GOVERNMENT OF INDIA

OFFICE OF THE DIRECTOR GENERAL OF CIVIL AVIATION

TECHNICAL CENTER, OPPOSITE SAFDARJUNG AIRPORT, NEW DELHI

CIVIL AVIATION REQUIREMENTS
SECTION 2 – AIRWORTHINESS
SERIES 'F' PART VIII
5TH MARCH 1998 EFFECTIVE: 26TH JANUARY 2007

Subject: **Maintenance and Certification of Aircraft**

1. INTRODUCTION :

1.1 Rule 15 of the Aircraft Rules, 1937 stipulates that all Indian registered aircraft are required to possess a current Certificate of Airworthiness before undertaking flight. Further, in accordance with sub-rule 2 (a) of Rule 60 the Director General may in respect of any aircraft, aircraft component and item of equipment, specify standards and conditions for its maintenance. It is, therefore, obligatory that the aircraft are maintained as per approved Maintenance Programme, system components are replaced when due, modifications are effected when required, special inspections are carried out when called for, defects are attended to as and when they occur, and no unapproved modification or repair is carried out.

1.2 On completion of any maintenance work, overhaul, repair, modification, replacement, process treatment, tests etc., items of maintenance / inspection are required to be certified by appropriately licensed AMEs, approved or authorized persons. **This CAR which replaces the earlier issue on the subject spells out the requirements for certifying of the maintenance work and the issuance of Certificate of Release to service.**

1.3 In accordance with international regulations and manufacturer's recommendations pre-flight/ walk around/ transit inspection is not necessarily required to be carried out by licensed persons and does not come under the purview of a maintenance organisation. Such an inspection is carried out before the flight to ensure that the aircraft is fit for the intended flight and may be carried out by pilots or another qualified persons. Inspection so carried does not require issuance of Certificate of Release to service. **This CAR also lays down the requirements and conditions for approval of pilots and other qualified persons approved/ authorized to carry out such an inspection.**

2. DEFINITIONS

(a) **Approved Pilot**: A pilot approved by an AMO/Operator to carry out transit/ layover inspection without the privilege of snag rectification.

(b) **Authorised person:** A person authorised by DGCA / Approved Maintenance Organisation to issue Certificate of Release to Service in respect of an aircraft or aircraft system or component or equipment, on behalf of an Approved Maintenance Organisation (AMO).

(c) **Certificate of Release to Service**: A certificate issued in respect of an aircraft or aircraft system or component or equipment by appropriately licensed AME, authorised or approved person, certifying that the same has been maintained, inspected and tested as per maintenance data and is airworthy in all respect and fit for release to service.

Note 1: Certificate of Release to service referred herein is synonymous to Certificate of Maintenance and Flight Release Certificate specified in Indian Aircraft Rules 1937 and in other sections / series / parts of Civil Aviation Requirements.

Note 2: AME used in this CAR refers to an appropriately qualified AME holding valid endorsement on the type of aircraft / engine/ systems to be certified by him.

(d) **Maintenance**: Maintenance means performance of all work necessary for the purpose of ensuring that the aircraft is airworthy and safe for flight including servicing of aircraft and all modifications, repairs, replacements, overhaul, process, treatment, tests, operations and inspections of aircraft, aircraft component and item of equipment required for that purpose.

(e) **Maintenance Programme**: A document prepared by the operator / maintenance organisation based on the maintenance programme information made available by the state of design or by the organisation responsible for the type design describing the Airworthiness limitation, specific scheduled maintenance tasks and their frequency (in terms of flying hours, cycles, landings or elapsed period or combination of two or more elements of inspection criteria) and related procedures, necessary for the safe operation of those aircraft to which it applies.

3. MAINTENANCE ORGANISATION

3.1 All aircraft including private category aircraft shall be maintained under Approval System as reflected in CAR Series 'E' or CAR 145.

3.2 Operators who do not have their own facility for maintenance and certification of aircraft, aircraft components or items of equipment can get maintenance and certification performed by organizations, who are approved for the purpose.

Note 1 - An operator may outsource maintenance / inspection of an aircraft to another AMO approved by DGCA / FAA / CAA / EASA without seeking specific approval from DGCA, provided the Maintenance Organisation Exposition / QC Manual details the procedure of implementation of operator's aircraft maintenance programme, rectification of snags and responsibilities of line maintenance manager. In such case a copy of the agreement made between the operator and Maintenance Organisation detailing the responsibilities of each shall be forwarded to DGCA.

