant such approvals.

#### **4.1.1 Inspection**

On receipt of completed application form arrangements will be made for a representative of DGCA to visit and inspect the organisation.

Each AO shall allow DGCA to inspect the facilities, at any reasonable time, to determine its compliance with the requirements. The inspection covers the adequacy of the maintenance facility, inspection system of the AO, records, and general ability of AO to comply with this CAR. After such an inspection is made, AO is notified, in writing, of any deficiencies found during the inspection.

It will be the function of the departmental representative, in course of his visit to satisfy himself that the organization can satisfactorily accomplish the work relevant to the "scope of approval" applied for in accordance with the requirements of this CAR.

Subject to the satisfactory report being made by the representative of this department, the organisation will be authorised to undertake the work and issue 'release notes', 'certificate of maintenance', 'certificate of manufacture' and 'test report' in respect of manufacturer/ maintenance/ modification/ inspection/ testing/ repair etc. Training Schools shall issue Certificate of Completion on the completion of the course. The Organisation shall be approved initially for a period not exceeding one year and renewed thereafter for a period of one year. The form and manner of the certificate/note shall have the prior approval of this department. The specimen copy of such certificates/notes shall be attached to the application form. On organisation being granted approval, a certificate will be issued to the organisation, stating the scope of approval by DGCA. The approval number will be quoted in all such maintenance certificates/notes.

#### **4.1.2 Scope of Approval.**

The issue of Certificate of Approval to an organization indicates the grant of approval by DGCA. The certificate of approval will specify the scope of approval.

The Quality Control Manual of an approved organization shall reflect the scope of approval granted by DGCA.

#### **4.1.3 Display of Certificate of Approval**

Each AO shall display the Certificate of Approval at a prominent place in the organization and it shall be available for inspection by the DGCA.

### **4.2 FACILITY REQUIREMENTS**

#### **4.2.1 General Requirements**

- a) Appropriate facilities must be provided for all planned work, ensuring in particular protection from the weather elements. Specialized workshops and bays must be segregated to ensure that there is no contamination of work area.
- b) Adequate office accommodation must be provided for the management of planned work including in particular quality control department, inspection office, technical records section and planning department, etc.
- c) Adequate office accommodation shall also be provided in the manufacture/maintenance facility wherever considered necessary for officers of Airworthiness Dte., for carrying out the oversight activity in an effective manner.
- d) The working environment in the facilities must be adequate and appropriate for the work carried out and in particular, special requirements, such as dust free, humidity and temperature control, etc. is observed. Unless otherwise required by the particular task environment, working environment must be such that the effectiveness and efficiency of personnel is not impaired.
- e) Adequate storage facilities must be provided for storing aircraft components, equipment, tools and material. A separate bonded store for storing serviceable aircraft components and material and separate stores for unserviceable aircraft components, material, equipment and tools should be provided. The conditions of storage shall be in accordance with the manufacturers instructions to prevent deterioration and damage of stored items. Environmental conditions of the stores must provide for temperature, humidity control to prevent deterioration and damage to the components, equipment, tools and materials.
- f) Access to storage facilities must be restricted to authorize personnel only.
- g) The storage and handling procedure for Electro Static Device components are detailed in AAC 6 of 2000 for guidance.
- h) Training Schools seeking approval in Category 'G' need to meet the requirements of CAR Sec-2, Series E Part VIII

#### 4.2.2 Equipments tools and materials: -

- a) The organisation must have the necessary equipment, tools and material to perform the work in accordance with the scope of approval granted.
- b) Where necessary, tools, equipment and particularly test equipment must be controlled and calibrated to standards acceptable to DGCA at the specified frequency to ensure serviceability and accuracy. The records of such calibration and the standards used must be preserved by the organisation.

#### 4.2.3 Literature

- a) The organisation must hold and use applicable current literature issued by the manufacturer(s) in the performance of task as per the scope of approval.
- b) The literature shall also include the following as applicable to the scope of approval:-
  - (i) Aircraft maintenance manual (AMM)/ Component maintenance manual (CMM) CAR, Advisory Circulars and any other circulars issued by DGCA from time to time;
  - (ii) Any applicable Airworthiness Directive issued by the State of Design.
  - (iii) Any applicable literature/data, such as but not limited to Aircraft Maintenance Manual (AMM), Structure Repair Manual (SRM), Illustrated Parts Catalogue (IPC), Wiring Diagram Manual (WDM), Components Maintenance Manual (CMM), Service Bulletins (SBs), Service Information Letters (SILs), MMEL issued by the manufacturers/ Supplementary type certificate holders etc.. and any other organisation approved to publish such data by the said authority;
  - (iv) Any applicable standard, such as, but not limited to, maintenance standard directive issued by any authority, institute or organisation recognised by DGCA as a good standard for maintenance'
  - (v) Any applicable data issued in accordance with paragraph ( c).
- c) Organization must ensure that approved data (literature) controlled by the organization is kept up to date at all times.

### 4.3 PERSONNEL REQUIREMENTS

**4.3.1 An Accountable Manger** acceptable to DGCA shall be nominated by the organization. He can be either a Chief Executive/Managing Director/President/Vice President/ Dy. MD/or any other person acceptable to DGCA who has the necessary financial authority to ensure compliance of safety requirements.

The Accountable Manager may delegate his authority in writing to another person in the organization having the necessary financial authority, such person then becoming the Accountable Manager for the purpose of this CAR.

The duties of the Accountable Manager shall encompass the following:

- a) Ensure that all activities including quality monitoring, are organized, managed and supervised. This also includes contracting and surveillance regarding sub-contracting work.
- b) Ensure that appropriate instructions are developed, maintained, documented and followed for compliance with the requirements including payment of any charges.
- c) Ensure that all personnel are appropriately trained and qualified to accomplish the work.
- d) Ensure that suitable facilities (workshops and equipment) and necessary material (components, spare parts etc.) are available, enabling the organisation to work as per the scope of approval granted.

#### **4.3.2 Quality Control Manger/Dy. Quality Control Manger**

A duly qualified and experienced person shall be nominated to function as **Quality Control Manager** who shall be approved by DGCA. Dy. QCM (s) who also requires to be approved by DGCA may assist the QCM. QCM / Dy.QCM(s) shall be responsible to ensure that the organization is in compliance with CAR requirements. The QCM must be directly responsible to the Accountable Manager.

The scope of approval of an organization will depend on the capacity of the organization to undertake the job, the availability of equipment, and technical literature and will be commensurate with the qualification of Quality Control Manager and Dy. Quality Control Manager and the rest of the inspection staff employed on regular basis.

It shall be the responsibility of Quality Control Manager to seek prior concurrence of Regional Airworthiness Office before entrusting the work to temporarily hired AMEs.

Before approval is granted, the qualification and experience of QCM /Deputy QCM(s) will be examined by DGCA. DGCA will satisfy itself about the suitability of QCM/ Deputy QCM(s) by subjecting him to such examination as considered necessary. If the accepted QCM ceases to hold the position, the appointment of his successor must be simultaneously proposed by the approved organization for the approval by DGCA. QCM will have under his control num of approved personnel who will be experience knowledgeable and skill full in the specific activity of their respective scope of approval for the purpose of certification of the quantity of the product at various stage of manufacture /maintenance/inspection /repair/processing etc.,

The QCM and Dy QCM shall be individually/jointly fully conversant with the entire work covered by the scope of approval granted.

#### **4.3.3 The organization must have :-**

- a) sufficient number of personnel to plan, perform, supervise, inspect and certify the work commensurate with the scope of approval and extent of work.
- b) Adequate number of Persons holding appropriate AME license/ authorization/approval for certifying task within the scope of approval.

Organization carrying out overhaul, repair, modification, testing of aircraft components must employ sufficient number of personnel issued with approval for carrying out shop activities in accordance with the scope of approval granted by DGCA.

The competency of personnel involved in maintenance must be in accordance with the standards acceptable to DGCA

**Note:** The requirements for training schools seeking approval in Cat "G" need to refer CAR Series E part VIII for the details of personnel and other facility requirements.

#### **4.3.4 Personnel Requirements for aircraft operators contracting their aircraft maintenance to AMO**

The owner/operator shall also be accountable and responsible to DGCA for compliance of all Airworthiness and Safety related aspects and standards.

The owner/operator of state government, aerial work, general aviation & private category aircraft who have contracted maintenance of their aircraft to an AMO shall comply as follows:-

##### **a) NODAL OFFICER:-**

- i) The owner/operator shall appoint a nodal person called as **NODAL OFFICER** who shall be responsible for in-house implementation and monitoring of the Quality Control cum maintenance functions and adherence to procedures and practices in consonance with Civil Aviation Requirements.
- ii) The nodal officer shall be reporting to the Head of the Organization.

##### **b) Qualifications and Experience for nodal officer**

- i) A sufficiently senior person in the department having five years of aviation experience capable of carrying out the functions enumerated below will be nominated by the owner/operator to the Regional Airworthiness Office for acceptance.
- ii) Regional Airworthiness Office on being satisfied that the person is capable to carry out the functions enumerated will accept him.

##### **c) Functions of the Nodal Officer :**

The following measures will help in further enhancing the airworthiness control system of the small aircraft operators

- i) Ensure that detailed work scope and its accomplishment is made available to him by the AMO entered into contract for carrying out maintenance activities.
- ii) Ensure regular receipt of aircraft specific technical literature and their amendments, making it available with the AMO and its inclusion in the work scope.

- iii) Carry out checks/surveillance inspection while the maintenance is in progress.
- iv) The nodal officer shall be responsible to ensure availability of all special tools and fixtures, under his control, required for performance of maintenance tasks undertaken by AMO and maintain a list of such inventories and verify the availability of the same from time to time.
- v) The nodal officer of the operator shall be responsible to provide required spare parts and components from approved sources with appropriate documents before use on the aircraft owned/operated by his organization.

The above requirement shall be implemented on or before **31.10.2002**.

