



SHA-SHIB GROUP OF INSTITUTIONS
Training Notes

Module 10- Aviation Legislation



SHA-SHIB GROUP
EMPOWERING KNOWLEDGE THROUGH VISION

- ❖ The information in this book is for study/ training purposes only and no revision service will be provided to the holder.
- ❖ While carrying out a procedure/ work on aircraft/ aircraft equipment you must always refer to the relevant Aircraft Maintenance Manual or Equipment Manufacturer's Handbook.
- ❖ For health and safety in the workplace you should follow the regulations/ Guidelines as specified by the Equipment Manufacturer, your company, National Safety Authorities and National Governments.



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Knowledge Levels – Category A, B1, B2, B3 and C Aircraft Maintenance Licence

Basic knowledge for categories A, B1, B2 and B3 are indicated by the allocation of knowledge levels indicators (1, 2 or 3) against each application subject. Category C applicants must meet either the category B1 or the category B2 basic knowledge levels. The knowledge level indicators are defined as follows:

LEVEL 1

- A familiarization with the principal elements of the subject.

Objectives: The applicant should be familiar with the basic elements of the subject.

- The applicant should be able to give a simple description of the whole subject, using common words and examples.
- The applicant should be able to use typical terms.

LEVEL 2

- A general knowledge of the theoretical and practical aspects of the subject.

- An ability to apply that knowledge.

Objectives: The applicant should be able to understand the theoretical fundamentals of the subject.

- The applicant should be able to give a general description of the subject using, as appropriate, typical examples.
- The applicant should be able to use mathematical formulae in conjunction with physical laws describing the subject.
- The applicant should be able to read and understand sketches, drawings and schematics describing the subject.
- The applicant should be able to apply his knowledge in a practical manner using detailed procedures.

LEVEL 3

- A detailed knowledge of the theoretical and practical aspects of the subject.

- A capacity to combine and apply the separate elements of knowledge in a logical and comprehensive manner.

Objectives: The applicant should know the theory of the subject and interrelationships with other subjects.

- The applicant should be able to give a detailed description of the subject using theoretical fundamentals and specific examples.
- The applicant should understand and be able to use mathematical formulae related to the subject.
- The applicant should be able to read, understand and prepare sketches, simple drawings and schematics describing the subject.
- The applicant should be able to apply his knowledge in a practical manner using manufacturer's instructions.
- The applicant should be able to interpret results from various sources and measurements and apply corrective action where appropriate.



सत्यमेव जयते

CAR - 66 ISSUE II R 2
(LICENSING OF AIRCRAFT MAINTENANCE ENGINEERS)
DIRECTORATE GENERAL OF CIVIL AVIATION
TECHNICAL CENTRE, OPP SAFDURJUNG AIRPORT, NEW DELHI

Modules	Subject	A or B1 Aero plane with		A or B1 Helicopter with		B2
		Turbine Engine (s)	Piston Engine (s)	Turbine Engine (s)	Piston Engine (s)	Avionics
1		Not Applicable				
2		Not Applicable				
3	ELECTRICAL FUNDAMENTALS	X	X	X	X	X
4	ELECTRONIC FUNDAMENTALS	X	X	X	X	X
5	DIGITAL TECHNIQUES ELECTRONIC INSTRUMENT SYSTEMS	X	X	X	X	X
6	MATERIALS AND HARDWARE	X	X	X	X	X
7A	MAINTENANCE PRACTICES	X	X	X	X	X
7B	MAINTENANCE PRACTICES					
8	BASIC AERODYNAMICS	X	X	X	X	X
9A	HUMAN FACTORS	X	X	X	X	X
9B	HUMAN FACTORS					
10	AVIATION LEGISLATION	X	X	X	X	X
11A	TURBINE AEROPLANE AERODYNAMICS, STRUCTURES AND SYSTEMS	X				
11B	PISTON AEROPLANE AERODYNAMICS, STRUCTURES AND SYSTEMS		X			
11C	PISTON AEROPLANE AERODYNAMICS, STRUCTURES AND SYSTEMS					
12	HELICOPTER AERODYNAMICS, STRUCTURES AND SYSTEMS			X	X	
13	AIRCRAFT AERODYNAMICS, STRUCTURES AND SYSTEMS					X
14	PROPULSION					X
15	GAS TURBINE ENGINE	X		X		
16	PISTON ENGINE		X		X	
17A	PROPELLER	X	X			
17B	PROPELLER					

**TRAINING NOTES
MODULE: 10**

SUBJECT NAME : AVIATION LEGISLATION

UNIT NO.	OBJECTIVE	LEVEL	
		B1	B2
10.1	10.1 Regulatory Framework Role of International Civil Aviation Organisation; The Aircraft Act and Rules made there under Role of the DGCA; Relationship between CAR-21, CAR-M, CAR-145, CAR-66, CAR 147 The Aircraft Rules (Applicable to Aircraft Maintenance and Release) Aeronautical Information Circulars (Applicable to Aircraft Maintenance and Release) CAR Sections 1 and 2	1	1
10.2	10.2 CAR-66 Certifying Staff - Maintenance Detailed understanding of CAR-66.	2	2
10.3	10.3 CAR-145 — Approved Maintenance Organisations Detailed understanding of CAR-145 and CAR M Subpart F	2	2
10.4	10.4 Aircraft Operations Commercial Air Transport/Commercial Operations Air Operators Certificates; Operators Responsibilities, in particular regarding continuing airworthiness and maintenance; Documents to be carried on board; Aircraft Placarding (Markings);	1	1
10.5	10.5 Aircraft Certification (a) General - Certification rules: such as FAA & EACS 23/25/27/29; Type Certification; Supplemental Type Certification; CAR-21 Design/Production Organisation Approvals. Aircraft Modifications and repairs approval and certification Permit to fly requirements (b) Documents - Certificate of Airworthiness; Certificate of Registration; Noise Certificate; Weight Schedule; Radio Station Licence and Approval.	1	1
10.6	10.6 CAR-M Detail understanding of CAR M provisions related to Continuing Airworthiness Detailed understanding of CAR-M.	2	2

10.7	<p>10.7 Applicable National and International Requirements (a) 1 2 2 2 Maintenance Programme, Maintenance checks and inspections; Master Minimum Equipment Lists, Minimum Equipment List, Dispatch Deviation Lists; Airworthiness Directives; Service Bulletins, manufacturers service information; Modifications and repairs; Maintenance documentation: maintenance manuals, structural repair manual, illustrated parts catalogue, etc.;</p> <p>(b) - Continuing airworthiness; Test flights; ETOPS /EDTO , maintenance and dispatch requirements; RVSM, maintenance and dispatch requirements RNP, MNPS Operations All Weather Operations, Category 2/3 operations and minimum equipment requirements.</p>	1	1
10.8	<p>10.8 Safety Management System State Safety Programme Basic Safety Concepts Hazards & Safety Risks SMS Operation SMS Safety performance Safety Assurance</p>	2	2
10.9	<p>10.9 Fuel Tank Safety Special Federal Aviation Regulations (SFARs) from 14 CFR SFAR 88 of the FAA and of JAA TGL 47 Concept of CDCCL, Airworthiness Limitations Items (ALI)</p>	2	2

Module 10: Enabling Objectives and Certification Statement

Certification Statement

These Study Notes comply with the syllabus of DGCA, CAR – 66 (Appendix I) and the associated Knowledge Levels as specified.

REVISION LOG

Sr. No.	Issue / Revision No.	Issue / Revision Date	Pages Revised	Signature

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ROLE OF ICAO

The International Civil Aviation Organization (ICAO) is a UN specialized agency, established by States in 1944 to manage the administration and governance of the Convention on International Civil Aviation (Chicago Convention).

ICAO works with the Convention's 192 Member States and industry groups to reach consensus on international civil aviation Standards and Recommended Practices (SARPs) and policies in support of a safe, efficient, secure, economically sustainable and environmentally responsible civil aviation sector. These SARPs and policies are used by ICAO Member States to ensure that their local civil aviation operations and regulations conform to global norms, which in turn permits more than 100,000 daily flights in aviation's global network to operate safely and reliably in every region of the world.

In addition to its core work resolving consensus-driven international SARPs and policies among its Member States and industry, and among many other priorities and programmes, ICAO also coordinates assistance and capacity building for States in support of numerous aviation development objectives; produces global plans to coordinate multilateral strategic progress for safety and air navigation; monitors and reports on numerous air transport sector performance metrics; and audits States' civil aviation oversight capabilities in the areas of safety and security.

The establishment and maintenance of international Standards and Recommended Practices (SARPs), as well as Procedures for Air Navigation (PANS), are fundamental tenets of the Convention on International Civil Aviation (Chicago Convention) and a core aspect of ICAO's mission and role.

SARPs and PANS are critical to ICAO Member States and other stakeholders, given that they provide the fundamental basis for harmonized global aviation safety and efficiency in the air and on the ground, the worldwide standardization of functional and performance requirements of air navigation facilities and services, and the orderly development of air transport.

Today, ICAO manages over 12,000 SARPs across the 19 Annexes and five PANS to the Convention, many of which are constantly evolving in concert with latest developments and innovations.

The development of SARPs and PANS follows a structured, transparent and multi-staged process – often known as the ICAO “amendment process” or “standards-making process” – involving a number of technical and non-technical bodies which are either within the Organization or closely associated with ICAO.

Typically, it takes approximately two years for an initial proposal for a new or improved Standard, Recommended Practice or procedure to be formally adopted or approved for inclusion in an Annex or a PANS. Occasionally, this timescale can be expanded or compressed depending on the nature and priority of the proposal under consideration.



ICAO HEADQUATER -MONTREAL

THE AIRCRAFT ACT AND RULES MADE THEREUNDER

The Directorate General of Civil Aviation is the regulatory body in the field of Civil Aviation primarily responsible for regulation of air transport services to/from/within India and for enforcement of civil air regulations, air safety and airworthiness standards.

The regulations are in the forms of the Aircraft Act, 1934, the Aircraft Rules, the Civil Aviation Requirements, the Aeronautical Information Circulars. The Advisory and guidance material is in the form of circulars

AIRCRAFT ACT 1934

1. Short Title and Extent
2. Definitions
3. Power of Central Government to exempt certain aircraft
4. Power of Central Government to make rules to implement the Convention of 1944
- 4A. Safety oversight functions
5. Power of Central Government to make rules
- 5A. Power to issue directions
6. Power of Central Government to make orders in emergency
7. Power of Central Government to make rules for investigation of accidents
8. Power to detain aircraft
- 8A. Power of Central Government to make rules for protecting the public health

- 8B. Emergency powers for protecting the public health
- 8C. Power of Central Government to make rules for securing safe custody and re-delivery of unclaimed property
- 9. Wreck and salvage
- 9A. Power of Central Government to prohibit or regulate construction of buildings, planting of trees, etc.
- 9B. Payment of compensation
- 9C. Appeals from awards in respect of compensation
- 9D. Arbitrator to have certain powers of civil Courts
- 10. Penalty for act in contravention of rule made under this Act
- 11. Penalty for flying so as to cause danger.
- 11A. Penalty for failure to comply with directions issued under section 5A
- 11B. Penalty for failure to comply with directions issued under section 9A
- 12. Penalty for abetment of offences and attempted offences
- 13. Power of court to order forfeiture
- 14. Rules to be made after publication
- 14A. Laying of rules before Parliament
- 15. Use of patented invention of aircraft not required in India
- 16. Power to apply customs procedure
- 17. Bar of certain suits
- 18. Saving for acts done in good faith under the Act
- 19. Saving of application of Act
- 20. Repeals

AIRCRAFT RULE 1937

- 1. Short title and extent
- 2. Nationality of aircraft
- 3. Definitions and interpretation
 - 3A Delegation of Powers
 - 3B Appeals
- 4. Use and operation of aircraft

5. Registration and nationality and registration marks
- 5A. Prohibited flight
6. Licensing of personnel
- 6A. Type of aircraft to be included in rating
- 6B. Flights to qualify for extension of a licence
- 6C. Flights for testing and other non-revenue specific special purposes.
7. Documents to be carried in aircraft
- 7A. Prohibition of carriage of persons without passport
- 7B. Carriage of cock-pit check list in aircraft
8. Carriage of arms, ammunition, explosives, military stores, etc.
- 8A. Deleted
9. Radio-telegraph apparatus
10. Mails
11. Aerodromes
12. Prohibited areas
13. Photographs at aerodromes or from aircraft in flight
- 13A. Carriage of photographic apparatus in aircraft (cancelled by G.S.R. 401(E) Dated 14th June, 2005)
14. Aerial work and public transport reserved for certain aircraft
15. Conditions to be complied with by aircraft in flight
- 15A. Operation of Remotely Piloted Aircraft System
16. Rules of the Air
17. Production of licences, etc
18. Prevention of flights in contravention of the rules
19. Cancellation, suspension or endorsement of licence and certificates
- 19A. Restrictions on licence, certificate, authorisation or approval
20. Applicability of certain rules to gliders and kites
21. Dangerous flying
- 21A. General Safety