Note 2 - Guidance for procedures of outsourcing of transit inspection to other organisation is given in AAC 2 of 2007

4. MAINTENANCE PROGRAMME

4.1 Maintenance programme for each aircraft or type of aircraft shall be based on maintenance programme information made available by the state of design or by the organisation responsible for the type design in their Maintenance Planning Document / Aircraft Maintenance Manual / MRBR etc., and additional items of inspection based on the operating environment, type of operation and experience of the operator / maintenance organisation and shall contain the following information :

a) maintenance tasks and the intervals at which these are to be performed, taking into account the anticipated utilization of the aircraft;
b) when applicable, a continuing structural integrity programme;
c) Airworthiness limitations;
d) procedures for changing or deviating from (a) and (b) above items; and
e) when applicable, condition monitoring and reliability programme description for aircraft system, components and power plants.

The Aircraft Maintenance programme so developed by the Operator / AMO shall be maintained upto date and approved by the respective Regional Airworthiness Office.

4.2 Maintenance Organisations shall document the system of implementing and monitoring the compliance status of the approved aircraft maintenance programme and maintain tamper proof records of inspection status of each aircraft with respect to the approved maintenance programme at all time.

4.3. The contents of routine maintenance and inspection schedules including special inspection schedules, overhaul schedules of components and aircraft shall be based on the approved aircraft maintenance programme / manufacturer's recommendations as given in the Maintenance Manual and shall be approved by the Head of the Engineering Department or a designated person of the operator /AMO.

4.4. The operator / AMO shall keep proper record of all items deleted from or added to the maintenance programme on the basis of manufacturer's / DGCA instruction with justification.

4.5 The inspection intervals of maintenance tasks and lives of aircraft components shall not be enhanced without obtaining prior approvals of DGCA. The inspection intervals or lives may, however, be reduced by the operator, based on the experience and reliability analysis under intimation to the respective Airworthiness Office. No proposal for enhancement of Airworthiness limitations and Certification Maintenance Requirements (CMR) shall be accepted.

5. CERTIFICATION OF AIRCRAFT MAINTENANCE:

5.1 While carrying out inspection as per established inspection schedules or maintenance tasks the items of the inspection should be signed off simultaneously as the job progresses at each stage of inspection during maintenance, overhaul or repair. **However, during transit/ pre-flight inspections, an AME/ authorized person as in para 7 may be in possession of "inspection cards" to ensure that no items of inspection are missed, and a certificate to this effect will be made in the appropriate technical log book. The AME/ authorized person shall explicitly certify on the satisfactory accomplishment of the pre-flight inspection giving reference to the inspection card.** All entries made in the schedule/Task-card or any additional sheet shall be in indelible ink. The inspection schedules/ task cards should highlight the applicability of items of inspection, which may vary in different aircraft of the same type. Organisation using work order system to carryout and certify maintenance task may do so but maintain records of test values, physical parameters measured during maintenance with cross reference to the work order and vice versa.

5.2 All maintenance work other than routine, performed on the aircraft shall be entered in the additional / off-job sheets and should be attached to the routine maintenance schedule / Technical log book, for the sake of preservation. Additional/off-job sheets so raised for recording additional work done should be serially numbered with cross reference to the maintenance task and vice versa to provide traceability.

5.3 Maintenance work carried out on the aircraft shall be certified in the relevant log books by appropriately licensed AMEs, approved or authorized persons who have issued Certificate of Release to Service for the work performed. However, DGCA may approve key persons for certification in the log books for the work done at outstations by others after satisfying that the work has been completed in accordance with the prescribed procedures.

5.4 Maintenance work on aircraft shall be recorded, signed and dated in the relevant log books within 48 hours of its completion by AMEs/ Approved / Authorised persons. If log books are not readily available because of aircraft being away from the base, then one copy of the log book entry should be kept with the Aircraft Technical log book. In such a case, a copy should be faxed /

mailed to the main base so as to reach the person concerned with in the next calendar day for prompt entry in the log book.

5.5 Aircraft operated in an area where radio navigation / communication equipment on board the aircraft is not required due to the absence of corresponding facilities on ground, need not be certified by an AME, provided the pilot is satisfied with the operation of the equipment. However, the onboard radio equipment shall be maintained and certified by an appropriately qualified AME or Approved Person immediately upon the aircraft returning to an area where corresponding ground facilities are available.

6. ISSUANCE OF CERTIFICATE OF RELEASE TO SERVICE:

6.1 After satisfactory completion of each scheduled / unscheduled maintenance work in accordance with applicable Maintenance data, a Certificate of Release to Service in respect of the aircraft (Annexure I) shall be issued by appropriately licensed AMEs, or authorized persons. The issuance of certificate of Release to Service implies that maintenance of the aircraft including that of its components and equipment has been carried out in accordance with applicable Maintenance data and it is airworthy in all respects and the aircraft is safe for release to service.