#### **4.3.5 Certifying Staff as applicable to the AO**

- a) The organization must employ sufficient number of licensed/ authorised/ approved personnel (including unlicensed category of personnel such as technicians) required for production and certification in proportion to the quantum of the work and appropriate to the approval sought. The organization must ensure that the certifying staff (type rated AMEs/authorized/approved persons) is/are fully aware of the organization policies and procedures as detailed in the QC Manual.
- b) The organisation must ensure that all certifying staff issuing any certificate of maintenance is involved in at least 6 months of actual aircraft maintenance experience in the preceding 24 months.
- c) The organisation must ensure that all certifying staff issuing certificate of maintenance get sufficient refresher course (continuation training) in each 2-year period to ensure that such certifying staff have up to date knowledge of relevant technology, organisation procedures and human factor issue.
- d) The organisation must establish a program for conducting refresher course (continuation training) to ensure compliance with the above paragraphs. This program should be reflected either in organization's QC Manual or Training Manual.
- e) The organisation will ensure that the certifying staff has the necessary competency, knowledge, experience and capability to carry out intended certifying duties.
- f) The organisation must maintain a record of all certifying staff, which must include the details of AME license/authorization/approval held, all training completed and the scope of their license rating/authorization/approval. The record must include those issued with limited/one time authorization or approval. Further, the records of persons issued with Certificate of Competency (C of C) must also be maintained in the same manner.
- g) The certifying staff must be provided with a copy of the approval granted by the organisation. DGCA will issue license/authorisation/C of C/ approval as applicable
- h) The certifying staff must be able to produce their license/authorization/approval/C of C to any authorised person of DGCA on demand within a reasonable time.

- i) The operator shall ensure through periodical medical checks that there is no physical disability to any one of the licensed, approved/authorised persons which may come in the way of efficient discharge of their functions.

#### 4.4 QUALITY SYSTEM

Approved Organization shall establish:-

- (a) procedure(s) acceptable to DGCA to ensure good maintenance practices and compliance with all relevant requirements specified in this CAR so that the tasks are accomplished and released to service after ensuring its Airworthiness.

- (b) **Quality control Cell:-**

Quality Control Cell to monitor

- i) Product standards
- ii) Compliance with adequate procedures, to ensure good maintenance practices stipulated by the manufacturers and Aircraft Rules, applicable CARs and any instruction issued by DGCA from time to time.
- iii) Airworthiness of aircraft, engine/ components;

- (c) **Quality assurance**

Quality Assurance unit which shall be an independent body with an overall authority for the supervision of quality standards, enabling the standards set by the system of quality control to be enforced. The Quality Assurance department shall have a Quality assurance program (internal audit system) to monitor adherence to the maintenance program/laid down standards. Monitoring can be complied by means of spot checks and internal audit (surveillance) by the QA team. Frequency of the internal audit and the personnel carrying out internal audit should meet the satisfaction of DGCA. Internal audit shall be carried out twice a year covering the entire activities of the organization.

Note:- Internal audit of the quality system of small operator may be contracted to another AO or a person with adequate audit experience acceptable to DGCA and

- (d) Accountable Manager must ensure that the necessary corrective action is taken promptly on the observations made by the Audit Team during spot checks internal audit. A report of internal audit along with the observations shall be submitted to the Accountable Manager and Regional Airworthiness Office followed by a final report on the corrective actions taken.
- (e) Approved Organization, in addition to monitoring maintenance activities on a day to day basis, shall also carry out in-house audit at least twice a year with a minimum gap of 4 months between each audit, covering the entire scope of

approval granted by DGCA. A copy of the safety audit report along with remedial action taken by the QCM shall be reported to Regional/Sub-regional offices at the earliest. DGCA shall not take any disciplinary action on the basis of internal safety audit report provided necessary corrective action is initiated. The procedure followed for in-house audit shall be reflected in the Quality Control Manual.

#### **4.4.1 Manuals:-**

The organization seeking approval will prepare and submit to DGCA following manuals in triplicate:-

- a) Engineering Organization Manual;
- b) Quality Control cum Assurance Manual (Operators Maintenance Control Manual)
- c) Maintenance System Manual. (Maintenance Organization's Procedures manual)

The manuals may be amalgamated (merged) provided details of aspects mentioned below under each of the manuals are not omitted.

- a) Engineering Organization Manual:** (This manual is not required to be approved by DGCA but its content may influence DGCA's decision concerning grant of approval.)

The manual shall contain:-

- i) A chart or description of the organization. The organizational chart must describe, at a minimum the management personnel and major functions. However, it is recommended that the chart cover the operator's entire organization.
- ii) The duties and responsibilities and authority of management and inspection personnel.
- iii) A general description of the facilities at every approved location.
- iv) Scope of work authorized by DGCA.
- v) A list of contract organizations. The list shall include organizations with whom the certificate holder has arranged to perform any of its maintenance, including a general description of the work and how quality is monitored.

- b) Quality Control and Assurance Manual (Appendix G)**

(Regional Office shall approve Quality Control Manual in case of organizations based in the respective region, except for Indian Airlines, which will be approved by Headquarters).

#### **Quality Control Manual – Volume I**

This Quality Control Manual defines the quality policy followed by Engg Department, adherence of which will ensure highest degree of Airworthiness Standards and Safety of Operations and forms the basis for maintenance approval.

The Quality Control Manual shall contain detailed policies, procedures, practices and Quality Control methods to be followed by the organisation and its maintenance & inspection personnel in accordance with Aircraft Rules, AICs , Civil Aviation Requirements , Advisory Circulars , manufacturer requirement and any other related requirements etc. The purpose of this Manual is to keep the Inspection personnel posted with the Inspection requirements, the procedures to be followed and their responsibilities to ensure the compliance of various requirements.

This Manual is a dynamic document and will be kept continuously updated by the Quality Control Department as and when there are changes to manufacturers requirements, applicable Aircraft Rules, Civil Aviation Requirements and any instructions issued by DGCA from time to time. All pages of the Quality Control Manual shall be approved and stamped by DGCA. Similarly any amendments to the manual will be incorporated only after approval by DGCA.

The contents, chapters and items mentioned in the QC Manual shall be in accordance with the standardized QC Manual enclosed as Appendix. The compliance date for this requirement for existing operator is **1.6.2003**. However, organizations seeking initial approval after 1<sup>st</sup> October 2002 shall formulate the Quality Control and Quality Assurance Manual in accordance with the standardized QC Manual

The Quality Control Manual of fuel companies shall be submitted for approval at DGCA Hdqrs.

Airworthiness Directorate at DGCA Hdqrs will approve the Quality Control Manual of foreign maintenance organizations.

### **Quality Assurance Manual –Volume II**

(This manual need not be approved by DGCA but the contents of this manual shall be in accordance with the Appendix enclosed)

An approved maintenance organization should establish a Quality Assurance System to monitor compliance with and adequacy of procedures as detailed in the Quality Control Manual to ensure safe maintenance practices and airworthiness of the aircraft.

The operator shall prepare a Quality Assurance Manual detailing the program and procedures.

The Quality Assurance manual shall define the qualification and experience, duties and responsibilities of the Quality Assurance personnel. It is desired that the QA persons should be highly experienced and have the rating/ approval in the area of their work. They should be free from certification duties so that their decisions are not influenced by production/certification considerations. The Quality Assurance personnel shall give feed back to Quality Assurance manager who in turn shall directly report to the Accountable Manager to ensure corrective action as necessary.

The Quality Assurance reports should be accessible to DGCA officers for scrutiny.

The Quality Assurance manual shall essentially cover Quality Assurance Procedures, Practices and Programme formulated by the organization.

**c) Maintenance System Manual:**

(To be approved by Regional Airworthiness Office in consultation with DGCA Hqrs.)

The purpose of this manual is to consolidate the information for the guidance of the engineering staff to ensure aircraft's continued airworthiness and safety as well as safety of personnel engaged in such operation.

The manual shall contain :-

Procedures that should be followed while performing any maintenance of the certificate holders aircraft, including airframes, aircraft engines, propellers, rotors, components and emergency equipment. These procedures shall include:-

- i) All maintenance is performed in accordance with the manufacturers and DGCA instructions from time to time.
- ii) Competent personnel, adequate facilities, and equipment are provided for accomplishing maintenance.
- iii) Each aircraft issued with FRC is airworthy and properly maintained.
- iv) Those items of maintenance that must be inspected are designated. The designations shall include at least those items, which, if maintenance is not performed properly or if improper parts or materials are used, could result in a failure, malfunction, or defect endangering the safe operation of the aircraft.
- v) Methods of performing required inspections and the designations of personnel entitled to perform inspections are in the manual.
- vi) Procedures are included for re-inspecting work performed under previous inspection findings (rejected item procedures)
- vii) Procedures are included which state the standards and limits for the acceptance or rejection of inspection items.
- viii) Procedures are included to ensure that all required inspections are performed.
- ix) Procedures are included to ensure that any maintenance not completed as a result of shift change or similar interruptions are properly completed before the aircraft is released to service.
- x) A list of required maintenance related forms and the requirements for preparation.
- xi) The classification of the main bases and route stations and type of maintenance work which they are equipped to undertake.
- xii) Procedure for certification of aircraft by other organisations at places where the firm's own staff is not available
- xiii) Procedure for use of spares obtained from others under a "Pool arrangement."
- xiv) Detailed procedure for certification of documents connected with the release of aircraft by the 'Maintenance' to 'Operations' at the main bases as well as at the route stations.

- xv) Procedure for duplicate inspection of flight and engine controls whenever disturbed.
- xvi) Protective or inhibiting treatment for preventing deterioration due to corrosion/long storage, etc. of aircraft, aircraft component and equipment.

#### **4.4.2 Form of Manuals :**

The manuals specified in para 5 may consist of one or more volumes and

- a) should be of "loose leaf form" with each page bearing the page number, the number of the Part, Chapter or Section and date of latest issue.
- b) shall contain a satisfactory method of identifying revisions and amendments since last issue of the page concerned.