- 21B. Aircraft in distress
- 22. Assault and other acts of interference against a crew member
- 23. Assault and other acts endangering safety or jeopardizing good order and discipline
- 24. Prohibition of intoxicated persons entering aircraft
- 24A. Carriage of persons suffering from mental disorders or epilepsy in aircraft
- 24B. Carriage of prisoners in aircraft
- 24C. Carriage of animals, birds and reptiles in aircraft
- 25. Smoking in aircraft
- 25A. Fuelling of aircraft
- 25B. Housing of aircraft
- 26. Dropping of articles and desents by parachutes
- 27. Carriage of persons in unauthorized part of aircraft
- 28. Minimum age for sole control of aircraft
- 28A. Maximum age limit for professional pilots amended by GSR 660(E) dated 5.9.2008
- 29. Acts likely to imperil safety of aircraft
- 29A. Prohibition of operating civil aircraft causing sonic boom
- 29B. Prohibition on the use of portable electronic devices
- 29C. Adoption of the Convention and Annexes
- 29D. Safety Management Systems
- 30. Certificate of registration
- 31. Nature of application
- 32. Aircraft imported by air
- 32A. Export of aircraft
- 33. Change in ownership
- 34. Aircraft destroyed or withdrawn from use
- 35. Registration fees
- 36. Register of aircraft
- 37. Nationality and Registration marks, how to be affixed

- 37A. Use of State marks
- 38. Licensing authority
- 38A. Carriage of operating crew
- 38B. Carriage of a cabin crew
- 39. Deleted
- 39A. Disqualification from holding or obtaining a licence
- 39B. Medical standards
- 39C. Period of validity of medical fitness and Licences
- 40. Signature of Licence holder
- 41. Proof of competency
- 41A. Checks, test and examinations
- 41B. Approved Training Organisation
- 42. Licences and their renewal
- 42A. Fatigue Management of Flight Crew and Cabin Crew Members
- 43. Deleted
- 44. Aircraft not registered in India
- 45. Validation of foreign licences
- 46. Deleted
- 47. Minimum age for holding a licence
- 47A. Minimum educational qualification for holding a licence
- 48. Fees and other charges
- 49. Issue of Type Certificate or Restricted Type Certificate for an aircraft or engine or propeller designed or manufactured in India
- 49A. Issue of Type certificate or Restricted Type Certificate to an aircraft imported in India
- 49B. Validation of type certificate or Restricted Type Certificate for aeronautical product imported in India
- 49C. Type certificate or Restricted Type Certificate - aeronautical product categories
- 49D. Cancellation, suspension of or endorsement on Type certificate or Restricted Type Certificate
- 49E. Recognition of Type Certificate or Restricted Type Certificate of an aeronautical product issued by a Contracting State

- 49F. Issue of Supplemental Type Certificate in respect of an aeronautical product
- 49G. Recognition of Supplemental Type Certificate issued by a Contracting State
- 49H. Regulation and control of aircraft components and items of equipment
- 49I. Acceptance of design for an aircraft
- 50. Issue of Certificate of airworthiness or Special Certificate of Airworthiness and Airworthiness Review Certificate
- 50A. Conditions necessary for certificate of airworthiness or special certificate of airworthiness and inspection, overhaul of aircraft
- 51. Flight Manual
- 52. Modification and repairs
- 53. Use of materials, processes, parts and periodical overhaul of aircraft
- 53A. Manufacture, storage and distribution of all aircraft
- 54. Persons authorised to certify
- 55. Suspension or cancellation of certificate of airworthiness or special certificate of airworthiness and its continued validity
- 55A. Issue of Special Flight Permit
- 56. Indian aircraft operating outside India
- 57. Instruments and equipment
- 58. Weight and balance
- 59. Defects and defective parts
- 59A. Defects in a foreign aircraft
- 60. Maintenance standards and certification
- 61. Licensing of aircraft maintenance engineers
- 61A. Validation of licences of foreign Aircraft Maintenance Engineers
- 62. Fees
- 63. Aircraft for which apparatus is obligatory
- 64. Deleted
- 65. Aeronautical beacons and Aeronautical Ground lights
- 66. False lights

- 67. Log Books
- 67A. Log books of flight crew personnel and logging of flight time
- 67AA. Log books of Aircraft Maintenance Personnel
- 67B. Destruction, mutilation etc. of any entry in the log books
- 78. Licensing of Aerodromes See Notification 346(E)
- 79. Qualifications of licensee
- 80. Procedure for grant of licence
- 81. Aerodrome Manual
- 82. Inspection
- 83. Conditions governing the grant of licence
- 84. Period of validity of licence
- 85. Public aerodromes
- 86. Tariff charges
- 87. Fees
- 88. Passenger Service Fees
- 88A. Aviation Security Fees
- 89. User Development Fees
- 90. Entry into public aerodromes
- 91. Prohibition of slaughtering and flaying of animals, depositing of rubbish and other polluted or obnoxious matter in the vicinity of aerodrome
- 92. Ground Handling Services
- 93. Requirement of a licence for air traffic services personnel
- 94. Provision of Air Traffic Services at an aerodrome
- 95. Licensing Authority
- 96. Requirement for Radio Telephony Operator's Certificate
- 97. Requirement of rating and unit endorsement
- 98. Unit Training Plan
- 99. Fees and other charges

100. Minimum educational qualification for holding a licence
101. Minimum age for holding a licence
102. Maximum age limit for holding licence or rating
103. Medical standards
104. Period of validity of licences and medical fitness assessment
105. Licence not valid without valid medical fitness assessment
106. Decrease in medical fitness
107. Maintenance of validity of ratings and endorsements
108. Licence holder's obligation to notify change of unit
109. Disqualification from holding or obtaining a licence
110. Renewal of expired licence or rating
111. Proof of competency
112. Tests, assessment and examination
113. Use of radio call signs of air traffic services units
114. Approved training organization
115. Record of experience and logging of on-watch period
116. Watch duty time limitations
117. Aeronautical station operator
118. Validation of foreign licences
- 118A. State Employees
119. Certification of communication, navigation and surveillance equipment or air traffic management facilities
120. Eligibility for grant of certificate
121. Procedure for grant of certificate
122. Communication, navigation, surveillance or air traffic management facility manual
123. Period of validity of Certificate
124. Fee
125. Conditions governing the grant of Certificate
126. Notification on availability of facility

- 127. Information on the operational status of navigational aids
- 128. Automatic recording of voice communications, signal and data
- 129. Aeronautical telecommunication equipment calibration and check
- 130. Time in air traffic services
- 131. Protection of critical and sensitive areas
- 132. Suspension, cancellation or withdrawal of a certificate
- 133A. Issue of special directions by D.G.C.A
- 133B. Approved Organisations
- 133BA. Acceptance of foreign approved organisation
- 133C. Fees
- 34. Scheduled Air Transport Services
- 134A. Non-Scheduled Air Transport Services
- 134B. Aerial Work
- 134C. Fees
- 135. Tariff for air transportation
- 135A. Deleted (GSR 636 (E))
- 135B. Deleted (GSR 636 (E))
- 135C. Deleted (GSR 636 (E))
- 140. Minimum requirements to be complied with
- 140A. Director-General's sanction to introduce new routes etc
- 140B. Operations Manual
- 140C. Route Guides
- 141. Duties of Pilot-in-Command
- 142 to 152. Deleted
- 153. Carriage of Mails
- 154. Definition
- 155. Private aircraft owners 155A. Operators

ROLE OF DGCA

The Directorate General of Civil Aviation (DGCA) is the Indian governmental regulatory body for civil aviation under the Ministry of Civil Aviation. This directorate investigates aviation accident incidents.^[1] It is headquartered along Sri Aurobindo Marg, opposite Safdarjung Airport, in New Delhi.^[2] The Government of India is planning to replace the organisation with a Civil Aviation Authority (CAA), modelled on the lines of the American Federal Aviation Administration (FAA).

VISION

Endeavour to promote safe and efficient Air Transportation through regulation and proactive safety oversight system

Departments

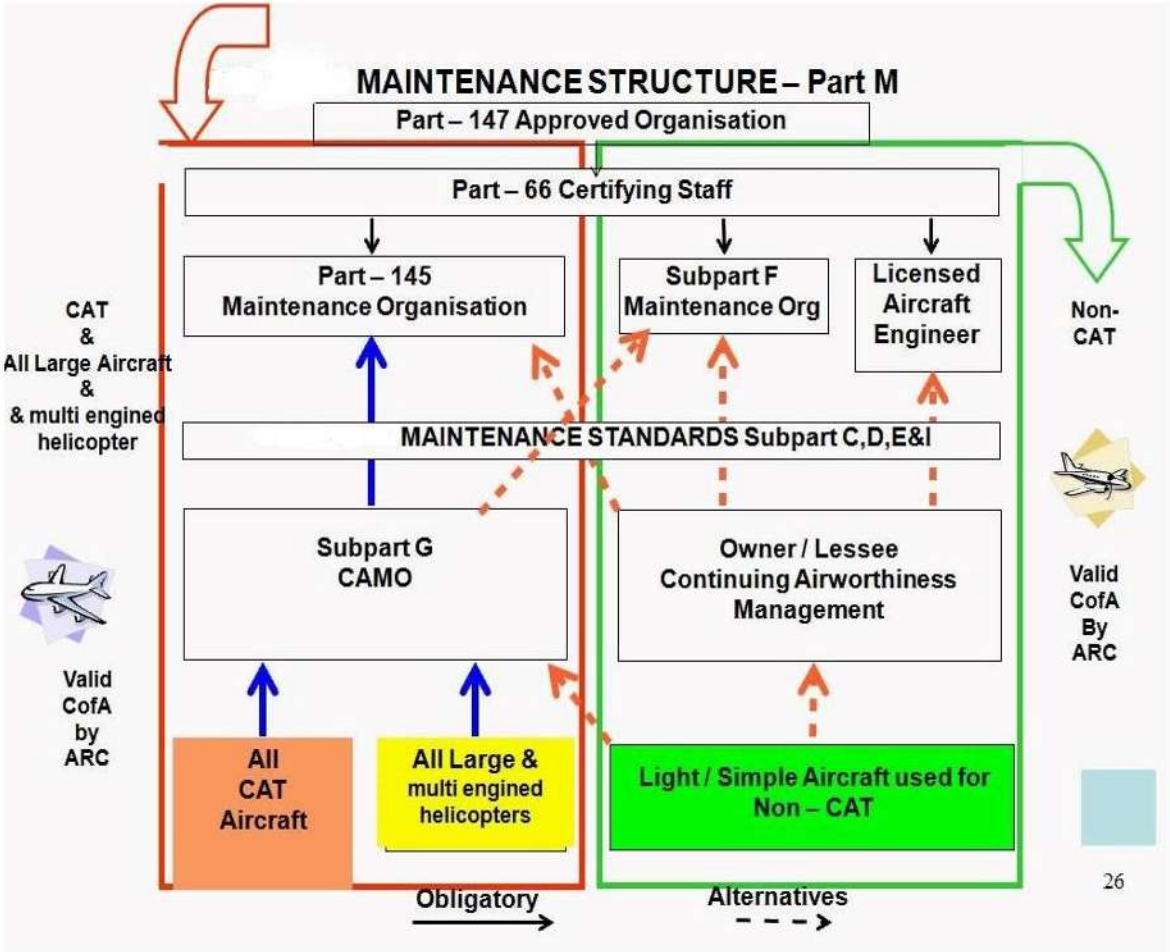
These are classified and divided into the following:

1.	Administration Directorate
2.	Aerodrome Standards Directorate (AD)
3.	Air Safety Directorate (DAS)
4.	Air Transport Directorate (AT)
5.	Airworthiness Directorate (DAW)
6.	Flight Standards Directorate (FSD)
7.	Aircraft Engineering Directorate (AED)
8.	Directorate of Training & Licensing (DTL)
9.	Aircraft Engineering Directorate (AED)
10.	Medical Section.
11.	Information & Regulation Directorate (DRI)
12.	Directorate Of Flying Training (DFT)
13.	Directorate of Airspace and Air Navigation Services Standards (ANSS)



DGCA HEADQUATER-NEW DELHI

Relationship between CAR-21,CAR-M, CAR-145,CAR-66,CAR147



CAR-66 Certifying Staff - Maintenance

Introduction

- harmonize Indian requirements for licensing of aircraft maintenance engineers with international requirements
- applicable to all personnel / Organizations engaged in maintenance and /or certification of aircraft registered in India
- establishes the requirements for the issue and extension of an aircraft maintenance engineer's license, conditions of its validity and use
- The AME licenses in CAR 66 pattern will be available in two different ways:

a) After conversion of existing AME licenses with applicable limitation.

b) Issue of fresh license after passing of applicable modules of Basic Knowledge Exam to be conducted by CEO.