6.2 When extensive maintenance is carried out on the aircraft, single certificate of release to service may be issued with a unique cross reference to the work package containing full details of maintenance carried out. Details of test values, physical measurements made while carrying out maintenance should be retained in the work package record.

6.3 An aircraft component, which has been maintained whilst off the aircraft, shall require the issuance of a certificate of release to service (Annexure II) for such maintenance. On installation of the component on an aircraft, a certificate of release to service in respect of the aircraft shall be required certifying its proper installation.

6.4 A certificate of release to service is necessary before flight, at the completion of any defect rectification, whilst the aircraft operates flight services between scheduled maintenance

6.5 A Certificate of Release to Service is not required to be issued after transit inspection.

Note: A certificate of release to service shall not be issued in the case of any non-compliance, known to the approved maintenance organization, which could seriously hazard flight safety.

7. CERTIFYING PERSONNEL

All aircraft maintenance work shall be carried out and certified by qualified licenced engineers / personnel approved by an AMO. An operator/ AMO may

approve following personnel to carryout and certify limited aircraft maintenance work subject to meeting specified requirements.

i. Persons holding a Basic AME Licence issued by DGCA in appropriate category.
ii. Persons holding a valid CPL/ ATPL on the type aircraft.
iii. Persons holding valid AME Type Rated licence issued by DGCA on a similar aircraft, in appropriate category.

7.1 **Aircraft with an MTOW above 5700 kg.**

7.1.1 Transit inspection without defect rectification in respect of aircraft with passenger seating configuration upto 200 seats or with a maximum payload capacity of fifteen tons in case of cargo aircraft may be carried out by persons qualified at 7(i) and 7(ii), having had 10 days practical training on relevant inspections plus 7 transit inspection schedules carried out under the supervision of an appropriately qualified AME/certification authorisation holder employed by the approved organisation plus passed a skill test conducted by the organisation's Quality Manager.

7.1.2 Transit inspection without defect rectification in respect of aircraft with passenger seating configuration more than 200 seats or cargo aircraft with a maximum payload capacity of more than fifteen tons may be carried out by persons qualified at 7(i), having had 10 days practical training on relevant inspections plus 7 transit inspection schedules carried out under the supervision of an appropriately qualified AME/certification authorisation holder employed by the approved organisation plus passed a skill test conducted by the organisation's Quality Manager.

Note 1: In case of diversionary landing of aircraft with passenger seating configuration more than 200 seats or cargo aircraft with a maximum payload capacity of more than fifteen tons where AME/approved person is not available for carrying out transit inspection, the Pilot-in-command/Flight engineer of the aircraft having had 10 days practical training on relevant inspections plus 7 transit inspection schedules carried out under the supervision of an appropriately qualified AME/ certification authorisation holder employed by the approved organisation plus passed a skill test conducted by the organisation's Quality Manager may certify the transit inspection without snag rectification.

Note 2: While carrying out transit/ diversionary inspection, the provisions of para 5.1 above shall be complied.

7.1.3 Daily / layover inspection of an aircraft without defect rectification may be carried out and certified by persons qualified at 7(i) plus satisfactorily completion of an approved course relevant to the inspection on the type aircraft and had 10 days practical training on relevant inspections plus 7 daily/ layover inspection schedules carried out under the supervision of an appropriately qualified AME/certification authorisation holder employed by the

approved organisation plus passed a skill test conducted by the organisation's Quality Manager.

7.1.4 Weekly check inspection with simple defect rectification may be carried out by persons qualified at 7(iii), plus satisfactorily completion of an approved course relevant to the inspection on the type aircraft plus 10 days practical training on relevant inspections plus 7 weekly inspection schedules carried out under the supervision of an appropriately qualified AME/certification authorisation holder employed by the approved organisation plus passed in a skill test conducted by the organisation's Quality Manager.

7.2 **Aircraft with an MTOW upto 5700 kg**

7.2.1 Transit and upto Lay-over inspection without defect rectification may be carried out by persons qualified at 7(i) and 7(ii), having had 10 days practical training on relevant inspections plus 7 transit inspection schedules carried out under the supervision of an appropriately qualified AME/ certification authorisation holder employed by the approved organisation plus passed a skill test conducted by the organisation's Quality Manager.

Note: If an aircraft inspection and certification was carried out by a pilot continuously for 6 days, then the next daily inspection shall be certified by an appropriately qualified AME.