Note:- This may be achieved by means of a vertical black line along the left hand margin of the text.

- c) shall have provision for indexing the contents and for recording revisions, amendments.

#### **4.4.3 Approval of Manuals :**

Three copies of each Manual prepared by the organisation in accordance with the above paragraphs shall be submitted to DGCA/ Regional Airworthiness Office of the Department for approval. One copy would be returned to the Organisation/ after indicating approval thereon with signature office stamp of the QC Manager.

#### **4.4.4 Distribution of Manuals:**

- i) An organisation is required to furnish controlled copies of the Manuals to such of its personnel as the organization considers necessary and to all external organisations or persons performing maintenance on behalf of the organisation.
- ii) The organisation shall supply sufficient number of each manual to the Director General of Civil Aviation for distribution amongst the concerned Regional Offices.
- iii) The organisation must ensure that a copy of each Manual is kept in a convenient and accessible place for use by all members of the organisation's personnel, who have not been furnished with a copy. This requirement is also applicable to outstations places.

#### **4.4.5 Revision and amendments of Manuals:**

- i) The manuals shall be revised when necessary as a result of change in policy, procedures and equipment or change in operations or aircraft or equipment or as a result of operating experience with existing aircraft or equipment or as required by DGCA.

- ii) Revisions of practices and procedures which affect the airworthiness/safety of an aircraft are subject to prior approval of the DGCA.
- iii) The organization shall be responsible for revision of the Manuals when records indicate that any aircraft, type of aircraft component requires repair, adjustment or other maintenance because of defects, damage wear or deterioration within the current inspection periods.
- iv) An application, together with three copies of the revisions giving reasons for the same shall be forwarded to the Regional Airworthiness office in which the operator's main base is located. One copy when approved will be returned to the main base.
- v) Copies of all additions or amendments are required to be furnished promptly to all persons to whom copies of the Manual have been issued.
- vi) A system shall be instituted by the organisation to ensure (through acknowledgements) that all copies of the manual at all times comply with the requirements of the DGCA and incorporate every approved revision of the Manual.

Note:- The person administering this system should be responsible to the Quality Control department of the Organisation for the detailed application of the requirements of the manual and should be sufficiently senior to discharge the responsibility. Such personnel should be fully aware of the implications of the manual, its revision and amendments.

## **5 AIRCRAFT MAINTENANCE PROCEDURES**

### **5.1 Maintenance Schedule for AMO :**

Approved Organisation shall prepare periodical inspection schedules which shall include routine maintenance of aircraft, aircraft components, items of equipment and special inspections like hard landing, lightning strikes, propellers strike, flight through turbulent weather, foreign object damage etc. There shall also be test flight schedules indicating the circumstances under which test flights are to be undertaken and the persons who would be authorized to dispatch aircraft on test flights.

The inspection schedules shall be so framed that items of inspection will spell out, in clear and precise manner, the scope and extent of inspection to be carried out or alternately there will be indicative guidance for the purpose of making reference to appropriate manufacturer's manual. The schedules shall have provision for affixing signatures by an approved Inspector to indicate the certification of airworthiness of that particular item. The schedule shall conform, in respect of extent, scope and periodicity, to the manufacturer's recommendations, including those specified in Maintenance, Overhaul, Structural Manuals or Service Bulletins, Service letters, etc. Any significant deviation from the manufacturer's recommendations will be introduced only after obtaining specific approval for DGCA. The periodicity of the Inspection Schedule shall be expressed not only in terms of lapsed flying hours but also in terms of lapsed calendar period, wherever necessary, to ensure continued airworthiness of aircraft in the event of low utilization. These schedules will be prepared by the Quality Control Manager of the organization in the case of Scheduled operator with three years of experience as a scheduled operator and also be approved by themselves, however in the case of Scheduled operator with less than three years of

experience the schedules shall be approved by Regional Airworthiness Offices. However in the case of all other organizations engaged in repair/overhaul of aircraft/aircraft components and equipment the Schedules will be submitted by the Quality Control Manager for approval to the respective Regional/Sub Regional Airworthiness Office. After the schedules are approved, no item of Schedule shall be deleted except with the prior concurrence of DGCA. Additions to the Schedules on the basis of operational experience may be made without prior approval of the DGCA but shall be promptly notified to the Regional Airworthiness Office/DGCA.

**5.2 Certificate of Maintenance (Maintenance Release) applicable to AMO.**

- (a) Any maintenance action must be appropriately certified by approved person (s) employed by the AO when satisfied that all required maintenance of the aircraft, engine or component has been properly carried out by the AO in accordance with the procedures specified by the manufacturer /DGCA/ QC Manual of the AO and the aircraft/engine/component is fully airworthy.

**5.3 Reporting of defects or an airworthy condition applicable to AMO**

- (a) AO must report to the DGCA of any condition classified as major defect & observed by the maintenance organization either during maintenance or during operations, which could seriously affect the safety/airworthiness of the aircraft. Such condition should also be reported to the manufacturer. In addition, any defect that causes delay of more than 15 minutes due to engineering defects in the aircraft (applicable to scheduled airlines only) should also be reported to DGCA.
- (b) Major defects and mechanical delay report must be made on a form and in a manner approved by the DGCA within 24 hours of occurrence. The report must contain all pertinent information about the condition(s) known to the AO.
- (c) Where the AO is contracted by an operator to carry out maintenance, such AO must also report such condition, classified as major defect, which affects aircraft or aircraft components.
- (d) The report must be submitted to DGCA as soon as practical but not later than 24 hours of identifying the condition to which the report relates. Thereafter, the detailed report containing all relevant information should be submitted within 3 days.
- (e) Investigation of major defect(s) report should be completed within 3 months.

Delay to a scheduled service of 15 minutes duration or more on account of aircraft defect (whether major or not) shall be reported to Regional Airworthiness Office within 24 hours. The investigation shall be completed as early as possible from the date of occurrence. One copy of the completed investigation report for both major defect/mechanical delays should be submitted to DGCA.

#### **5.4 Components' lives lists :**

A list containing the current life of every major component shall be included in the Maintenance System Manual for the guidance of the staff and the lives shall be revised only with the concurrence of the DGCA.

#### **5.5 Minimum Equipment List**

The operator shall prepare a list of MEL, wherever MMEL is available from the manufacturer and approved by the state of manufacture, which may remain unserviceable under the circumstances to be specified by the operator without jeopardising the safety of aircraft. This list shall be submitted to DGCA for approval before adoption and once approved by the DGCA shall be revised only with the prior approval of the DGCA.

5.6 Approved Organisation shall specify the designation of persons who would be authorised to certify different types of schedules and also to rectify defects experienced in service. The shall also specify the procedure for the scrutiny of these defects by experienced and responsible officials for ensuring adequate rectification.

5.7 Approved Organisation shall specify procedure with regard to taxiing/towing of aircraft and the individuals must be specifically authorised to taxi tow and for parking of aircraft, for refuelling and defuelling of aircraft, for using correct grade of oil, fuel, hydraulic fluid, water methanol, etc. and for checking the contamination of fuel and lubricants before uplift and during long storage in aircraft tanks.

5.8 Approved Organisation shall specify procedures for undertaking ferry flights (with suspended C of A) from outstation to base stations and persons authorised to permit such flights.

5.9 Approved Organisation shall specify procedures for constant monitoring of the operational data, including fuel and oil consumption records, for anticipating defects and taking remedial measures in advance.

5.10 The operator, in addition to monitoring maintenance activities on a day to day basis, shall also carry out in-house audit atleast twice a year with a minimum gap of six months between each audit, covering the entire scope of approval granted by DGCA. A dedicated safety audit team shall carry out this audit. It shall be the responsibility of the Quality Control Manager to take immediate action to rectify the deficiencies reported by the safety audit team. A copy of the safety audit report along with remedial action taken by the QCM shall be reported to Regional/Sub-regional offices at the earliest. DGCA shall not take any disciplinary action on the basis of internal safety audit report. The procedure followed for inhouse audit shall be reflected in the operators Quality Control Manual.

#### **6 Continued validity of approval**

(a) Approval is normally valid upto 31<sup>st</sup> December of the year in which it is issued unless surrendered, superceded suspended, revoked or expired by virtue of

exceeding any expiry date that may be specified in the approval certificate. The approval remaining valid depends upon -

- (i) AO continues to comply with the regulations/requirements/conditions of approval.
- (ii) DGCA being granted access to the maintenance facilities of the AO to determine continued compliance with this CAR.
- (iii) The payment of any charges prescribed by DGCA.

## **7 Renewal of Approval:**

The applicant desirous of renewing the maintenance approval should apply to the Local Airworthiness Office in case of domestic and to DGCA Hdqrs, in case of foreign AO on a prescribed form along with the requisite information and fees at least 30 days before expiry of the approval along with the internal audit report.

- i) Indian organisations: Form CA 182B (Appendix 'E') shall be duly filled at least 30 days prior to the expiry of the approval alongwith the fees (Appendix 'B') and a statement signed by the Accountable Manager (Appendix 'C') confirming that the Engineering organisation manual and any associated manuals are in compliance with DGCA regulations and requirements and will be complied with at all times and submitted to the concerned regional airworthiness office. A copy of the internal audit report not more than 60 days old shall also be accompanied with the renewal application form.
- ii) Foreign organisations: Form CA 182D (Appendix 'F') shall be duly filled at least 30 days prior to the expiry of the approval alongwith the fees (Appendix 'B') and a statement signed by the Accountable Manager (Appendix 'C') confirming that the Engineering organisation manual and any associated manuals are in compliance with DGCA regulations and requirements and will be complied with at all times and submitted to DGCA (Attn. Director of Airworthiness), Technical Centre, Opposite Safdarjung Airport, New Delhi. A copy of the last internal audit report is submitted.
- iii) In the event of organisation wishing to increase the scope of its existing approval, it must make a fresh application to the concerned regional airworthiness office and who on being satisfied that the extension applied for can be carried out in accordance with the requirements may extend the organisation's approval.
- iv) The maintenance facilities of sub-base of an approved organisation shall be approved by the local airworthiness office, where the Sub-base is located. However, a organisation carrying out inspection schedules lower than 100 hours at a sub-base within the country shall not require fresh approval. In such case, inspection schedules as approved at the main base of the organisation shall be followed at the sub-base. The maintenance activities at the sub-base shall be monitored by the local airworthiness office where the sub-base is located.