Subparts

Subpart A -AIRCRAFT MAINTENANCE ENGINEER'S LICENCE AEROPLANES AND HELICOPTERS

defines the aircraft maintenance engineer's licence and establishes the requirements for application, issue and conditions of its validity

Subpart-B -Aircraft other than Aeroplane and helicopters

Microlight, light sport aircraft, glider, balloon or an airship shall be certified by an aircraft maintenance engineer holding a licence in Category A or Category B1 or Category B3 or an authorised person

Subpart-C –Components

lays down the minimum requirements in respect of knowledge, training, experience, examination and procedure for issue of authorisation by CAR -145 / CAR M Subpart-F approved organisations to certifying staff employed in their organisation for maintenance and certification of components as per manufacturer maintenance data.

CATEGORY OF LICENSE

Category of AME license are as follow

- Category A
- Category B1
- Category B2
- Category B3
- Category C

Category A

Category A license is further divided in 4 sub-category

- A1 Aeroplanes Turbine
- A2 Aeroplanes Piston
- A3 Helicopters Turbine
- A4 Helicopters Piston

Category B

Category B license is further divided in 6 sub-category

- B1.1 Aeroplanes Turbine
- B1.2 Aeroplanes Piston

- B1.3 Helicopters Turbine
- B1.4 Helicopters Piston
- B2 Avionics
- B3 Light Aircraft

Category B3 is applicable to piston-engine non-pressurised aeroplanes of 2000 kg MTOM and below.

Category C

Category C licence permits certification of scheduled base maintenance by the issue of a single certificate of release to service for the complete aircraft after the completion of all such maintenance. The basis for this certification is that the maintenance has been carried out by competent mechanics and category B1, B2 and B3 support staff, as appropriate, have signed for the maintenance tasks under their respective specialization. The principal function of the category C certifying staff is to ensure that all required maintenance has been called up and signed off by the category B1, B2 and B3 support staff, as appropriate, before issue of the certificate of release to service. Only category C personnel who also hold category B1, B2 or B3 qualifications may perform both roles in base maintenance.



Base maintenance

Aircraft group Rating for AIRCRFAT MAINTENANCE LICENSE

For the purpose of ratings on aircraft maintenance engineers licences, aircraft shall be classified in the following groups:

Group 1:

complex motor-powered aircraft as well as multiple engine helicopters, aeroplanes with maximum certified operating altitude exceeding FL290, aircraft equipped with fly-by-wire systems and other aircraft requiring an aircraft type rating when defined so by the DGCA

Group 2:

aircraft other than those in Group 1 belonging to the following subgroups:

sub-group 2a: single turbo-propeller engine aeroplanes

sub-group 2b: single turbine engine helicopters
 sub-group 2c: single piston engine helicopters.

Group 3:
 piston engine aeroplanes other than those in Group 1.



Complex motor-powered aircraft

Endorsement with aircraft ratings

group 1 aircraft	group 2 aircraft	group 3 aircraft
appropriate aircraft type rating	appropriate aircraft type rating, manufacturer sub-group rating or full subgroup rating.	appropriate aircraft type rating or full group rating
	at least two aircraft types from the same manufacturer which combined are representative of the applicable manufacturer sub-group	

Certification Privileges

Category A licence

holder to issue certificates for release to service after minor scheduled line maintenance and simple defect rectification within the limits of maintenance tasks specifically endorsed on the authorisation issued by a maintenance organisation approved under rule 133B for the broad category of aircraft endorsed on the licence and the certification privileges shall be restricted to the work carried out by the licence holder himself in the maintenance organization that issues the authorisation.

Category B1

licence holder to issue certificates for release to service and act as support staff following the maintenance performed on aircraft structure, powerplant, mechanical and electrical systems, work on avionics system requiring simple tests to prove their serviceability and not requiring trouble shooting, in respect of an aircraft type endorsed on the licence.

NOTE: (a) Category B1 shall include the appropriate sub-category of Category A;

Category B2

licence holder to issue — (a) certificates of release to service after maintenance on avionic and electrical systems, avionics and electrical system within engine and mechanical systems requiring only simple tests to prove their

serviceability of aircraft type endorsed on the licence; (b) certificates of release to service after minor scheduled line maintenance and simple defect rectification within the limits of tasks specifically endorsed on the certification authorisation issued by an approved maintenance organisation of aircraft type endorsed on the licence and this certification privilege shall be restricted to work that the licence holder has personally performed in the maintenance organisation which issued the certification authorisation and limited to the rating already endorsed on the licence.

Category B3

licence holders to issue certificates of release to service after maintenance on aeroplane structure, engine and mechanical and electrical systems, work on avionic systems requiring only simple tests to prove their serviceability and not requiring troubleshooting of 'piston-engine non-pressurized aeroplanes of 2000 kg Maximum Take-off Mass and below' 5 Category C licence holders to issue certificates of release to service after base maintenance in respect of an aircraft of the type endorsed on the licence. The privileges apply to the aircraft in its entirety including all systems.

NOTE—Simple test means a test described in approved maintenance data and such in nature that aircraft system serviceability is verified through aircraft controls, switches, Built-in Test Equipment (BITE), Central Maintenance Computer (CMC) or external test equipment not requiring special training.

Category C

Category C certifying staff with mechanical background should meet the requirement of Category B1 knowledge requirement

Category C certifying staff with avionics background should meet the requirement of Category B2 knowledge requirement

COMPONENT CERTIFYING STAFF

Candidate for grant of authorization to carryout and certify overhaul, major repairs of aircraft, power plants, components and accessories thereof, shall meet the following

Requirements:

- He shall not be less than 21 years of age.
- Knowledge:- The applicant shall have passed 10+2 with Physics, Chemistry and
- Mathematics or equivalent and
- should hold CAR 66 licence in appropriate category

or

-passed 3 years basic AME training course/Diploma / Degree in Engineering in the appropriate branch and must have passed relevant portions of modules of CAR 66 knowledge examination approved by the DGCA for the purpose in the MOE and examination conducted by the approved organisation in association with DGCA or eligible for grant of suitable credit for particular module.

Training:

The applicant must have undergone a training Programme conducted by:

Manufacturer of the equipment

OR

An organization approved to impart such training;

OR

Trained by a person having specific approval covering the activity for a period of 2 years.

Experience:

Applicants meeting the knowledge requirements shall have the following experience:

- For persons holding CAR 66 Aircraft Engineers' License:
- one year experience in overhaul, major repairs, modifications of the system components and accessories, including three months recent experience.
- For persons holding Diploma/ Degree in Engineering:
- two years' experience in overhaul, major repairs, modifications of the system components and accessories, including six months recent experience.

Validity

The Certification Authorization shall be valid for a period of one year and may be renewed by the Quality Manager subject to the condition that that the person

Basic Experience requirements

CATEGORY	EXPERIEMCE REQUIREMENT
A B1.2 B.4 B3	3YEARS
B1.1 B1.3 B2	5 YEARS

CATEGORY C	EXPERIENCE REQUIREMENT
LARGE AIRCRAFT EXERCISING CATEGORY A, B1.2, B1.4 B1.1, B1.3, B2	5 YEARS 3 YEARS
OTHER THAN LARGE AIRCRAFT EXERCISING CATEGORY B1 or B2 privileges CAR 145 B1 or B2 support staff	3 YEARS

- Experience shall have been acquired within the 10 years preceding the application for an aircraft maintenance licence
- At least one year of the required experience shall be recent maintenance experience on aircraft of the category/subcategory for which the initial aircraft maintenance engineer's licence is sought
- For subsequent category /subcategory additions to an existing aircraft maintenance engineer's licence, the additional recent maintenance ex- perience required may be less than one year, but shall be at least three months
- Twelve years of practical aircraft maintenance experience, gained outside a civil air- craft maintenance environment shall be accepted as equivalent to the requirements laid down in above table
- shall be reduced by one year in case of an applicant who has satisfactorily completed training in any training organization approved under rule 133B or who has acquired a Degree in an allied field of Engineering from a recognized University;
- While an applicant to a CAR-66 Category C licence may be qualified by having 3 years' experience as category B1 or B2 certifying staff only in line maintenance, it is however recommended that any

applicant for a category C holding a B1 or B2 licence demonstrate at least 12 months experience as a B1 or B2 base maintenance support staff.

- A skilled worker is a person who has successfully completed a training acceptable to the DGCA and involving the manufacture, repair, overhaul or inspection of mechanical, electrical or electronic equipment. The training would include the use of tools and measuring devices.
- To be considered as recent experience; at least 50% of the required 12 month experience should be gained within the 12 month period prior to the date of application for the CAR66 aircraft maintenance license. The remainder of the experience should have been gained within the 7 year period prior to application. It must be noted that the rest of the basic experience required by 66.A.30 must be obtained within the 10 years prior to the application

Limitations

limitations shall be removed upon satisfactory completion of examination on those modules/subjects defined in the applicable conversion report referred to in APM Chapter 17

The application for the limitation removal should be supported by a record of experience signed by the authorised certifying staff or by an assessment signed by the manufacturer after completion of the applicable theoretical and practical training

Conversion provisions

Aircraft Maintenance Engineer's Licences issued prior to this CAR coming into force in category "A" to cover Gliders, Balloons and in category "B", "D" and "X" to cover Aircraft, Engine, propeller and items of equipment to carry out maintenance and issue 'Certificate of Release to Service' that could not be transferred to CAR-66 licence 'Type Rating' shall be transferred to the CAR-66 licence section XIV (a) without altering the privileges hitherto exercised by the holder

Basic Examination Standard

- multiple choice question.
- have more than two alternative answers
- nominal average of 75 seconds per question.
- pass mark of the examination is 75%.
- NO Penalty marking systems
- A failed module may not be retaken for at least 90 days (failed module may be retaken after 30 days.)
- The maximum number of consecutive attempts for each module is three.
- Further sets of three attempts are allowed with a 1 year waiting period between sets

Module		Category	Multiple choice Questions	Time allowed (Minutes)
No.	Subject			
1	Mathematics	All Categories	Not Applicable	
2	Physics	All Categories	Not Applicable	
3	Electrical Fundamentals	A	20	25
		B1	52	65
		B2	52	65
		B3	24	30
4	Electronic Fundamentals	A	Not Applicable	
		B1	20	25
		B2	40	50
		B3	8	10
5	Digital Techniques/Electronic Instrument Systems	A	16	20
		B1.1, B1.3	40	50
		B1.2, B1.4	20	25
		B2	72	90
		B3	16	20
6	Materials and Hardware	A	52	65
		B1	72	90
		B2	60	75
		B3	60	75
7A	Maintenance Practices	A	72	90
		B1	80	100
		B2	60	75
7B	Maintenance Practices	B3	60	75
8	Basic Aerodynamics	A	20	25
		B1	20	25
		B2	20	25
		B3	20	25

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Module		Category	Multiple choice Questions	Time allowed (Minutes)
No.	Subject			
9A	Human factors	A	20	25
		B1	20	25
		B2	20	25
9B	Human factors	B3	16	20
10	Aviation Legislation	A	32	40
		B1	40	50
		B2	40	50
		B3	32	40
11A	Turbine Aeroplane Aerodynamics, Structures and Systems	A	108	135
		B1	140	175
		B2	0	0
11B	Piston Aeroplane Aerodynamics, Structures and Systems	A	72	90
		B1	100	125
		B2	0	0
11C	Piston Aeroplane Aerodynamics, Structures and Systems	B3	60	75
12	Helicopter Aerodynamics, Structures and Systems	A	100	125
		B1	128	160
		B2	0	0
13	Aircraft Aerodynamics, Structures and Systems	A	0	0
		B1	0	0
		B2	180	225
14	Propulsion	A	0	0
		B1	0	0
		B2	24	30
15	Gas Turbine Engine	A	60	75
		B1	92	115
		B2	0	0

Module		Category	Multiple choice Questions	Time allowed (Minutes)
No.	Subject			
16	Piston Engine	A	52	65
		B1	72	90
		B2	0	0
		B3	68	85
17A	Propeller	A	20	25
		B1	32	40
		B2	0	0
17B	Propeller	B3	28	35

NOTE:

*Applicants who have passed all basic knowledge examination modules in respect of a particular category/ sub-category of AME licence may apply to CEO, DGCA on Form CA 19-11 for the issuance of Basic Knowledge Examination Certificate.