7.2.2 Weekly check inspection with simple defect rectification may be carried out by persons qualified at 7(iii), plus satisfactorily completion of an approved course relevant to the inspection on the type aircraft plus 10 days practical training on relevant inspections plus 7 weekly inspection schedules carried out under the supervision of an appropriately qualified certification authorisation holder employed by the approved organisation plus passed in a skill test conducted by the organisation's Quality Manager.

Note 1: While carrying VIPs, aircraft certification requirements specified in the applicable CAR / DGCA Circulars shall also be complied by the operators.

Note 2: For aircraft engaged in Flying Training, Transit and upto daily inspection without defect rectification may be carried out by persons qualified at 7(i) or Flight instructors / Assistant flight instructors on the type of aircraft, having had 10 days practical training on relevant inspections plus 7 transit and daily inspection schedules carried out under the supervision of an appropriately qualified AME/certification authorisation holder employed by the approved organisation plus passed a skill test conducted by the organisation's Quality Manager. If an aircraft inspection and certification was carried out by a flight instructor/ assistant flight instructor continuously for 6 days, then the next daily inspection shall be certified by an appropriately qualified AME.

7.3 The contents of approved courses (classroom and practical training) mentioned in the preceding paras shall be approved by the regional airworthiness office.

8. Persons holding AME licenses in mechanical stream on the type of aircraft may be approved by the quality manager for specific tasks in line maintenance in avionics stream, after appropriate task training. The procedure shall be documented in the Quality Manual of the airline.

9. VALIDITY OF APPROVAL:

Approvals granted in accordance with this CAR shall be valid for a period of one year and may be renewed further provided the holder has exercised the privileges for atleast three months during the preceding one year in a satisfactory manner.

10. METHOD OF ISSUE OF CERTIFICATE OF RELEASE TO SERVICE:

A copy of Certificate of release to service shall be retained for a period of one year and its associated maintenance record for five years from the date of certification.

(P. K. Chattopadhyay)
Joint Director General of Civil Aviation

ANNEXURE I

AIRCRAFT CERTIFICATE OF RELEASE TO SERVICE

CERTIFICATE OF RELEASE TO SERVICE

[APPROVED ORGANISATION NAME]

Organisation approval reference:

Certificate of release to service in accordance with CAR Section 2 Series 'F' Part VIII.

Aircraft: …… Type: …….. Constructor No.: ……..…

Registration No. ……..…. has been maintained as specified in

Work Order:……

Brief description of work performed*:

Certifies that the work specified was carried out in accordance with CAR Section 2 Series 'F' Part VIII and in respect of that work the aircraft is considered ready for release to service and therefore is in a condition for safe operation.

Certifying Staff (name):

(signature):

Licence/ approval/ authorization No.:

Location**:

Date:

* Reference to approved data used to perform the work
** Location where the work was performed

COMPONENT CERTIFICATE OF RELEASE TO SERVICE

ANNEXURE II

<table>
<tr><td colspan="2">1. DGCA, India</td><td colspan="3">2. AUTHORISED RELEASE CERTIFICATE
CA-FORM ONE</td><td colspan="2">3. Form Tracking Number</td></tr>
<tr><td colspan="5">4. Approved Organisation Name, Address and Approval Reference:</td><td colspan="2">5. Work Order/ Contract/ Invoice</td></tr>
<tr><td>6. Item</td><td>7. Description</td><td>8. Part No</td><td>9. Eligibility (*)</td><td>10. Quantity</td><td>11. Serial/ Batch No</td><td>12. Status / Work</td></tr>
<tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td colspan="7">13. Remarks</td></tr>
<tr><td colspan="3">14. Certifies that the items identified above were manufactured in conformity:

☐ approved design data are in condition for safe operation
☐ non-approved design data specified in Block 13</td><td colspan="4">19. ☐ CAR 145.50 Release to Service
☐ CAR Section 2 Series 'E' Release to Service

Certifies that unless otherwise specified in block 13, the work identified in block 12 and described in block 13, was accomplished in accordance with CAR 145/ CAR Section 2 Series 'E' and in respect to that work the items are considered ready for release to service.</td></tr>
<tr><td colspan="2">15.Authorised Signature</td><td>16.Certificate/ Approval Ref No.</td><td colspan="2">20.Authorised Signature</td><td colspan="2">21.Certificate/ Approval Ref No</td></tr>
<tr><td colspan="2">17. Name</td><td>18.Date (d/m/y)</td><td colspan="2">22. Name</td><td colspan="2">23.Date (d/m/y)</td></tr>
<tr><td colspan="3">(Strike off which ever is not applicable)</td><td colspan="4">* Installer must cross-check eligibility with applicable technical data</td></tr>
</table>