- v) An organisation carrying out inspection schedules of 100 hours and above at a sub-base shall be approved by the local airworthiness office where the sub-base is located. In such case, inspection schedules as approved for the main base may be adopted.

## **8 Operation of Approved Organisation :**

- 8.1 An organisation which has been granted a Certificate of Approval prior to the promulgation of this Series of Civil Aviation Requirements shall comply with the requirements specified in this series of Civil Aviation Requirements for the grant of Certificate of Approval.
- 8.2 An officer of the Regional Airworthiness Office will visit the premises of the approved organisation for the purpose of reporting on the operation of approval to whom all facilities shall be provided by the organisation.
  - a. In case it is considered necessary that an operators activity is to be supervised on continuous basis by an officer of Regional Airworthiness office, then the operator shall provide suitable accommodation for the purpose within his premises.
  - b. The requirements in relation to approval are subject to revision and a continuance of approval is conditional upon the compliance with the terms of approval, and any other requirements laid down by the Director General of Civil Aviation.
- 8.3 All operator shall ensure that all maintenance personnel are instructed regarding the maintenance method to be employed, in particular when new or unfamiliar equipment is introduced into service.
- 8.4 An operator shall ensure that there is provided a system of inspection to ensure that all maintenance, overhaul, modifications and repairs which affect airworthiness are carried out prescribed in the maintenance manual.
- 8.5 The Quality Control Manager of the organisation shall be responsible to the DGCA for
  - i) the administration and control of all the activities for which approval is granted.
  - ii) compliance with the requirements of its certificate of approval.
  - iii) Airworthiness requirements specified by the DGCA from time to time.
  - iv) It shall also be the responsibility of the Quality Control Manager to ensure that the work done at sub-contractors' facility meets the manufacturers/ DGCA requirements. The QCM/his representative(s) shall carry out periodic inspection to ensure compliance of the above. The procedure followed for sub-contracting the maintenance activities shall be reflected in the Quality Control Manual.

## **9 Safety Oversight of AO**

For various CAR requirements applicable to all AO and small aircraft operators there should be strict compliance and monitoring by the operators themselves for adherence to laid down standards through frequent Safety Audits/Surveillance Checks/ Spot Checks. These reports shall be submitted to DGCA . The deficiencies detected during Surveillance Checks and/or Safety Audit inspections shall be rectified by the AO as agreed in the form CA 2001.

## **10 Maintenance and Preservation of Record**

- (a) AO must record all details of all tasks carried out in a form acceptable to DGCA.
- (b) AMO must ensure that a copy of each Flight Release Certificate carried on board for information to the flight crew that the aircraft has been subjected to maintenance and is fit for operations.
- (c) AO must retain a copy of all inspection records and any associated data for 2 years from the date the aircraft or aircraft component to which the work relates was released from the AO.
- (d) One copy of the documents used in the system of quality control in respect of the activities performed, including all incoming certification documents and Release Note issued by the Organisation, shall, except where otherwise approved by the Director General of Civil Aviation be retained for a minimum period of five years.

## **11 Release and Rejection Notes as applicable to AO:**

11.1 All organisations approved in Category 'F' or organisations otherwise required to have approved stores organisation, will issue aircraft parts/components or items of equipment from their stores under cover of Release Note for use by other organisations. The detailed working of such organisation is covered in CAR series 'E' part VII but the requirements regarding Release Note/Rejection Note are detailed below :

11.2 Release Notes shall be printed containing details given in the sample at Series 'E' Part VII and serially numbered. Distribution of copies of Release Note shall be made as follows:

- 1st copy to the Consignee
- 2nd copy to the organisation's records.

11.3 Release Notes shall be signed by a person(s) approved by the Director General of Civil Aviation and whose name(s) is specified in the Organisation's Quality Control Manual or in the Terms of Approval.

11.4 Release Notes shall accompany the goods to which they relate or alternatively the Release Note and goods shall be identified in such a manner that they can be correlated with each other at any time.

Note :- The latter may be achieved by quoting in the space provided on the Release Note any identification markings on the aircraft goods such as their serial number or by forwarding with the goods and packing slip or label, identifying their related Release Note by Serial number.

11.5 If a Release Note is issued and subsequently varied or canceled both copies shall be suitably endorsed by the signatory.

11.6 A rejection Note which will be serially numbered, shall be issued by an approved organisation to cover the return to the supplier of any aircraft goods received under cover of incoming certification which are found not to comply with applicable requirements as indicated on the Release Note or equivalent approved overseas certification document.

11.7 All supplies made under the cover of Release Notes and returned by the consignee, because of the parts found defective/not complying with the specification shall be promptly reported to the Regional Airworthiness Office with all the relevant details alongwith the rectification action proposed to be taken by the firm and a Rejection Note shall be initiated and distributed as required under.

11.8 Rejection Notes shall provide the information shown in the form at CAR Series 'E' Part VII. They shall be signed by the person authorising the rejection and distributed as follows :

- 1st copy to supplier
- 2nd copy to the Organisation's records
- 3rd copy to the Regional Airworthiness Office

11.9 Where an organisation to whom a Certificate of Approval has been issued, changes its name, the Certificate of Approval and its related terms of approval are no longer valid. Should the new organisation desire to continue in operation as an approved organisation, the DGCA may, upon written application by the new organisation issue it with a Certificate of Approval and terms of Approval.

11.10 Where a new Certificate of approval or a new Terms of approval are issued to an existing approved organisation, the previously issued documents will no longer remain valid and should be returned to the Regional Airworthiness Office.

11.11 The Director General of Civil Aviation may, by notice in writing, suspend, vary or cancel a Certificate of Approval if an organisation fails to comply with the requirements or the approval granted or it is considered necessary to do so in the interest of safety.

## **12 Privileges of the AO**

AO shall carry out only such tasks as approved by DGCA and reflected in the approval certificate. The approval certificate defines the scope of approval granted:

- (a) AO may maintain any aircraft/engine/aircraft components in which it is approved at the locations identified in the approval certificate

- (b) Arrangement for maintenance of any aircraft or aircraft component for which another approves it approved maintenance organization, which has been granted approval for identical work.
- (c) Maintain any aircraft/engine for which it is approved at any location subject to the need for such maintenance arising due to unforeseen unserviceability of the aircraft or from the necessity of supporting occasional line maintenance subject to the conditions specified in the procedure acceptable to DGCA and detailed in the approved Quality Control Manual.
- (d) Maintain any aircraft or any aircraft component at outstation capable of carrying out minor maintenance provided QC manual has listed such station, specifying the extent of maintenance work carried out.
- (e) Issue FRC in respect of paragraph (a) to (d) on completion of the required maintenance tasks.
- (f) The approved organisation may only modify maintenance instructions in accordance with a procedure specified in the maintenance organisation's QC Manual where it can be shown that such modified maintenance instruction results in equivalent or improved maintenance standards and subject to the approval of type certificate holder/Regulatory authority of the country of manufacture/ design/ DGCA India. Maintenance instructions for the purpose of this sub-paragraph mean an instruction on how to carry out the particular maintenance task. The approved organisation may not carry out the engineering design of repairs and modifications under this sub-paragraph.

### **13 Limitations of the AO**

AO may only maintain an aircraft/engine/aircraft component for which it has been approved by DGCA when all necessary facilities, equipment, tooling, material, required literature and adequate number of certified staff are available.

### **14 Changes to AO.**

AO must notify DGCA of any proposal to carry out any of the following changes before such changes take place to enable DGCA to determine continued compliance with this CAR and to amend, if necessary, approval certificate except that in the case of proposed changes in personnel not known to the management before hand, these changes must be notified at the earliest of opportunity -

- (i) Name of the organization or change of ownership
- (ii) Location of the maintenance facilities
- (iii) Additional locations of the maintenance facility(s)
- (iv) Accountable Manager
- (v) Chief QCM/QCM/Dy. QCM/any other person approved by DGCA
- (vi) facilities, equipment, tools, material, procedures, work scope and certifying staff that could affect approval

DGCA may prescribe conditions under which AO may operate during such changes unless it is determined that the approval should be suspended.


**15 Revocation, Suspension, Limitation Or Refusal To Renew Approval Certificate**

DGCA may, after giving the show cause notice to an organization or approved person(s) and after making such inquiry as considered necessary, revoke, suspend, limit or refuse to renew the approval certificate/approval of person, if DGCA is satisfied that the holder of the approval certificate/approval has failed to meet the requirements of DGCA subject to the conditions listed below:

- a) Before revoking, suspending, limiting or refusing to renew the approval certificate/approval, DGCA may give reasonable time to the holder in writing of its intention to do so and the reasons for its proposal and must offer the holder an opportunity to make representations and DGCA will consider those representations before taking any final action.

In case where DGCA has determined that the safe operation of an aircraft could be adversely affected, DGCA in addition to sub-para (a) provisionally suspend in parts or in whole the approval certificate/ approval issued in accordance with this CAR without prior notice until the procedure as detailed in sub-para (a) is complied.