MODULARISATION

Qualification on basic subjects for each CAR 66 aircraft maintenance engineer’s licence category or subcategory should be in accordance with the following matrix. Applicable subjects are indicated by an ‘X’

Subject Modules	A or B1 aeroplane with		A or B1 helicopter with		B2	B3
	Turbine engine (s)	Piston engine (s)	Turbine engine (s)	Piston engine (s)	Avionics	Piston-engine Non-pressurised aeroplanes 2 000 kg MTOM and below
1	Not Applicable					
2	Not Applicable					
3	X	X	X	X	X	X
4	X	X	X	X	X	X
5	X	X	X	X	X	X
6	X	X	X	X	X	X
7A	X	X	X	X	X	
7B						X
8	X	X	X	X	X	X
9A	X	X	X	X	X	
9B						X
10	X	X	X	X	X	X
11A	X					
11B		X				
11C						X
12			X	X		
13					X	
14					X	
15	X		X			
16		X		X		X
17A	X	X				
17B						X

Type training and Examination Standard

Theoretical training and examination	Practical training and assessment
Conducted by maintenance training organisation appropriately approved in accordance with CAR-14 or by other organisations, as directly approved by the DGCA.	Conducted by maintenance training organisation appropriately approved in accordance with CAR-14 or by other organisations, as directly approved by the DGCA.
started and completed within the 3 years preceding the application for a type rating endorsement	started and completed within the 3 years preceding the application for a type rating endorsement

Aircraft Type training levels


LEVEL 1	A brief overview of the airframe, systems and powerplants
LEVEL 2	Basic system overview of controls, indicators, principal COMPONENT
LEVEL 3	Detailed description, operation, component location, removal/installation and bite and troubleshooting procedures

Experience requirements for extending a CAR-66 Aircraft Maintenance Engineer's Licence
The table below shows the experience requirements for adding a new category or sub- category to an existing CAR-66 licence.

To:	A1	A2	A3	A4	B1.1	B1.2	B1.3	B1.4	B2	B3
From	-	-	-	-	-	-	-	-	-	
A1	X		6 months	6 months	2 years	6 months	2 years	1 year	2 years	6 months
A2	6 months	X	6 months	6 months	2 years	6 months	2 years	1 year	2 years	6 months
A3	6 months	6 months	X	6 months	2 years	1 year	2 years	6 months	2 years	1 year
A4	6 months	6 months	6 months	X	2 years	1 year	2 years	6 months	2 years	1 year
B1.1	NONE	6 months	6 months	6 months	X	6 months	6 months	6 months	1 year	6 months
B1.2	6 months	NONE	6 months	6 months	2 years	X	2 years	6 months	2 years	NONE
B1.3	6 months	6 months	NONE	6 months	6 months	6 months	X	6 months	1 year	6 months
B1.4	6 months	6 months	6 months	NONE	2 years	6 months	2 years	X	2 years	6 months
B2	6 months	6 months	6 months	6 months	1 year	1 year	1 year	1 year	X	1 year
B3	6 months	NONE	6 months	6 months	2 years	6 months	2 years	1 year	2 years	--

The experience requirement will be reduced by 50 % if the applicant has completed an approved CAR-147 course relevant to the subcategory

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GOVERNMENT OF INDIA
DIRECTORATE GENERAL OF CIVIL AVIATION

CAR-66
AIRCRAFT MAINTENANCE ENGINEER'S LICENCE

I	INDIA				IX. CONDITIONS
II.	Aircraft Maintenance Engineer's Licence				a. Certified that holder is authorized to exercise the privileges of the licence as given in Rule 61 of the Aircraft Rules, 1937. b. Endorsement of aircraft types at section XII (b) titled AIRCRAFT TYPE RATING means the holder is qualified to issue a certificate of release to service for such aircraft from the date of endorsement with a valid authorization issued by approved maintenance organization. c. Holder of this licence shall not exercise the privileges of the licence and related ratings at any time when he/she is aware of any decrease in medical fitness which might render him/her unable to safely and properly exercise these privileges. d. This licence is not valid unless it bears the signature of the holder. e. This licence remains current until the expiry date specified at section XIV whilst in compliance with the Aircraft Rule 61 and CAR 66 unless previously suspended or revoked. f. This licence when endorsed with an aircraft type rating meets the intent of ICAO Annex 1. g. Entry, endorsement or alteration in the licence shall be made by person authorized for this purpose by the Director General.
III.	Licence number		STAMP SIZE PHOTO		
IV.	Name of holder in full				
IVa	Date of birth				
V.	Address of holder				
VI.	Nationality				
VII.	Signature of Holder				
VIII.	Issued in accordance with the provisions of the Aircraft Act 1934, and Aircraft Rules 1937.				
X	Signature of Issuing Authority (for the Director General of Civil Aviation)			
	Date of Issue:				
XI.	Stamp of the Issuing Authority				
1					III. LIC No. 2

19-04	Application for conversion/removal of limitations of CAR66 aircraft maintenance engineer's licence
19-05	Application for issue of duplicate CAR- 66 aircraft maintenance engineer's licence
19-06	Medical certificate
19-07	Application for allotment of computer number for appearing in AME licence examinations
19-8A	Application for appearing in written paper(s) of CAR 66 basic knowledge examination
19-8B	Application for appearing in CAR 66 type examination
19-09	Application for appearing in skill test of CAR-66 AME licence
19-10	Format of aircraft maintenance engineer work record / log book
19-11	Application for issue of basic knowledge examination certificate

Application shall be made to dgca in form and manner prescribed by dgca

QUESTIONS

- 1.Purpose Of Car 66
- 2.List The Vrious Category Of Car 66 License
- 3.Minimum Age Of Component Certifying Staff
- 4.Scope Of Category A Person
5. Scope Of Category B1 Person
- 6.Scope Of Category B2 Person
7. Scope Of Category C Person
- 8minimum Experience Requirement For B3 Person
- 9.Type Traning Must Be Completed Within How Many Years
- 10.Average Time In Basic Examination Is How Many Seconds
- 11.How Many Attempt Is Allowed In Basic Training Examinmation For Particular Module
- 12.Who Is Responsible To Ensure No Illegal Endorsement Is Made In Ame License

CAR-145 — Approved Maintenance Organisations

Introductions

- Rule 133A-CAR 145 is issued as per this rule
- Rule 133B-CAR 145 organisation approved as per this rule(validity 5YRS)
- Rule 133C-fess to be paid for approved CAR 145 organisation
- Initial Issue (Revision 0)- 26th January 2005 -Primarily based on JAR 145 regulation
- Revision 1 -28th February 2008
*align the numbering system with that of EASA and certain customization to suit Indianenvironment.
*The revision was applicable to organizations involved in the maintenanceof large aircraft (large aircraft means an aircraft, classified as an aeroplane with amaximum take-off mass of more than 5700 kg, or a multi engined helicopter) ormaintenance of aircraft used for commercial air transport, and components intended for fitment thereto.
- Issue 02 -8th October 2013
Issue 02 to CAR 145 is issued to make Indian regulations aligned with EASA Part145 latest revisions and SARI 145 Revision1 dated 15 November 2012
- Issue 02 (Revision 1)- 8th June 2015
validity of CAR 145 approval in line with Rule 133B of the AircraftRules, 1937.
- Issue 02 (Revision 2) -27thSeptember 2016
amended to harmonise with 66 Issue II requirements and with latest revisions of EASA Part 145 regulations
- Issue 02 (Revision 3) 14th June 2017
amended to harmonise with amended Rule 61 of the Aircraft Rules, 1937 and CAR 66 (Issue II, R1) requirements.

For the purpose of this CAR145, the competent authority shall be DGCA for organisations having their principal place of business in India or any other country.

CA forms

CA Form 1	Authorized release note(Use of the CA Form 1 for maintenance)
CA Form 2	Application (Intial approval/variation/renewal)
CA Form 3	Dgca approval certificate
CA Form 4	Acceptance of post holder
CA Form 6 PART 1 PART 2 PART 3 Part 4 Part 5	Approval Recommendation Report GENERAL CAR -145 COMPLIANCE AUDIT REVIEW Compliance with 145.A.70 Maintenance organisation exposition Findings CAR-145 Compliance status CAR-145 Approval or continued approval or change recommendation

DEFINITION

1. 'Large Aircraft'

means an aircraft, classified as an aeroplane with a maximum takeoff mass of more than 5700 kg, or a multi engine helicopter

2. 'Certifying staff'

means personnel responsible for the release of an Aircraft or a component after maintenance.

3. Maintenance'

means any one or combination of overhaul, repair, inspection, replacement, modification or defect rectification of an aircraft or component, with the exception of pre-flight inspection

4. Organisation

means a natural person, a legal person or part of a legal person. Such an organisation may hold more than one CAR 145 approval.

5. 'Pre-flight inspection'

means the inspection carried out before flight to ensure that the aircraft is fit for the intended flight;

6. Component

means any engine, propeller, part or appliance.

7. A complex motor powered aircraft means:

(1) An aeroplane:

- (i) Above 5700 Kg MTOM, or
- (ii). Certificated for more than 19 seated passengers, or
- (iii). Certificated for operation with at least 2 pilots, or
- (iv). Equipped with turbojet engine(s) or more than 1 turboprop engine.

(2) A helicopter:

- (i). Above 3175 Kg MTOM, or
- (ii) Certificated for more than 9 seated passengers, or
- (iii) Certificated for operation with at least 2 pilots, or

(3) A tilt rotor aircraft.

8. 'Authorised person'

means the officials of DGCA, who has responsibility for the oversight of the maintained aircraft or component.

9. 'Authorised person'

a person formally authorised by the maintenance organization to perform or supervise a maintenance task. An 'authorised person' is not necessarily 'certifying staff'.

10. 'sign-off'

is a statement issued by the 'authorised person' which indicates that the task or group of tasks has been correctly performed. A 'sign-off' relates to one step in the maintenance process and is, therefore, different to a certificate of release to service.

11. Unsalvage

Components which have reached their certified life limit or contain a non-repairable Defect

12. Line Maintenance

should be understood as any maintenance that is carried out before flight to ensure that the aircraft is fit for the intended flight

13. Independent qualified person

is the person who performs the independent inspection and attests the satisfactory completion of the task and that

no deficiencies have been found.

14. ERROR-CAPTURING METHODS

Error-capturing methods are those actions defined by the organisation to detect maintenance errors made when performing maintenance

15.Overhauled.

Means a process that ensures the item is in complete conformity with all the applicable service tolerances specified in the type certificate holder's, or equipment manufacturer's instructions for continued airworthiness, or in the data which is approved or accepted by the Authority. The item will be at least disassembled, cleaned, inspected, repaired as necessary, reassembled and tested in accordance with the above specified data.

16.Repaired.

Rectification of defect(s) using an applicable standard .

17. Inspected/Tested.

Examination, measurement, etc. in accordance with an applicable standard (e.g. visual inspection, functional testing, bench testing etc.)

18. Modified.

Alteration of an item to conform to an applicable standard .

19.Applicable standard

means a manufacturing/design/maintenance/quality standard, method, technique or practice approved by or acceptable to DGCA.

20.Competence

defined as a measurable skill or standard of performance, knowledge and understanding, taking into consideration attitude and behavior

21.‘Human factors’

means principles which apply to aeronautical design, certification, training, operations and maintenance and which seek safe interface between the human and other system components by proper consideration of human performance.

22.‘Human performance’

means human capabilities and limitations which have an impact on the safety and efficiency of aeronautical operations.

23. Sub contracting

refers to the case of one organisation, not itself appropriately approved to CAR-145 that carries out aircraft line maintenance or minor engine maintenance or maintenance of other aircraft components or a specialised service as a subcontractor for an organisation appropriately approved under CAR145

24. Maintenance instructions’

for the purposes of this paragraph means instructions on how to carry out the particular maintenance task: they exclude the engineering design of repairs and modifications

25 The sample check

means to witness any relevant testing and visually inspect the product and associated documentation. The sample check should not involve repeat disassembly or testing unless the sample check identifies findings requiring such action.

26. Full time for the purpose of CAR-145

means not less than 35 hrs per week except during vacation periods.

27. Officially recognised standard

means those standards established or published by an official body and acceptable to DGCA.

28.Reinspection

it is an error-capturing method subject to the same conditions as an independent inspection is,except that the 'authorised person' performing the maintenance task is also acting as 'independent qualified person' and performs the inspection

Facility requirements

1.Hangar

- For base maintenance of aircraft
- Temporary for line maintenance in case of inclement weather(hangar for line maintenance is not must)
Should be owned ,if not proof of tenancy required

2.Workshop

- component maintenance

3.Office accommodation

- provided for the management of the planned work for certifying staff so that they can carry out their designated tasks in a manner that contributes to good aircraft maintenance standards
- office can be divided or combined in depending upon the size of organisation

4.Storage accommodation

- Storage conditions ensure segregation of serviceable components and material from unserviceable aircraft components, material, equipment and tools
- storage are in accordance with the manufacturer's instructions
- Access to storage facilities is restricted to authorized personnel.
- Storage facilities for serviceable aircraft components should be clean, well ventilated and maintained at a constant dry temperature to minimise the effects of condensation.
- Storage racks should be strong enough to hold aircraft components and provide sufficient support for large aircraft components such that the component is not distorted during storage.
- All aircraft components, wherever practicable, should remain packaged in protective material to minimize damage and corrosion during storage.



HANGAR



WORKSHOP



CAR 145 storage accomodation

Line Maintenance

- Trouble shooting.
- Defect rectification.
- Component replacement with use of external test equipment if required. Component replacement may include components such as engines and propellers.
- Scheduled maintenance and/or checks including visual inspections that will detect obvious unsatisfactory conditions/discrepancies but do not require extensive in depth inspection. It may also include internal structure, systems and power plant items which are visible through quick opening access panels/doors.
- Minor repairs and modifications which do not require extensive disassembly and can be accomplished by simple means.

For temporary or occasional cases (AD's, SB's) the Quality Manager may accept base maintenance tasks to be performed by a line maintenance organisation



Line Maintenance

Smallest 145 organisation

- The smallest maintenance organisation would only be involved with a limited number of light aircraft, or aircraft components, used for commercial air transport
- The quality monitoring function contracted to an appropriate organisation approved under CAR-145 or to a person with appropriate technical knowledge and extensive experience of quality audits employed on a part-time basis, with the agreement of DGCA.(make a minimum of 2 visits per 12 months,one preannounced and other unannounced)



Small 145 organisation (up to 10 persons involved in maintenance)

- The normal minimum requirement is for the employment on a full-time basis of two persons
- one holds the position of "maintenance engineer" and the other holds the position of "quality audit engineer".

Medium sized 145 organisation

- less than about 500 maintenance staff

Large 145 organisation

- being an organisation with more than about 500 maintenance staff
- should have a dedicated quality audit group

APPLICATION

An application for the issue or variation of an approval shall be made to DGCA in a form and manner established by DGCA

Application Form	CA Form 2
 DIRECTOR GENERAL OF CIVIL AVIATION, INDIA CAR 145 APPROVAL	<i>Application for:</i> Initial grant Renewal Variation
<p>1. Registered name of the applicant: _____</p> <p>2. Trading name (if different): _____</p> <p>3. Address requiring approval: _____</p> <p>4. Tel: _____ Fax _____ E-Mail _____</p> <p>5. Scope of CAR 145 approval relevant to this application: (See page 2 for possibilities)</p> <p>6. Position and name of the (proposed*) Accountable Manager: _____</p> <p>7. Fees as per Rule 133C of the Aircraft Rules: _____</p> <p>8. Signature of the proposed* Accountable Manager: _____</p> <p>9. Place: _____</p> <p>10. Date: _____</p> <p>Note: When completed this form shall be sent to concerned regional airworthiness office for organisations based in India and to DGCA Hdqrs for organisations based outside India.</p> <p>*Applicable only in the case of a new CAR-145 Applicant.</p>	
Page 1 of 2	

Page 2 – SCOPE OF CAR 145 APPROVAL AVAILABLE

CLASS	RATING	LIMITATION	BASE	LINE
AIRCRAFT	A1 Aeroplanes/airships above 5700kg	Quote aeroplane/airship type		
	A2 Aeroplanes/airships 5700 kg and below	Quote aeroplane/airship manufacturer or group or type		
	A3 Helicopters	Quote helicopter manufacturer or group or type		
	A4 Aircraft other than A1, A2 or A3	Quote aircraft type or group		
ENGINES	B1 Turbine	Quote engine type		
	B2 Piston	Quote engine manufacturer or group or type		
	B3 APU	Quote engine manufacturer or type		
COMPONENTS OTHER THAN COMPLETE ENGINES OR APUs	C1 Air Cond & Press	Quote aircraft type or aircraft manufacturer or component manufacturer or the particular component and or cross refer to a capability list in the exposition.		
	C2 Auto Flight			
	C3 Comms and Nav			
	C4 Doors – Hatches			
	C5 Electrical Power			
	C6 Equipment			
	C7 Engine – APU			
	C8 Flight Controls			
	C9 Fuel – Airframe			
	C 10 Helicopter – Rotors			
	C 11 Helicopter – Trans			
	C12 Hydraulic			
	C13 Indicating and Recording System			
	C14 Landing Gear			
C15 Oxygen				
C16 Propellers				
C17 Pneumatic				
C18 Protection ice/ rain/ fire				
C19 Windows				
C20 Structural				
C21 Water Ballast				
C22 Propulsion Augmentation				
SPECIALISED SERVICES	D1 Non destructive Insp.	Quote particular NDT method		
With reference to the above scope of approval and item 5 on page 1, please complete in the following example style, but relevant to your organization.				
A1 Base & Line Boeing 737-200		B2 Lycoming Piston		
A2 Base Piper PA34		B3 Garrett GTCP85		
A2 Base & Line Cessna Piston Twins		C2 SFENA		
A3 Bell 206/212		C4 Boeing 747		
B1 CFM 56		D1 Eddy Current		
There may be any number of types/manufacturers, etc. listed against each rating.				

CLASS RATING

An organisation must be granted an approval ranging from a single class and rating with limitations to all classes and ratings with limitations.

Class Rating	Privileges
A	may carry out maintenance on the aircraft and any component (including engines/APUs),
B	may carry out maintenance on the uninstalled engine/APU
C	may carry out maintenance on uninstalled components (excluding engines and APUs
D (self contained class rating) D1	carry out NDT on products for other organisation

- Within the approval classes and ratings granted by DGCA the scope of work specified in the maintenance organisation exposition defines the exact limits of approval.
- category A class ratings are subdivided into ‘Base’ or ‘Line’ maintenance
- a ‘Line’ facility located at a main base facility requires a ‘Line’ maintenance approval.

PERSONNEL REQUIREMENTS

MANAGER

1.ACCOUNTABLE MANAGER

has corporate authority for ensuring that all maintenance required by the customer can be financed and carried out to the standard required by this CAR

1. ensure that all necessary resources are available to accomplish maintenance
2. establish and promote the safety and quality policy specified in 145.A.65(a)
3. demonstrate a basic understanding of this CAR.

2. BASE MAINTANANCE MANAGER

-responsible for ensuring that all maintenance required to be carried out in the hangar, plus any defect rectification carried out during base maintenance, is carried out to the design and quality standards

-also responsible for any corrective action resulting from the quality compliance monitoring

3. LINE MAINTENANCE MANAGER

-is responsible for ensuring that all maintenance required to be carried out on the line including line defect rectification is carried out to the standards specified

-also responsible for any corrective action resulting from the quality compliance monitoring

4. WORKSHOP MANAGER

-is responsible for ensuring that all work on aircraft components is carried out to the standards

- for any corrective action resulting from the quality compliance monitoring

5.QUALITY MANAGER

-Monitoring the quality system includes requesting remedial action as necessary by the accountable Manager

NOTE-apart from above the organisation may adopt any title for the foregoing managerial positions but should identify to DGCA the titles and persons chosen to carry out these functions

ONE OF CERTIFICATION AUTHORISATION

ISSUED IN –Unforeseen case (Unforeseen means- means that the aircraft grounding could not reasonably have been predicted by the operator because the defect was unexpected due to being part of a hitherto reliable system)

ISSUED BY

-organisation contracted(on behalf of organisation contracted issued by quality department)

ISSUED TO

one of its employees holding equivalent type authorisations on aircraft of similar technology,construction and systems;

or

to any person with not less than five years maintenance experience and holding a valid ICAO aircraft maintenance licence

NOTES

above cases as specified in this subparagraph must be reported to DGCA within seven days of the issuance of such certification authorization

LIMITED CERTIFICATION AUTHORIZATION

Issued for

- preflight AD's and when aircraft is away from supported location

Issued by

-organisation as per SCHEDULE II of AIRCRAFT rule 1937

Issued to

-flight commander and/or flight engineer after successful completion of theoretical and practical training of 100hrs & 35hrs respectively)

Qualification _

CPL/ATPL

F/EL respectively

Training-

theoretical knowledge instruction- 100 hours

- Airframe and systems
- Electrics
- Power plant and emergency equipment
- Flight instruments and automatic flight control systems

Practical skills training- 35 Hours in the following subjects:


- Fuselage and flight controls
- Engines
- Instruments
- Landing gear and brakes
- Cabin/cockpit/emergency equipment
- De-icing/anti-icing related maintenance activities,
- Ground handling and servicing
- Certificate of completion

Validity – 12 months

POST HOLDER

The person or persons nominated shall be identified and their credentials submitted in CA Form 4

CA Form 4



DIRECTORATE GENERAL OF CIVIL AVIATION

MANAGEMENT PERSONNEL REQUIRED TO BE ACCEPTED AS SPECIFIED IN CAR 145.

1. Name:

2. Position:

3. Qualifications relevant to the item (2) position:

4. Work experience relevant to the item (2) position:

Signature: Date:

On completion, please send this form under confidential cover to DGCA.

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ELIGIBLE FOR PERSON GROUP OF PERSON EXCEPT ACCOUNTABLE MANAGER

STAFF

1.Planners

-interpret maintenance requirements into maintenance tasks,

2. Supervisors

-are able to ensure that all required maintenance tasks are carried out and, where not completed or where it is evident that a particular maintenance task cannot be carried out to the maintenance data, then such problems will be reported to the quality manager person for appropriate action.

3.Mechanics

-are able to carry out maintenance tasks to any standard specified in the maintenance data and will notify supervisors of defects or mistakes requiring rectification to re-establish required maintenance standards.

4.Specialised services staff (NDT) (hold certificate of competency)

-able to carry out specialised maintenance tasks to the standard specified in the maintenance data.
NDT level 1,2,3 is carried out as per Series L part IV

5. Support staff (licensed engineer who don't have certification privileges) (Minimum age-21yrs)
-able to determine that relevant tasks or inspections have been carried out to the required standard.

6. Certifying staff (approved by QM / person authorized by QM) (Minimum age-21yrs)
-able to determine when the aircraft or aircraft component is ready to release to service and when it should not be released to service.

7. Quality audit staff
-able to monitor compliance with CAR -145 identifying noncompliance in an effective and timely manner so that the organisation may remain in compliance with CAR -145.

8. Airworthiness review staff
-issue ARC after airworthiness review

HUMAN FACTOR TRAINING

- receive training within 6 months after joining the maintenance organisation.
- may be conducted by the maintenance organisation itself, or independent trainers, or any training organisations acceptable to the DGC
- specified in the maintenance organisation exposition.
- appropriate duration in each two year period
- purpose of human factors continuation training is primarily to ensure that staff remain current in terms of human factors and also to collect feedback on human factors issues

CERTIFYING STAFF AND SUPPORT STAFF

- organisation shall ensure that all certifying staff and support staff are involved in at least 6 months of actual relevant aircraft or component maintenance experience in any consecutive 2-year period.
- The person responsible for the quality system shall also remain responsible on behalf of the organisation for issuing certification authorisations to certifying staff.
- The minimum age for certifying staff and support staff is 21 year
- Competence should be assessed by evaluation of:
 - on-the-job performance and/or testing of knowledge by appropriately qualified personnel, and
 - records for basic, organisational, and/or product type and differences training, and
 - experience records.