Sd/-  
**(P.K.Chattopadhyay)**  
Deputy Director General of Civil Aviation

 GOVERNMENT OF INDIA DIRECTORATE GENERAL OF CIVIL AVIATION			Form CA-182 A
Application for Approval of Indian Organization			
<b>1. Organization name and Address</b>		<b>2. Reasons for submission</b>	
a. Name		<input type="checkbox"/> Original application for grant of approval <input type="checkbox"/> Change in Scope of Approval <input type="checkbox"/> Change in Location or Housing and Facilities <input type="checkbox"/> Change in ownership <input type="checkbox"/> Other (specify) _____ _____	
b. Address for communication			
Phone:	Fax:		
c. Location for which approval sought			
<b>3. Name and designation of the Accountable Manager</b>			
<b>4. Category and Scope applied for</b>			
<b>Category (Please Specify) (A, B, C, D, E, F, G)</b>		<b>Scope</b>	
<b>5. Details of fees remitted Rs _____</b>		<b>DD No.</b>	<b>Bank</b>
<b>6. Proposed Quality Control Manager (Attach bio-data)</b>			
<b>7. Proposed Dy Quality Control Manager (Attach bio-data)</b>			
<b>8. Release Note Signatory/ Test Report Signatory/ Chief Instructor (Attach bio-data)</b>			
<b>9. List of special equipment available (Attach list)</b>		<input type="checkbox"/> Attached	<input type="checkbox"/> Not Attached
<b>10. Quality Control cum Assurance Manual (in triplicate)</b>		<input type="checkbox"/> Attached	<input type="checkbox"/> Not Attached
<b>11. Engineering Organisation manual (in triplicate)</b>		<input type="checkbox"/> Attached	<input type="checkbox"/> Not Attached
<b>12. Maintenance System Manual (in triplicate)</b>		<input type="checkbox"/> Attached	<input type="checkbox"/> Not Attached
<b>13. Specimen copy of the 'Release Note', 'Certificate of Maintenance', 'Certificate of Manufacture' and 'Test report' in respect of manufacturer/ maintenance/ modification/ inspection/ testing/ repair etc.</b>		<input type="checkbox"/> Attached	<input type="checkbox"/> Not Attached
<b>14. List of the type/make of accessory(s) for which approval sought (in case of organisation seeking approval for maintenance/overhaul of accessory(s))</b>		<input type="checkbox"/> Attached	<input type="checkbox"/> Not Attached
<b>15. a. Number of employees (inclusive of production and inspection staff)</b>			
b. Number of Licenced/approved personnel			
c. Number of Non-licenced personnel			
<b>16. List of Maintenance Functions entrusted to sub-contractors (outside agencies) :</b>			
I certify that my organization (referred to in item 1 above) fully complies with CAR Section 2, Series 'E' Part I and is fully competent to undertake the scope of work referred to above. I also certify that I have been authorized by the organization to make this application and that the statements and attachments hereto are true and correct to the best of my knowledge.			
<b>Date</b>	<b>Authorized Signature</b>	<b>Name of the Authorized Signer</b>	<b>Title</b>

Record of Action Organisation Inspection		Form CA-182 A	
For DGCA Use Only		For DGCA Use Only	
<p><b>17. Remarks</b> (Comment on availability of suitable manpower, equipment, literature, housing and other infrastructure. Include deficiencies found and approval denied)</p>			
<p><b>18. Findings – Recommendations</b></p> <p><input type="checkbox"/> A. The organization was found to comply with requirements of CAR Sec 2 Series 'E'</p> <p><input type="checkbox"/> B. The organization was found to comply with requirements of CAR Sec 2 Series 'E' except for deficiencies listed in Item 17.</p> <p><input type="checkbox"/> C. Recommend Approval with the scope applied for on application be issued.</p> <p><input type="checkbox"/> D. Recommend Approval with the scope applied for on application (EXCEPT those listed in Item 17) be issued.</p>			<p><b>19. Date of Inspection</b></p>
20. Office	Signature of the Officer(s)	Name of the Officer(s)	Designation
21. Supervising Officer			
<p><b>ACTION TAKEN</b></p> <p><input type="checkbox"/> APPROVED as shown on the Certificate of Approval issued on date shown</p> <p><input type="checkbox"/> NOT APPROVED</p>	<p><b>APPROVAL CERTIFICATE ISSUED</b></p> <p>Number:</p> <p>Date</p> <p>Valid upto</p>	<p>Officer's Signature</p> <p>Date</p> <p>Officer's Name                      Designation</p>	

**Appendix 'B'**

**AIRCRAFT RULE 133C - FEES**

The following fees shall be payable for any inspection, examination, test carried out for grant of :

a)	Approval to an organisation to engage in the design and manufacture of aircraft	10,000.00
b)	Renewal of approval referred to at (a).	2,000.00
c)	Approval to an organisation employing 100 and more persons in the manufacture of aircraft components and items of equipment including materials, forging, castings, standard parts.	2,000.00
d)	Renewal of approval referred to at (c).	400.00
e)	Approval to an organisation employing less than 100 persons in the manufacture of aircraft components and items of equipment including materials, forging, castings, standard parts.	500.00
f)	Renewal of approval referred to at (e).	100.00
g)	Approval of organisation or a person to engage in workshop processing, treatment and inspection	250.00
h)	Renewal of approval referred to at (g).	50.00
i)	Approval of an organisation to engage in maintenance, overhaul, modification, repair, inspection, treatment, processing of aircraft components and items of equipment installed in aircraft having an all up weight above 15,000 kgs.	5,000.00
j)	Renewal of approval referred to at (i).	1,000.00
k)	Approval to an organisation or a person to engage in maintenance, overhaul, modification repair, inspection, treatment processing etc. of aircraft, aircraft components and items of equipment installed in aircraft having an all up weight of 15,000 kgs. and below	500.00
l)	Renewal of approval referred to at (c).	100.00
m)	Approval to an organisation or person to engage in storage and distribution of aircraft, aircraft components, items of equipment, material, standard parts	500.00
n)	Renewal of approval referred to at (m)	100.00
o)	Approval to an organisation or person to engage in storage, distribution and supply of aircraft fuel, lubricants and special products.	500.00(for each station)
p)	Renewal of approval referred to at (o).	100.00(for each station)
q)	Approval as testing laboratory	250.00
r)	Renewal of approval referred to at (q).	50.00
s)	Approval to an organisation for imparting training in activities referred to in Rule 133B	500.00

t)	Renewal of approval referred to at (s).	100.00
u)	Approval to a person for certification of airworthiness of an aircraft, aircraft components or items of equipment	50.00
v)	Renewal of approval referred to at (u).	25.00
w)	Approval to an organization to engage in the maintenance overhaul, modification, repair and inspection of aircraft components and items of equipment but excluding engines.	500.00
x)	Renewal of approval referred to at (w).	100.00

NOTE :

1. If an organisation or person is granted approval for storage, distribution and supply of aircraft fuel, lubricants, special products etc. for its own aircraft, no fees will be charged for the grant of approval or renewal thereof.
2. No fees will be charged for approval or renewal from Flying Clubs/ Institutes/ Schools and Gliding Clubs/ Centres/ Wings engaged in maintenance, overhaul, modification, repair, inspection, treatment, processing etc. of aircraft, aircraft components and item of equipment installed in aircraft having an all up weight of 15,000 kgs. and below.
3. The validity of approval/ renewal of approval shall not exceed one year.
4. For extension in the scope of approval under Categories 'C' (Maintenance) and 'A' (Manufacture) to cover additional type of aircraft, aircraft components and items of equipment, a fee equal to renewal fee in that Category shall be charged.

All fees payable shall be paid by crossed Indian Postal Order or a Bank Draft.

Where for any reason the approval is not granted or renewed, as the case may be, the for Director General may refund to the applicant such portion of the fees paid as may represent the cost of any inspection, examination, test not carried out.

**Appendix 'C'**

**Statement of the Accountable Manager**

*(The Accountable Manager's statement should embrace the intent of the following paragraph and in fact this statement may be used without amendment. Any modification to the statement should not alter the intent.)*

**Statement of the Accountable Manager**

The Engineering Organisation, Quality Control and Maintenance System Manuals defines the organisation and procedures upon which the approval granted by DGCA is based.

The procedures given in the manuals are approved by the undersigned and must be complied with, as applicable, when maintenance/work is being carried under the terms of the DGCA approval.

It is accepted that these procedures do not override the necessity of complying with any new or amended regulation/requirement published by the DGCA from time to time where these new or amended regulations/requirements are in conflict with these procedures.

It is understood that the DGCA will approve this organisation whilst the DGCA is satisfied that the procedures are being followed and work standards maintained. It is further understood that the DGCA reserves the right to suspend, vary or cancel the approval of the organisation if the DGCA has evidence that procedures are not followed or standards not upheld.

Signed .....


Dated .....

Accountable Manager and ...(quote position) .....


For and on behalf of .....(quote organisation's name).....