Privileges of the organization

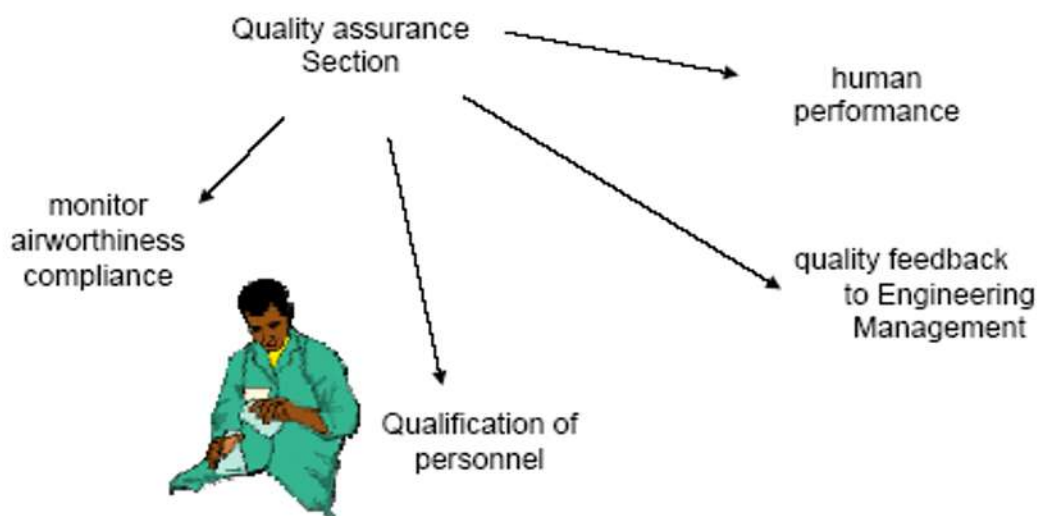
- Maintain any aircraft and/or component for which it is approved at the locations identified in the approval certificate and in the exposition;
- Arrange for maintenance of any aircraft or component for which it is approved at another organisation that is working under the quality system of the organisation.
- Maintain any aircraft or any component for which it is approved at any location subject to the need for such maintenance arising either from the unserviceability of the aircraft or from the necessity of supporting occasional line maintenance, subject to the conditions specified in the exposition

- Maintain any aircraft and/or component for which it is approved at a location identified as a line maintenance location capable of supporting minor maintenance and only if the organisation exposition both permits such activity and lists such locations;
- Issue certificates of release to service in respect of completion of maintenance



Safety and Quality Policy

- The organization shall establish a Safety Management System (SMS)
- The primary objectives of the quality system are to enable the organisation to ensure that it can deliver a safe product and that organisation remains in compliance with the requirements
- An essential element of the quality system is the independent audit and quality feedback system
- the independent audit should ensure that all aspects of CAR- 145 compliance are checked every 12 months

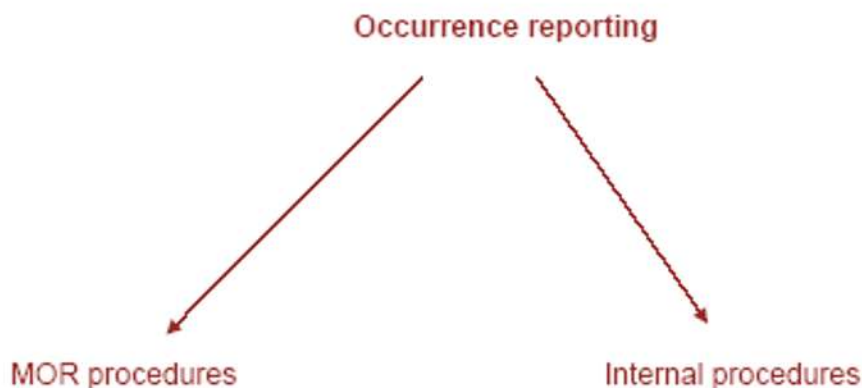


Safety and quality policy, maintenance procedures and quality system

Occurrence reporting

- The organisation shall report to DGCA, the state of registry and the organisation responsible for the design of the aircraft or component

- The aim of occurrence reporting is to identify the factors contributing to incidents, and to make the system resistant to similar errors.
- The internal reporting process should be closed-loop
- Reporting system should enable and encourage free and frank reporting reports as soon as practicable but in any case within 72 hours of the organisation identifying the condition



MOR (mandatory occurrence reporting)

Maintenance records

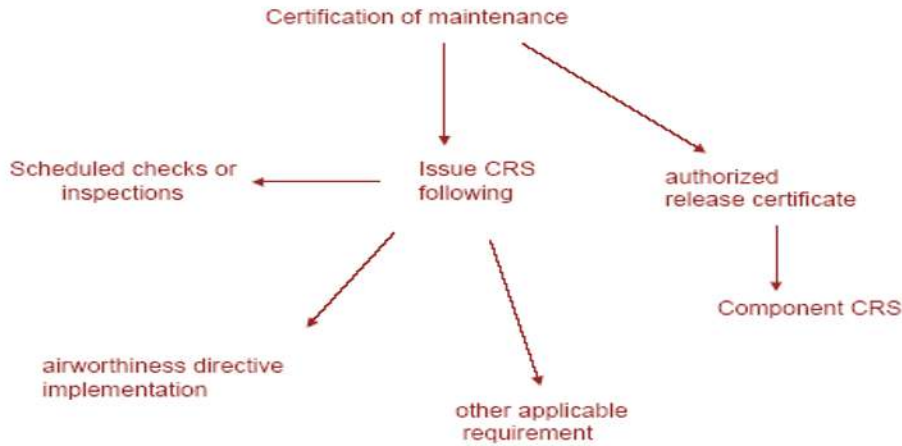
- organisation shall retain a copy of all detailed maintenance records and any associated maintenance data for three years from the date the aircraft or component to which the work relates was released from the organization
- record can be either a paper or computer system or any combination of both.
- Computer systems used for maintenance should have at least one backup system which should be updated at least within 24 hours of any maintenance.
- If organisation approved under this CAR terminates its operation, all retained maintenance records covering the last three years shall be distributed to the last owner or customer



CERTIFICATE OF MAINTENANCE

- A certificate of release to service shall be issued by appropriately authorised certifying staff on behalf of the organisation shall be issued before flight at the completion of any maintenance
- A component without CA form 1 can be used in unforeseen case for for a maximum of 30 flight hours or until the aircraft first returns to the main line station or main maintenance base
- Certificate can be used for import/export purposes

- primary purpose of the Certificate is to declare the airworthiness of maintenance work undertaken on products, parts and appliances
- Certificate is not a delivery or shipping note.
- Aircraft are not to be released using the Certificate.
- The Certificate should be in English, and if appropriate, in one or more other languages.
- no restriction in the number of copies of the Certificate sent to the customer or retained by the originator

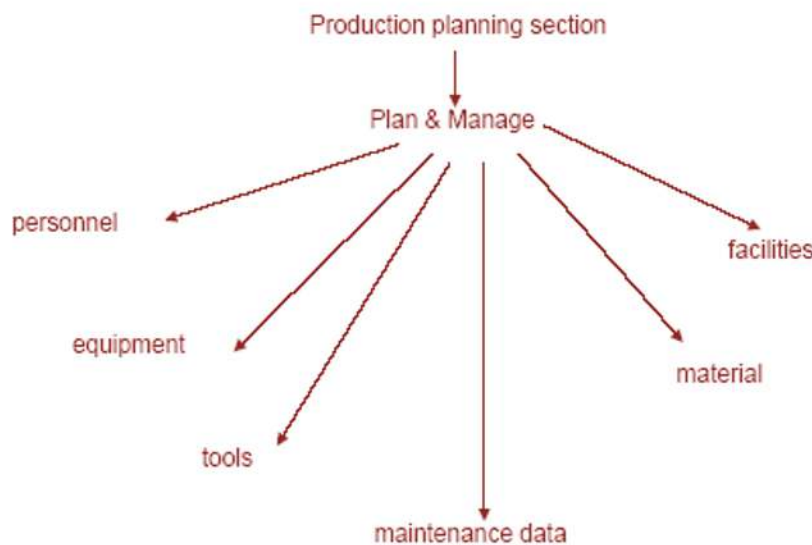


CA FORM 1

1.DGCA, India		2. AUTHORISED RELEASE CERTIFICATE CA FORM 1			3. Form Tracking Number
4. Approved Organization Name and Address:				5. Work Order/Contract/ Invoice	
6. Item	7. Description	8. Part No	9. Qty	10. Serial/ Batch No	11. Status/ Work
12. Remarks					
13 a. Certifies that the items identified above were manufactured in conformity to:			14 a. CAR 145.A.50 Release		
<input type="checkbox"/> approved design data and are in condition for safe operation. <input type="checkbox"/> non approved design data specified in block 12.			<input type="checkbox"/> Other regulation specified to Service in block 12. Certifies that unless otherwise specified in block 12, the work identified in block 11 and described in block 12, was accomplished in accordance with CAR 145 and in respect to that work the items are considered ready for release to service.		
13 b. Authorised Signature		13 c. Approval / Authorisation Number		14 b. Authorised Signature	14 c. Certificate/ Approval Ref No.
13 d. Name		13 e. Date (dd/mm/yyyy)		14 d. Name	14 e. Date (dd/mm/yyyy)
THIS CERTIFICATE DOES NOT AUTOMATICALLY CONSTITUTE AUTHORITY TO INSTALL. WHERE THE USER/INSTALLER PERFORMS WORK IN ACCORDANCE WITH REGULATIONS OF AN AIRWORTHINESS AUTHORITY DIFFERENT THAN THE AIRWORTHINESS AUTHORITY SPECIFIED IN BLOCK 1, IT IS ESSENTIAL THAT THE USER/INSTALLER ENSURES THAT HIS/HER AIRWORTHINESS AUTHORITY ACCEPTS ITEMS FROM THE AIRWORTHINESS AUTHORITY SPECIFIED IN BLOCK 1. STATEMENTS IN BLOCKS 13A AND 14A DO NOT CONSTITUTE INSTALLATION CERTIFICATION. IN ALL CASES AIRCRAFT MAINTENANCE RECORDS MUST CONTAIN AN INSTALLATION CERTIFICATION ISSUED IN ACCORDANCE WITH THE NATIONAL REGULATIONS BY THE USER/INSTALLER BEFORE THE AIRCRAFT MAY BE FLOWN					

Production planning

- The planning of maintenance tasks, and the organising of shifts, shall take into account human performance limitations.
- the production planning function includes two complementary elements:
 - 1.scheduling the maintenance work ahead
 - 2.during maintenance work, organising maintenance teams and shifts and provide all necessary support
- The primary objective of the changeover / handover information is to ensure effective communication at the point of handing over the continuation or completion of maintenance actions



Equipment, tools and material

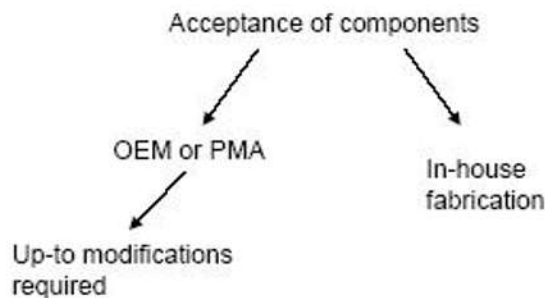
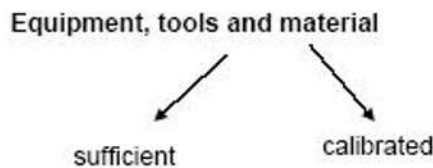
- The organisation shall have available and use the necessary equipment, tools and material to perform the approved scope of work.
- Equipment and tools must be permanently available, except in the case of any tool or equipment that is so infrequently used
- The organisation shall ensure that all tools, equipment and particularly test equipment, as appropriate, are controlled and calibrated according to an officially recognised standard

Acceptance of components

- Components which are in a satisfactory condition, released on a CA Form 1 or equivalent and marked in accordance with CAR 21 Subpart Q.
- organisation shall ensure that the particular component is eligible to be fitted prior to installation
- An equivalent document to a CA Form 1 may be:
 1. a release document issued by an organisation acceptable to DGCA.
 2. a release document issued by an organisation approved under the terms of a DGCA maintenance bilateral agreement

Fabrication

- CAR 145 organisation can fabricate restricted range of parts
- Items fabricated by an organisation approved under CAR -145 may only be used by that organisation in the course of overhaul, maintenance, modifications, or repair of aircraft or components
- data to fabricate the part should be approved either by DGCA or the type certificate (TC) holder or CAR-21 design organisation approval holder, or supplemental type certificate (STC) holder
- It is not acceptable to fabricate any item to pattern unless an engineering drawing of the item is produced which includes any necessary fabrication processes and which is acceptable to DGCA



Fuel Tank Safety Training

- Large aeroplanes as defined as maximum type certified passenger capacity of 30 or more or a maximum certified payload capacity of 7500 lbs (3402 kg) cargo or more

Phase of training	Applicable to
1-Awareness	persons representing the maintenance management structure of the organisation, competent authorities responsible as per 145.B.30 for the over-sight of CARt-145
2-detailed	plan, perform, supervise, inspect and certify the maintenance of aircraft and fuel system components

Phase 2 training consist of minimum 8hrs followed by examination(passing 75%)



QUESTION ?

- 1.Car 145 is applicable to
- 2.Scope of 145 is mentioned in
- 3.Validity of 145 is mentioned in
- 4.4 main parts of MOE is
- 5.Documents equivalent to ca form 1 is
- 6.Occurrence is reported when
- 7.large 145 organisation is with how many maintenance personnel
- 8.In smallest organisation full time means how much duration in a week
- 9.Person / group Of person represent
- 10.Minimum age of support staff
- 11.Continuation purpose is
- 12.For category B2 person to enjoy privileges of category-a required how much experience
- 13.Human factor training is conducted by
- 14.Privileges of 145 organisation is
- 15.Category-A task training is provided by

Aircraft Operations

Commercial air transport / Commercial operation

Commercial air transport

An aircraft operation involving the transport of passengers, cargo or mail for remuneration or hire.



Commercial air transport

General aviation operation.

An aircraft operation other than a commercial air transport operation or an aerial work operation. • Aerial work. An aircraft operation in which an aircraft is used for specialized services such as agriculture, construction, , surveying, observation and patrol, search and rescue, aerial advertisement, etc.