**Note:**

- 1. The above statement is to be signed and will form a part of the Engineering Organisation manual.**
- 2. A copy of the above statement is to be forwarded to DGCA while applying for approval/renewal.**
- 3. Whenever the Accountable Manager changes it is important to ensure that the new Accountable Manager signs the above statement at the earliest opportunity as part of the acceptance by the DGCA. Failure to carry out this action could invalidate the Approval granted by DGCA.**

 GOVERNMENT OF INDIA DIRECTORATE GENERAL OF CIVIL AVIATION		Form CA-182 C	
<b>Application for Approval of Foreign Organization</b>			
<b>1. Organization name and Address</b>		<b>2. Reasons for submission</b>	
a. Name		<input type="checkbox"/> Original application for grant of approval <input type="checkbox"/> Change in Scope of Approval <input type="checkbox"/> Change in Location or Housing and Facilities <input type="checkbox"/> Change in ownership <input type="checkbox"/> Other (specify) _____	
b. Address for communication			
Phone: _____	Fax: _____		e-mail: _____
c. Location for which approval sought			
<b>3. Name and designation of the Accountable Manager</b>			
<b>4. Category and Scope applied for</b>			
<b>Category (Please Specify) (A, B, C, D, E, F, G)</b>	<b>Scope</b>		
<b>5. Details of fees remitted Rs _____</b>		DD No. _____ Bank _____	
<b>6. Proposed Quality Control Manager (Attach bio-data)</b>			
<b>7. Proposed Dy Quality Control Manager (Attach bio-data)</b>			
<b>8. Release Note Signatory/ Test Report Signatory/ Chief Instructor (Attach bio-data)</b>			
<b>9. Quality Control cum Assurance Manual / Exposition manual</b>		<input type="checkbox"/> Attached <input type="checkbox"/> Not Attached	
<b>10. Indian Operators who shall be utilising the firm facility</b>		<input type="checkbox"/> Attached <input type="checkbox"/> Not Attached	
<b>11. Approvals of various Airworthiness Authorities</b>			
a) Local Aw Authority		<input type="checkbox"/> Attached <input type="checkbox"/> Not Attached	
b) FAA		<input type="checkbox"/> Attached <input type="checkbox"/> Not Attached	
c) JAA		<input type="checkbox"/> Attached <input type="checkbox"/> Not Attached	
d) Any other		<input type="checkbox"/> Attached <input type="checkbox"/> Not Attached	
<b>12. Audit reports along with action taken</b>			
a) Local Airworthiness Authority		<input type="checkbox"/> Attached <input type="checkbox"/> Not Attached	
b) FAA		<input type="checkbox"/> Attached <input type="checkbox"/> Not Attached	
c) JAA		<input type="checkbox"/> Attached <input type="checkbox"/> Not Attached	
d) Any Other		<input type="checkbox"/> Attached <input type="checkbox"/> Not Attached	
<b>13. Details of work done for various Operators for the approval sought for during the past three years. Any adverse reports/warranty claim received.</b>		<input type="checkbox"/> Attached <input type="checkbox"/> Not Attached	
<b>I certify that my organization (referred to in item 1 above) fully complies with CAR Section 2, Series 'E' Part I and Airworthiness Advisory Circular 4 of 1998 and is fully competent to undertake the scope of work referred to above. I also certify that I have been authorized by the organization to make this application and that the statements and attachments hereto are true and correct to the best of my knowledge.</b>			
		Title	

For DGCA Use Only	Record of Action Organisation Inspection	Form CA-182 C For DGCA Use Only	
<b>14. Remarks</b> (Comment on availability of suitable manpower, equipment, literature, housing and other infrastructure as per the Exposition Manual./Inspection. Include deficiencies found and approval denied)			
<b>15. Findings – Recommendations</b>			<b>16. Date of Inspection</b>
<input type="checkbox"/> A. The organization was found to comply with requirements of CAR Sec 2 Series 'E' <input type="checkbox"/> B. The organization was found to comply with requirements of CAR Sec 2 Series 'E' except for deficiencies listed in Item 14. <input type="checkbox"/> C. Recommend Approval with the scope applied for on application be issued. <input type="checkbox"/> D. Recommend Approval with the scope applied for on application (EXCEPT those listed in Item 14) be issued.			
<b>17. Office</b>	<b>Signature of the Officer(s)</b>	<b>Name of the Officer(s)</b>	<b>Designation</b>
<b>18. Supervising Officer</b>			
<b>ACTION TAKEN</b>  <input type="checkbox"/> APPROVED as shown on the Certificate of Approval issued on date shown  <input type="checkbox"/> NOT APPROVED	<b>APPROVAL CERTIFICATE ISSUED</b> Number:  Date  Valid upto	Officer's Signature  Date  Officer's Name                      Designation	

 GOVERNMENT OF INDIA DIRECTORATE GENERAL OF CIVIL AVIATION		<b>Form CA-182 B</b>
<b>Application for Renewal of Approval of Indian Organization</b>		
<b>1. Organization name and Address</b>		
a. Name		c. Address for communication
b. Location for which approval given		
Phone:	Fax:	e-mail:
<b>2. Approval Details</b>		
Approval No.	Dated	Valid upto
<b>3. Details of Approval</b>		
Category (Please Specify) (A, B, C, D, E, F, G)		Scope
4. Details of fees remitted Rs _____		DD No. _____ Bank _____
5. Availability of special equipment		Available <input type="checkbox"/> Not available <input type="checkbox"/>
6. a. Number of employees (inclusive of production and inspection staff) If increased or decreased during the last one year validity		Total Number _____ Increased <input type="checkbox"/> Number _____ Decreased <input type="checkbox"/> Number _____ No change <input type="checkbox"/>
b. Number of Licenced/approved personnel If increased or decreased during the last one year validity		Total Number _____ Increased <input type="checkbox"/> Number _____ Decreased <input type="checkbox"/> Number _____ No change <input type="checkbox"/>
c. Number of Non-licenced personnel If increased or decreased during the last one year validity		Total Number _____ Increased <input type="checkbox"/> Number _____ Decreased <input type="checkbox"/> Number _____ No change <input type="checkbox"/>
7. Internal Audit report (Attach copies of all reports of the current calendar year)		<input type="checkbox"/> Attached <input type="checkbox"/> Not Attached
8. Action taken report of the internal audit (Attach copies)		<input type="checkbox"/> Attached <input type="checkbox"/> Not Attached
9. Validity Sheet of Certificate of Approval (Attach original)		<input type="checkbox"/> Attached <input type="checkbox"/> Not Attached
Certified that the organisation has continuously maintained the capability at which the approval was originally accorded by DGCA and is continually complying with the applicable Aircraft Rules, Civil Aviation Requirements, Aeronautical Information Circulars and such other instructions issued by DGCA from time to time as are relevant to the scope of approval.		
Further certified that at no time the capability of the firm has degraded to a level below that approved by DGCA.		
Date	Signature of the Quality Control Manager	Name of the Quality Control Manager

This form is to be submitted together with the enclosures at least 30 days prior to expiry of approval.

Record of Action Organisation Inspection		Form CA-182 B	
For DGCA Use Only		For DGCA Use Only	
<b>10. Remarks</b> (Comment on availability of suitable manpower, equipment, literature, housing and other infrastructure. Include deficiencies found and approval restricted)	<b>11. Surveillance/Spot Check Record</b>		
	Number of Spot Checks		
	Surveillance checks covering all the activities of the organisation	Yes <input type="checkbox"/>	No <input type="checkbox"/>
	Action taken on discrepancies observed during the surveillance checks and spot checks	Satisfactory <input type="checkbox"/>	Not Satisfactory <input type="checkbox"/>
<b>12. Findings – Recommendations</b>		<b>13. Date of Inspection</b>	
<input type="checkbox"/> A. The organization was found to comply with requirements of CAR Sec 2 Series 'E' <input type="checkbox"/> B. The organization was found to comply with requirements of CAR Sec 2 Series 'E' except for deficiencies listed in Item 10. <input type="checkbox"/> C. Recommend Approval to be renewed with the scope applied for on application. <input type="checkbox"/> D. Recommend Approval to be renewed with the scope applied for on application (EXCEPT those listed in Item 10).			
14. Office	Signature of the Officer(s)	Name of the Officer(s)	Designation
<b>15. Supervising Officer</b>			
<b>ACTION TAKEN</b> <input type="checkbox"/> NOT RENEWED/ HELD IN ABAYENCE  <input type="checkbox"/> RENEWED (Restricted) with scope of approval restricted as shown on the Scope of Approval sheet  <input type="checkbox"/> RENEWED as shown on the validity Sheet of Certificate of Approval	Reasons for non-renewal:		
	APPROVAL CERTIFICATE RENEWED Number:	Officer's Signature	
	Dated	Date	
	Validity upto	Officer's Name	Designation

Form CA-182 D



GOVERNMENT OF INDIA  
DIRECTORATE GENERAL OF CIVIL  
AVIATION

**Application for  
Renewal of Approval of Foreign  
Organization**

<b>1. Organization name and Address</b>		
a. Name	c. Address for communication	
b. Location for which approval given		
Phone:	Fax:	e-mail:
<b>3. Approval Details</b>		
<b>Approval No.</b>	<b>Dated</b>	<b>Valid upto</b>
<b>3. Details of Approval</b>		
<b>Category (Please Specify) (A, B, C, D, E, F, G)</b>	<b>Scope</b>	
<b>4. Details of fees remitted</b> Rs _____	DD No.	Bank
5. Work done during the year on aircraft/ engine belonging to Indian Operators	<input type="checkbox"/> Attached <input type="checkbox"/> Not Attached	
6. Internal Audit report along with action taken (Attach copies of all reports of the current calendar year)	<input type="checkbox"/> Attached <input type="checkbox"/> Not Attached	
7. FAA Audit report along with action taken (Attach copies of all reports of the current calendar year)	<input type="checkbox"/> Attached <input type="checkbox"/> Not Attached	
8. JAA Audit report along with action taken (Attach copies of all reports of the current calendar year)	<input type="checkbox"/> Attached <input type="checkbox"/> Not Attached	
9. Local Airworthiness Authority Audit report along with action taken (Attach copies of all reports of the current calendar year)	<input type="checkbox"/> Attached <input type="checkbox"/> Not Attached	
10. Validity Sheet of Certificate of Approval (Attach original)	<input type="checkbox"/> Attached <input type="checkbox"/> Not Attached	
Certified that the organization has continuously maintained the capability at which the approval was originally accorded by DGCA and is continually complying with the applicable Aircraft Rules, Civil Aviation Requirements, Aeronautical Information Circulars and such other instructions issued by DGCA from time to time as are relevant to the scope of approval. Further certified that at no time the capability of the firm has degraded to a level below that approved by DGCA.		
<b>Date</b>	<b>Signature of the Quality Control Manager</b>	<b>Name of the Quality Control Manager</b>

This form is to be submitted together with the enclosures at least 30 days prior to expiry of approval.

Record of Action Organisation Inspection		Form CA-182 D For DGCA Use Only	
<b>For DGCA Use Only</b>			
<b>11. Remarks</b> (Comment on submission of the requisite information for renewal of approval)			
<b>12. Findings – Recommendations</b>			
<input type="checkbox"/> A. The organization was found to comply with requirements of CAR Sec 2 Series 'E' <input type="checkbox"/> B. The organization was found to comply with requirements of CAR Sec 2 Series 'E' except for deficiencies listed in Item 11. <input type="checkbox"/> C. Recommend Approval to be renewed with the scope applied for on application. <input type="checkbox"/> D. Recommend Approval to be renewed with the scope applied for on application (EXCEPT those listed in Item 11).			
13. Name of the Officer(s)	Designation	Signature of the Officer(s)	Date
<b>14. Supervising Officer</b>			
<b>ACTION TAKEN</b>  <input type="checkbox"/> NOT RENEWED/ HELD IN ABAYENCE  <input type="checkbox"/> RENEWED (Restricted) with scope of approval restricted as shown on the Scope of Approval sheet  <input type="checkbox"/> RENEWED as shown on the validity Sheet of Certificate of Approval	Reasons for non-renewal:  <hr/> APPROVAL CERTIFICATE RENEWED Number: Dated Validity upto		
	Officer's Signature  Date		
	Officer's Name Designation		

## **Appendix G**

### *Sample* **QUALITY CONTROL MANUAL**

***Address of Approved Organization.***

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*Distribution List*

<i>Serial Number of Controlled Copy</i>	<i>Address of the holder</i>

*Record of Amendments*

<i>Rev. No.</i>	<i>Page No.</i>	<i>Amended by</i>	<i>Date</i>

Revision to this manual will be marked with a sideline on the affected pages. The revision number and the date of revision at the bottom will reflect the revision status of that page.



## **Introduction**

-----Airlines has been established with a view to provide safe air transport services to various international, / domestic destinations (as applicable) utilizing type of----- aircraft.

This Quality Control Manual defines the quality policy followed by Engg Department, adherence of which will ensure highest degree of Airworthiness Standards and Safety of Operations and forms the basis for maintenance approval. This manual is a prime reference document for all quality activities of the airline.

This Quality Control Manual meets the requirements of CAR Sec-2, Series E-Part I for grant of approval to carry out maintenance of aircraft in accordance with manufacturers requirements, Aircraft Rules1937 & Civil Aviation Requirements and any other instructions issued by DGCA.

This Manual is a dynamic document and will be kept continuously updated by the Quality Control Department as and when there are changes to manufacturers requirements, applicable Aircraft Rules, Civil Aviation Requirements and any instructions issued by DGCA from time to time. All pages of the Quality Control Manual shall be approved and stamped by DGCA. Similarly any amendments to the manual will be incorporated only after approval by DGCA.

The QC Manual will be distributed as per the distribution list. Similarly, any amendment to this manual will also be distributed to various departments / agencies as per the distribution list for incorporation in the manual held by them.

No pages of this manual shall be removed/deleted/altered without the specific approval of DGCA.

Master copy of this QC Manual will be retained in the QC Office and shall be available for inspection by officers of DGCA.

Holders of this manual are responsible for ensuring that their nominated staffs are fully conversant with the contents of this manual

\_\_\_\_\_Airlines is based in \_\_\_\_\_ where corporate, commercial, operational and engineering departments are located. Base managers communicate directly with ----- management and personnel to co-ordinate and control maintenance and operations.

**INDEX (contents)**

All chapters and sub chapters along with relevant page numbers should be listed here to facilitate quick reference. All the chapters/sub chapters not applicable shall be filled in as “**NOT APPLICABLE**”.

The QC Manual has been standardized to include all AO in all categories except Category ‘G’ on training Schools, which need a training manual. These guidelines are to be used to frame the new QC Manual as per the content reflected herein to commensurate with the approved organization scope and capability. The areas not pertaining to the AO shall be termed as “**NOT APPLICABLE.**” The manual shall be compiled tailor made as per the scope & capability they possess and the AO shall expand their contents as and when scope & capability extended. However, the format has to be followed as given hereunder.

<b>VOLUME I – Quality Control Manual</b>		
<b>Section I General</b>		
<b>Chapter No.</b>	<b>Subject</b>	<b>Sub Chapters</b>
Chapter 1	Introduction	
Chapter 2	Management	
Chapter 3	Quality Control Administration and Supervision	Personnel:  Maintenance certification
<b>Section II Manufacture/Maintenance (as applicable)</b>		
Chapter 1	Manufacture/Maintenance Procedures – Airworthiness Requirements	Maintenance and Overhaul – Policy and Control
Chapter 2 –	Delay/Defect Reporting and Investigations	
Chapter 3	Modifications	
Chapter 4	Documentations	
Chapter 5	Computer Maintenance	

Chapter 6	Maintenance Programs – Inspection Schedule	
Chapter 7	Certification	
Chapter 8	Contracts	
Chapter 9	Stores	
Chapter 10	MEL	
Chapter 11	Liaison with the Manufacturers	
<b>Section III Quality Control</b>		
Chapter 1	QC System Procedures	
Chapter 2	Line Maintenance procedures when applicable	
Chapter 3	Training of Certifying Staff and Technicians	
<b>VOLUME II Quality Assurance Manual</b>		

## **Section I      General**

### **Chapter 1            Introduction**

- i. Introduction.- Aims and Objectives of the of the Organisation (Quality Policy)
- ii. A statement signed by the Accountable Manager confirming that the QC Manual defines the details of maintenance practices and procedures in line with Aircraft Rules and CARs and will be complied with at all times as given in Appendix C.
- iii. Scope of Approval – Copy of the Certificate of approval to be enclosed. Scope of approval granted by DGCA for each maintenance facility for each type of aircraft
- iv. Distribution of QC Manual
- v. Policy for amending QC Manual, QA Manual, Engg Organization manual; and procedures manual., approval by DGCA and its distribution to holders of controlled copy

### **Chapter 2            Management**

- i. Organization chart showing organizational structure;
- ii. The name and designation of approved Chief QCM, QCM(s), Dy.QCM(s), of all bases;
- iii. Duties and responsibilities of
  - a) Chief QCM
  - b) QCM(s)
  - c) Dy QCM(s)
  - d) Inspector In Charge
- iv. Qualifications and Experience requirements of Persons nominated for certification of aircraft to be defined.
- v. Notification procedure for intimating significant changes in the organizational structure of AMO;
- vi. A list of operators to which AMO provides maintenance services;
- vii. A list of line stations for each type of aircraft detailing the routine work done at each station for each type of aircraft.
- viii. A list of base stations for each type of aircraft along with the scope of approval granted for each base station;
- ix. Renewal of AMO approval.
- x. A list of contracted approved maintenance organizations whose services are utilized for maintenance of aircraft/engine/aircraft components;
- xi. Procedure for Coordination with other departments of the organization such as Planning, Materials Management Engineering,, Technical Services, Operations, , etc.,

### **Chapter 3            Quality Control Administration and Supervision**

- i. **Personnel:** - Certifying Staff – Duties and responsibilities of
  - a. AMEs

- b. authorized Personnel
- c. approved Personnel (Shops, Transit Check , Boroscope Inspection, Key Personnel, etc.,
- d. C of C holders
- e. Personnel authorized to sign weight Schedule.
- f. Taxy Permit Holder
- g. Stores Inspector
- h. Technicians

Note: QC department should maintain updated records of List of names, their specimen signatures and ratings held, medical records of all certifying staff including initial and recurrent training/refresher course.

**ii. Maintenance certification**

- a. Maintenance certification- Procedure for certifying the maintenance work including certification in inspection schedules/ task cards, issue of FRC/Certificate of Maintenance certification of work done in the shops and any other certification and the circumstance under which it has to be signed.
- b. Procedure of releasing the aircraft from maintenance to service/revenue operations.
- c. Procedure for certifying the components from an aircraft which has met an accident.

**Section II Maintenance**

**Chapter 1 Maintenance Procedures – Airworthiness Requirements**

**i. Maintenance and Overhaul – Policy and Control**

- a. Acceptance/inspection of aircraft, components and material from external approved contractors
- b. Storage, labeling/tagging and release of aircraft components and material to aircraft maintenance.
- c. Acceptance of special tools and equipments
- d. Acceptance of locally fabricated tools / test equipment/ test benches.
- e. Calibration of tools and equipments
- f. Use of tools and equipments by staff (including alternate tools)
- g. Cleanliness standards of maintenance facilities
- h. Issue of Staff Notice/Technical Circulars to highlight Maintenance instructions, manufacturers service information, DGCA requirements, any other changes including updating and availability to staff.
- i. Issue of Certificate of Maintenance/FRC
- j. Procedure for handling defects arising during maintenance.
- k. Return of defective components to stores.
- l. Control of defective components sent to outside contractors for overhaul etc.,

- m. Repair Procedure
- n. Engine Trend Monitoring
- o. Drag Analysis
- p. Continued Airworthiness of aged aircraft.
- q. Sub Contract procedures
- r. Basic maintenance procedures
- s. Specific maintenance procedures
  - Such as Engine running procedures
  - Aircraft pressure run procedures
  - Aircraft towing procedures
  - Aircraft taxiing procedures
  - Aircraft jacking
  - Aircraft Mooring
  - Compressor Wash
  - Dynamic Balancing of Props and Rotors
  - Weight and Balance

## **Chapter 2 Delay/Defect Reporting and Investigations –**

- a. Procedure for recording, reporting and investigating and analysis of mechanical delays, (>15 min) major defects, incidents and accidents.
- b. Procedure for scrutinizing and conducting daily delay meetings for Scheduled Airlines.
- c. Procedure for Call Outs for defect rectification.
- d. Procedure for handling repetitive defects.
- e. Procedure to intimate aircraft manufacturer regarding major/significant defects.

## **Chapter 3 Modifications**

- a. Mandatory Modification procedure
- b. Mod Committee - Optional modification procedure.
- c. Responsibility of Planning, Engineering stores etc in this respect.
- d. All modifications and repairs shall comply with airworthiness requirements acceptable to DGCA. Procedure shall be introduced to ensure that substantiating data supporting compliance with the airworthiness requirement are retained.