Aerial photography



Aerial advertisement

Commercial operation

shall mean any operation of an aircraft, in return for remuneration or other valuable consideration, which is available to the public or, when not made available to the public, which is performed under a contract between an operator and a customer, where the latter has no control over the operator;

AIR OPERATOR'S CERTIFICATE

-An air operator's certificate (AOC) is the approval granted by a national aviation authority to an aircraft operator to allow it to use aircraft for commercial purposes. This requires the operator to have personnel, assets and system in place to ensure the safety of its employees and the general public.

-The certificate will list the aircraft types and registrations to be used, for what purpose and in what area - specific airports or geographic region. In accordance with Rule 134 of the Aircraft Rules, 1937 no persons shall operate an air transport service to, from and within India without permission of the Central Government.

-Air Operator's Certificates/ Permits for operating the following types of air transport services are presently issued by DGCA to applicants who meet the laid down requirements for the specific type of air transport service:

- Scheduled Commuter Air Transport Service (Passenger)
- Scheduled Commuter Air Transport Service (Cargo)
- Non- Scheduled Air Transport Service (Passenger)
- Non- Scheduled Air Transport Service (Cargo)

-These Air Operator's Certificate/Permit are granted in compliance with the provisions of Annex 6 Part I.

-The purpose of an AOC/AOP is to certify that specified commercial air transport operations are authorised by DGCA and are to be conducted in compliance with applicable regulations and rules.

Suspension/ Cancellation or Revocation of AOC/AOP

-Failure on the part of the operator to comply with the applicable requirements may result in either the imposing of administrative penalties or suspension/ cancellation or revocation of the AOC/AOP

-An operator should note that in the event of a suspension/ cancellation or revocation of an AOC/AOP, the operator needs to be recertified, with a process as determined by the DGCA, based on the reason for the suspension/cancellation

-An operator should note that even if an enforcement action was not taken by the DGCA, and operations are conducted in breach of a condition or conditions of the AOC/AOP, such operations are construed to be unauthorised and the operator is liable for enforcement action by the DGCA, on detection of such occurrences even belatedly.

-The guidance for enforcement is given in detail in the Enforcement Policy & Procedures Manual.

Nominated Post

-The duties and responsibilities and authorities shall be clearly defined and that clear delineation of functional tasks and lines of reporting shall be established and documented and in this regard the operator shall have following persons responsible for the following posts that should be approved by DGCA:

- a) Accountable Manager
- b) Director Flight Operations
- c) Director Engineering & Maintenance
- d) Director Quality Assurance
- e) Director Safety Management System
- f) Director Flight Safety g) Director Training
- h) Director Security
- i) Director Cabin Safety – if applicable
- j) Director of ground Operations k) Chief pilot of each fleet

Proving/ Validation Flights

-Proving flights will be required to demonstrate the readiness of the applicant to conduct operations using the equipment, facilities, services and personnel identified in the application and the associated documents in accordance with the procedures spelt out in the Operations Manual. When these flights are conducted with passengers e.g for re-certification of existing operators the flights will be termed as validation flights.

Issue of an Air Operator Permit/Certificate

-Based on the recommendations of the Certification team, the Project manager will submit the file for approval of the Competent Authority. The detailed process to be followed is given in Chapter 4

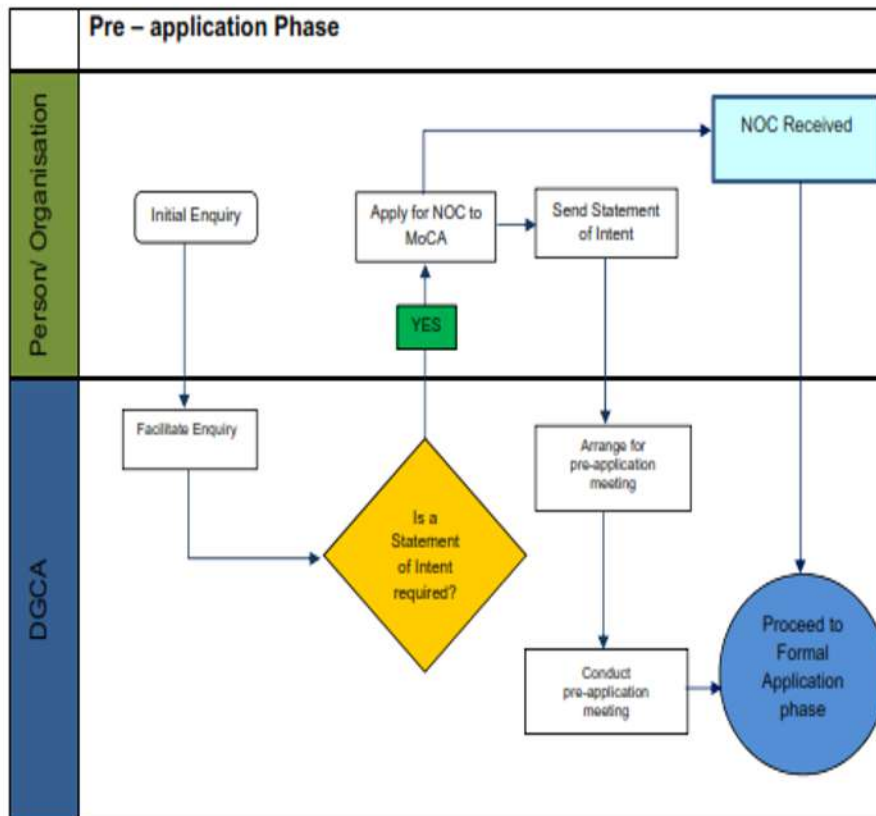
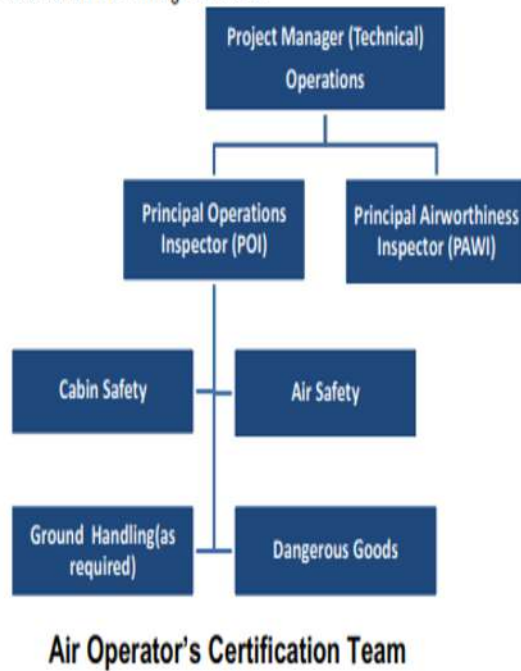
-Competent Authority, if satisfied, that the certification process has been conducted according to the required standards, may approve the issuance of the AOP/AOC along with required Operations Specifications certifying the competency of the applicant as an air operator

-scheduled commuter operator before starting operations shall have the schedule approved from DGCA. Certified true copy of an AOP/AOC along with Operations Specification shall be carried on board each Aircraft operated by the operator.

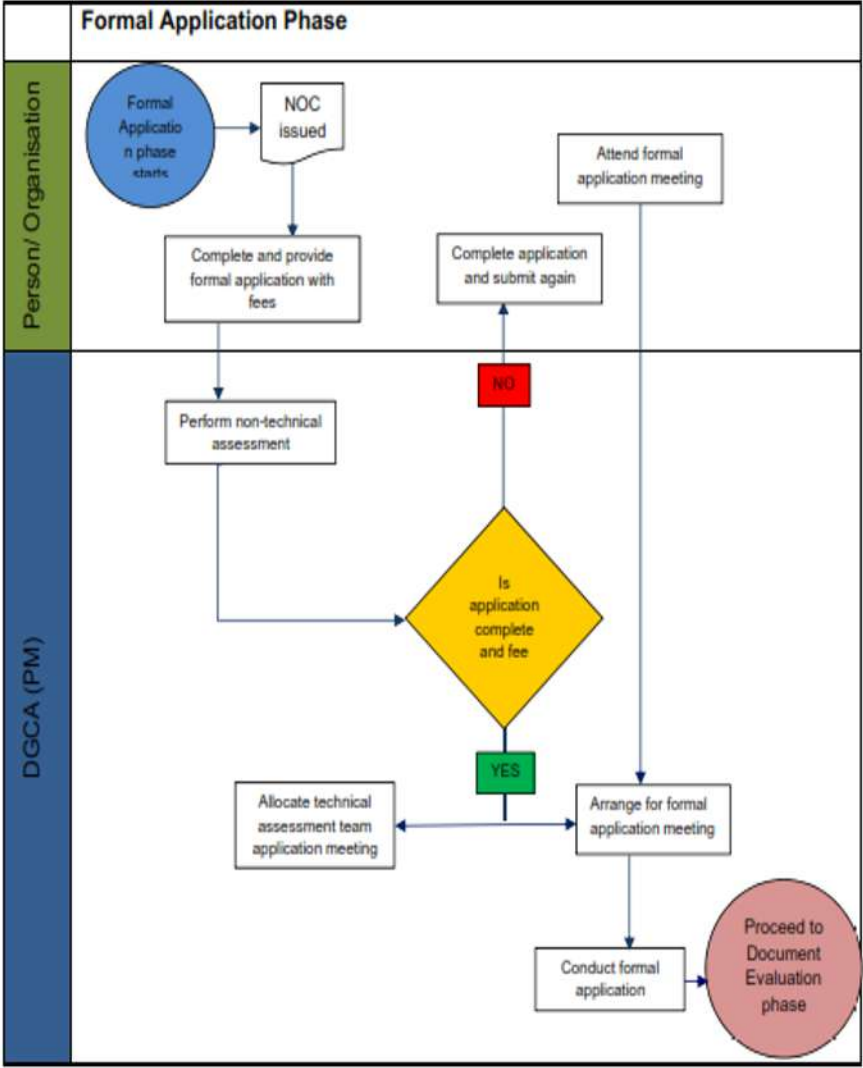
CERTIFICATION PROCESS

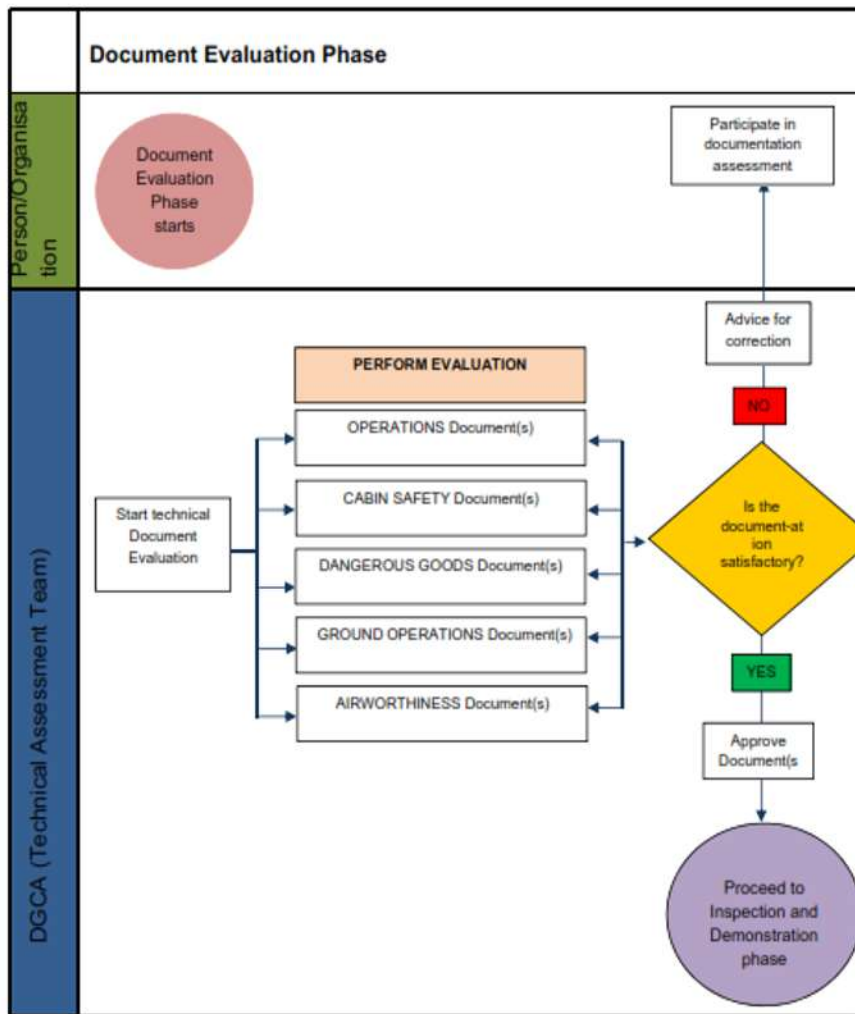
- The certification of an air operator shall be carried out by an Air Operator's Certification (AOC/AOP) Team.
- The AOC/AOP team comprises of Flight operations, airworthiness, cabin safety, and dangerous goods inspectors (and other personnel as appropriate).