## **Chapter 4 Documentations**

- a. Maintenance documentation in use and completion of the same. (as per CAR –F-III)
- b. Technical record control (Procedures sheets/Task Cards, Component History Cards, Log Books, the manner of Certification and preservation.)

## **Chapter 5 Computer Maintenance**

- a. Control of Computer maintenance record system
- b. Computer Records

## **Chapter 6 Maintenance Programs –Inspection Schedule**

- a. Manner of preparing inspection schedules / task cards including special schedules, and amendments thereof,
- b. Reliability control of components (preparation of TBO/COSL) and obtaining DGCA approval thereof;
- c. Submission of Engg Statistical data .
- d. Procedure for certifying maintenance schedules of airframe, engine and components by licensed/authorized/approved person;
- e. Procedure for dealing with mandatory modifications issued by DGCA, aircraft data, such as, SBs, Modification, Alert Bulletins, Service Instructions etc. received from the manufacturers;
- f. Procedure for life development of routine maintenance schedules and components;
- g. Procedure for carrying out additional inspection not contained in the routine maintenance schedule
- h. Inspection programme for different types of each type of aircraft
- i. Fuel quality control procedures

## **Chapter 7 Certification**

- a. Procedure to ensure that the certifying staff including holders of C of C do not exercise the privileges of their license/approvals/authorization/services under the influence of any alcohol, psycho active & problematic substances;
- b. Procedure to establish that all certifying staff including holders of C of C who are engaged in any kind of problematic use of substance are identified and removed from their safety critical functions.
- c. Procedure for grant of approvals/authorizations for the certifying staff by DGCA/QCM;

## **Chapter 8 Contracts**

- a. Procedure for awarding contracts for maintenance of aircraft/engine/components to another DGCA approved maintenance organizations;
- b. Procedure for awarding maintenance work to sub-contractor who does not hold DGCA approval;

## **Chapter 9 Stores**

- a. Procedure of storing raw materials, inflammable material, such as, oil, grease, paints, etc., components which have limited shelf life, Rubber components with cure date, certifying components in accordance with manufacturers/DGCA requirements,( stores procedure should ensure segregation of certified / serviceable and

- un-serviceable components/materials). Temperature and humidity control of stores.
- b. Bonded Stores
- c. Quarantine Stores
- d. STAC (Subject to aircraft certification)
- e. Fuel Storage
- f. Procedure for pooled parts and loan parts.

#### **Chapter 10 MEL**

- a. MEL Policy including limitations on invoking MEL.
- b. Procedure for obtaining approval of MEL and its use.

#### **Chapter 11 Liaison with the Manufacturers**

- a. Procedure for liaisoning with manufacturer for repair, modification & maintenance beyond relevant manual requirements.
- b. Procedure for incorporation of any modification/deviation which has not been originated/approved by the manufacturers;
- c. Procedure for preservation of such repair documents on permanent basis.

### **Section III Quality Control**

#### **Chapter 1 QC System Procedures**

- a. Procedure for Obtaining C of R, Cof A Aeromobile station. and renewal thereof,.
- b. Quality Control Check of Fuel and Oil., hydraulic fluids.
- c. Preservation of Records
- d. Specimen Copies of Reporting Forms, tags, used in the maintenance
- e. List of Pool Partners
- f. Procedure for Export C of A
- g. Punitive actions against erring personnel
- h. Procedure for Log Book Certification.
- i. Procedure for grant of approvals by AMO
- j. Procedure for intimating current airworthiness requirements, aircraft data to the certifying staff;
- k. Procedure for monitoring routine maintenance, component life,
- l. Procedure for compliance of Call Outs, deferment if any,
- m. Ferry Flight permission;
- n. Procedure and conditions for Aircraft Weighing.
- o. Availability of appropriate Tools, Calibration, traceability to National Standards.
- p. Procedure for acceptance of alternate tools used if any. Authentication/validation procedure.
- q. Any other relevant to the nature of maintenance and scope of approval granted.
- r. Any other procedure, which is relevant to the maintenance of particular type of aircraft, maintained by AMO and manufacturers requirements.
- s. Planning and Control
- t. Aircraft/ Engine performance monitoring.
- u. Standards Rooms
- v. Test Labs
- w. Structural repairs.
- x. Carriage of documents on board the aircraft
- y. CVR/FDR/DFDR – Read Outs and recording integrity.
- z. Special Approvals – ETOPS/AUTO LAND/ RVSM/MNPS/BRNAV
- aa. Test Flights – Occasions
- bb. First Aid Kit – monitoring
- cc. Furnishing Materials
- dd. Composite Repair Shops
- ee. Concessions in Maint Procedure and Organisation Procedure

#### **Chapter 2 Line Maintenance procedures when applicable**

- a. QC Supervision of maintenance work carried out in Line Stations including routine and any additional work certified.
- b. QC Supervision of aircraft components tools, equipments etc., in Line Stations.
- c. Line maintenance procedures related to servicing/fuelling
- d. Line maintenance control of defects and repetitive defects
- e. Line procedure for pooled parts and loan parts.

- f. Line procedure for return of defective parts removed from aircraft.

**Chapter 3 Training of Certifying Staff and Technicians.**

- a. General
- b. Syllabus of training
- c. Ab-initio
- d. Refresher Course
- e. Records.
- f. Training on Human factors in maintenance.

**Note: Operators having approved training schools in Cat G shall prepare a separate Training Manual.**

## **VOLUME II –Quality Assurance Manual**

### ***QUALITY CONTROL IS DISTINCTLY DIFFERENT FROM QUALITY ASSURANCE.***

Quality control is a procedure adopted by an AMO in the light of Manufacturers requirements, Aircraft Rules, Civil Aviation Requirements, and other DGCA instructions issued from time to time to achieve airworthiness standards and safety. These procedures are enumerated in the QC Manual”

Whereas

“Quality assurance is a system to monitor compliance with and adequacy of procedures as detailed in the Quality Control Manual to ensure safe maintenance practices and airworthiness of the aircraft.”

An approved maintenance organization should establish a Quality Assurance (QA) System to monitor compliance with and adequacy of procedures as detailed in the Quality Control Manual.

It is desired that suitably qualified and experienced person having adequate knowledge of the company procedures, policies and its implementation in the light of its approval granted by DGCA be appointed as QA Manager.

A team of experts shall assist him. It is desired that such experts in the QA department should be highly experienced and have the rating/ approval in the area of their work. They should be free from certification duties so that their decisions are not influenced by production/certification considerations. The QA personnel shall directly report to the Accountable Manager and should give a feed back to the QA manager to ensure corrective action as necessary.

The operator shall prepare a QA Manual detailing the program and procedures.

The QA manual shall define the following:-

1. Qualification and experience, duties and responsibilities of the QA Manager and other personnel.
2. The areas to be audited and the frequency of such audit
3. Inspection of Line Stations – domestic and foreign
4. Inspection of shops
5. Inspection of QC Departments
6. Calibration of tools and equipment
7. Inspection of AFS
8. Inspection of Ground Handling Equipments

### **GUIDELINES FOR AUDIT**

Auditors shall follow the Check List as guidelines but need not confine themselves within the pages of the Check List

DGCA has published Check Lists for auditing different areas of an AMO on DGCA website. Operators may use these checklist with modifications as applicable to their organizations. QA

personnel may also develop their own checklist as applicable to the areas being audited and the scope of approval.

It is expected that all the audits be planned. A copy of the Check List should be made available well in advance to the Inspector in Charge of the department being audited and the date of such audit.

Before commencement of the planned audit the QA team shall hold a briefing meeting with the Inspector in Charge of the department being audited wherein the scope and the areas of the audit will be discussed. After completion of the audit a debriefing meeting will be held again and deficiencies highlighted for appropriate rectification at the earliest. Where the deficiencies are serious affecting the safety of the aircraft immediate corrective action shall be taken by the organization.

One copy each of the deficiency form CA 2001 shall be furnished to the accountable manger, Inspector in Charge of the department and the QC Manager. It shall be the responsibility of the Inspector in Charge /QC Manager shall ensure that all the deficiencies are rectified in a time bound manner at the earliest.

It is advisable that all the areas covered under the scope of approval granted be subjected to planned audit at least twice a year. However where the activity of an area in the maintenance organization is less then the frequency shall be reduced to once a year. The frequency of audit should depend on two issues i.e the utilization of the facility and the audit findings. The number of non-conformity observed during audit is not of prime concern but the speed and earnestness with which the finding is attended to is very important.

The QA reports should be accessible to DGCA officers for scrutiny.

The QA functions may be entrusted to an external agency having the requisite expertise

#### **Quality Audit/In house Audit procedures:-**

The QA department may carry out

1. Quality Audit of organization procedures and documents.
2. Quality Audit of aircraft.
3. Quality Audit remedial action procedure
4. The qualification and training procedure for personnel issuing a maintenance release.
5. Records of certifying staff.
6. Qualification and training procedure for technicians
7. Concession control for deviation from organization procedures
8. Procedure for, issue renewal and refresher course for C of C holders
9. Quality Audit of Sub Contracts

Suggested areas for audit:-

1. Ai craft- on Tarmac
2. Hangar Check
3. Inspection of aircraft during major maintenance
4. Compliance of following to be ensured:-

- a the mandatory modifications/inspections
  - b SSID
  - c CPCP
  - d Off Job Sheets for additional work
  - f Compliance of manufacturers special instructions
5. Standards of inspection/workmanship
  6. Procedure adopted during shift changeover of personnel to ensure continuity of inspection.
  7. Precautions taken to ensure that on completion of work check for loose tools, split pins, wire, rivets nuts and bolts and other general cleanliness of the aircraft.
  8. Procedure to ensure closure of all panels.
  9. Procedure to ensure completion of task as per the schedule prior to release of aircraft for service.

**Check on aircraft data.**

Availability of updated manuals.  
Availability of Service Bulletins and Ads  
Life Limits

**Stores**

Adequacy of the stores and storage conditions.