The structure of the team is given below:

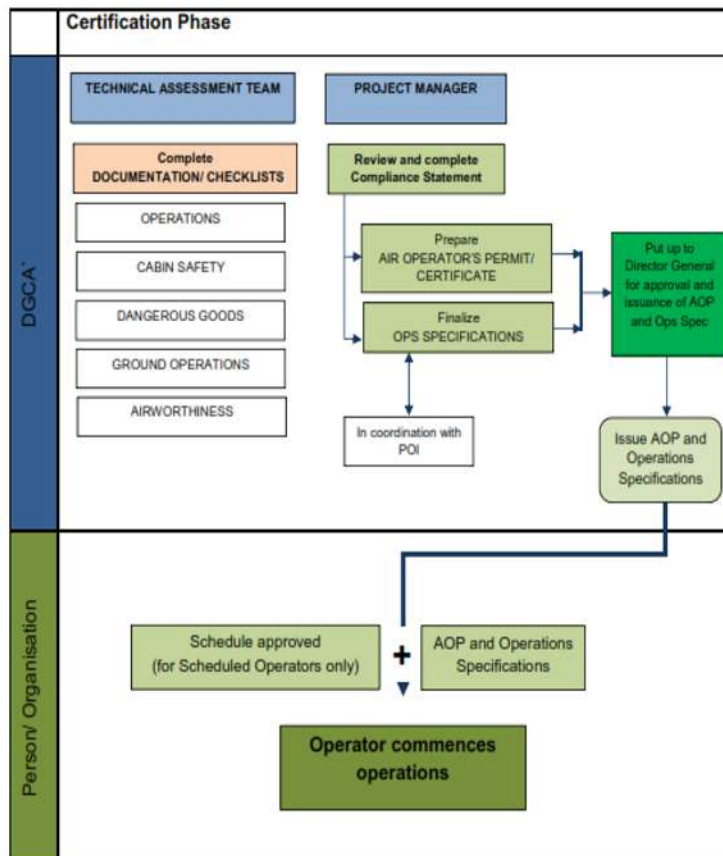


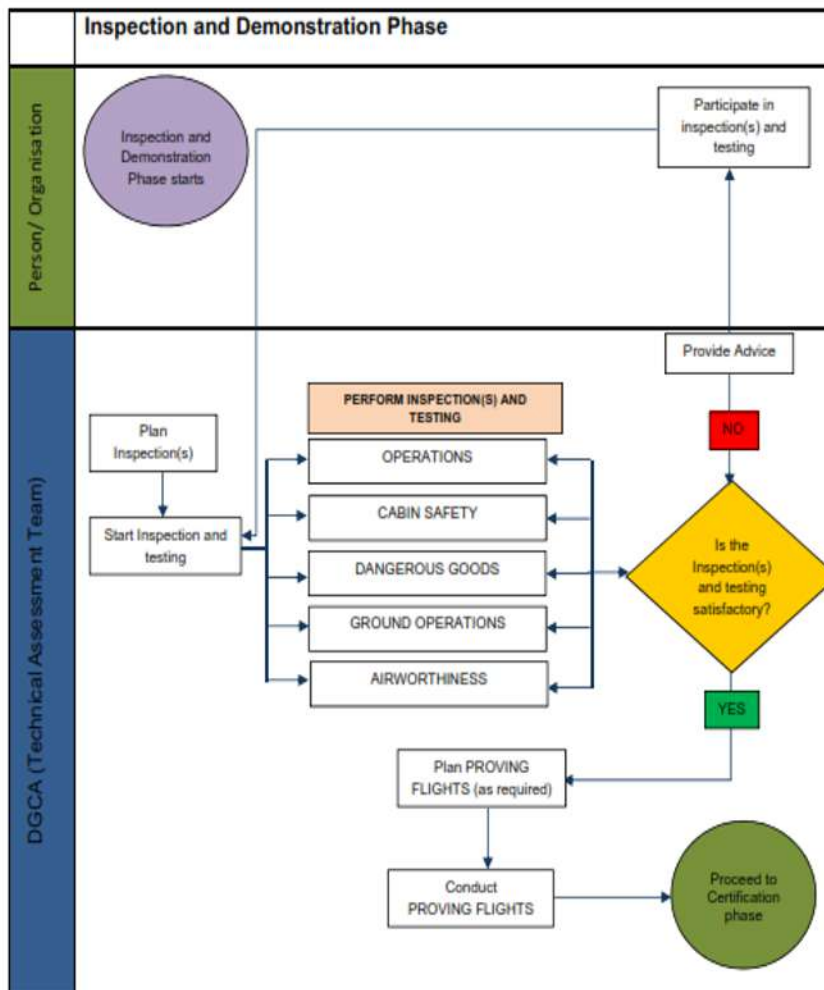
1. Air Operator's Certification Team 2. Pre-application Phase





3. Formal Application Phase 4. Document Evaluation Phase





5. Inspection and Demonstration Phase
6. Certification Phase

Operators Responsibilities

The operator is responsible for the continuing airworthiness of an aircraft and shall ensure that no flight takes place unless:

1. the aircraft is maintained in an airworthy condition, and;
2. any operational and emergency equipment fitted is correctly installed and serviceable or clearly identified as unserviceable, and;
3. the airworthiness certificate remains valid, and;
4. the maintenance of aircraft is performed in accordance with the approved maintenance programme

In the case of aircraft used by air operator certified in accordance with Schedule XI of Aircraft rule 1937, the operator is responsible for the continuing airworthiness of the aircraft it operates and shall:

- (1) ensure that no flight takes place unless the conditions defined in point above are met;
- (2) be approved, as part of its air operator certificate, as a continuing airworthiness management organisation pursuant to M.A. Subpart G (CAMO) for the aircraft it operates;

The operator shall ensure that any person authorised by the DGCA is granted access to any of its facilities, aircraft or documents related to its activities, including any subcontracted activities, to determine compliance. The operator shall be responsible for the satisfactory accomplishment of the pre-flight inspection.

In case of completion of maintenance operator is responsible to ensure maintenance is completed within time period specified

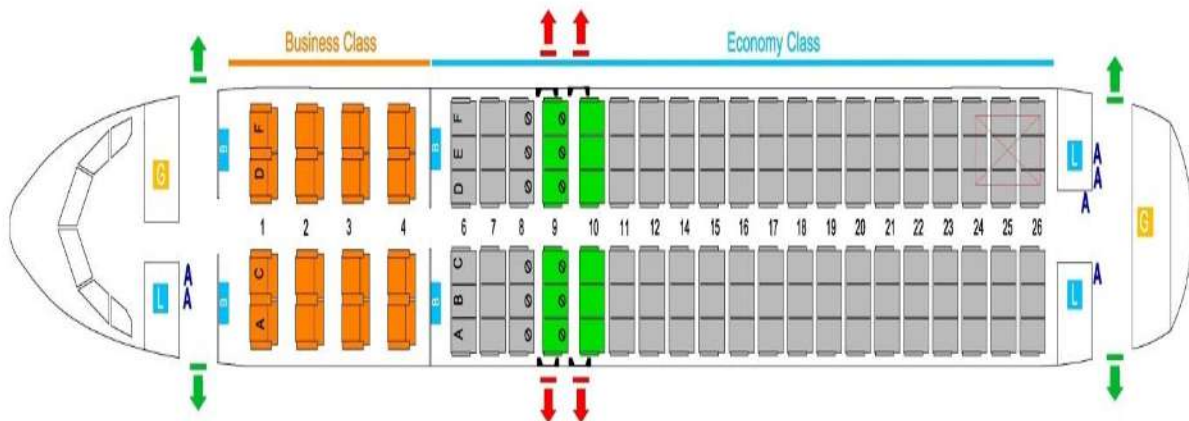
DOCUMENTS TO BE CARRIED ON BOARD BY INDIAN REGISTERED AIRCRAFT

- General Rule 7 of the Aircraft Rules, 1937 requires that all aircraft registered in India shall carry valid.
- No person in charge of any aircraft shall allow such aircraft to be flown unless the following valid documents, as applicable (in original or attested copies), are carried on board the aircraft:

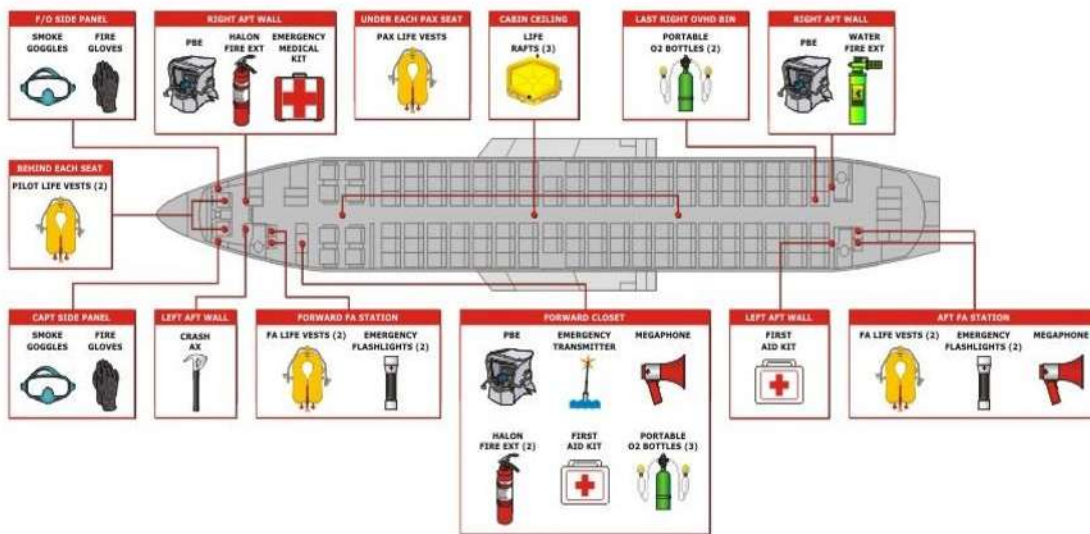
NO.	Documents
1.	Certificate of Registration
2.	a list of their names and places of embarkation and destination
3.	carrying cargo, a manifest and detailed declarations of the cargo
4.	Load and Trim Sheet
5.	Weight Schedule
6.	Current and suitable navigation charts/maps
7.	Route guides
8.	Emergency and Safety Equipment Layout
9.	LOPA (Layout of Passenger Arrangement)
10.	Maintenance Release/Certificate to release to service
11.	Aeroplane/ Helicopter search procedure checklist
12.	Cockpit and Emergency Check List unless these form part of Flight Manual
13.	Cabin Crew Manual
14.	If carrying dangerous goods, a list of such goods
15.	Flight Manual
16.	Minimum Equipment List
17.	Operations Manual
18.	Journey Log Book or equivalent documents approved by the DGCA
19.	Aeromobile Radio operation Licence
20.	Appropriate Licences for each member of the flight crew
21.	Air Operator's Permit
22.	Noise Certification of the aeroplane/ helicopter
23.	Airworthiness Review Certificate (ARC)
24.	Certificate of Airworthiness



Dangerous good



Layout of passenger arrangement



Emergency and Safety Equipment Layout CS 25.1541

Aircraft placarding(Markings)

General

The aircraft must display

- Specified marking and placards
- Any additional information, instrument markings, and placards required for the safe operation if there are unusual design, operating, or handling characteristics.

Instrument markings

- When markings are on the cover glass of the instrument, there must be means to maintain the correct alignment of the glass cover with the face of the dial
- Each instrument marking must be clearly visible to the appropriate crew member.



Aircraft Certification

(a) General

Certification rules

Certification specifications are those specifications which manufacturers need to demonstrate that their new product needs to comply. Certification specifications are also termed as ECAS (European Aviation Certification Standard)

Currently airworthiness codes are

EASA CS	Title
CS22	SAILPLANE AND POWERED SAILPLANE
CS23	NORMAL, UTILITY, COMMUTER AND ACROBATIC AIRCRAFT
CS25	LARGE AIRCRAFT
CS27	SMALL ROTORCRAFT
CS29	LARGE ROTORCRAFT
CS 31 GB 31 HB	GAS BALLOON, HOT AIR BALLOON
CSE	ENGINE
CSP	PROPELLER
CSLSA	LIGHT SPORTS AIRCRAFT
CSVLA	VERY LIGHT AIRCRAFT
CSVLR	VERY LIGHT AIRCRAFT





Aircraft and engine are designed and manufactured to certification specification (airworthiness code)

CAR 21 SUBPART B

TYPE-CERTIFICATES AND RESTRICTED TYPECERTIFICATES

- A type certificate is required for aircraft engine (APU),propeller
- After investigation by authority type certificate is issued.

Note-TC is not authority to fly, a valid type certificate is required for aircraft before it goes for service.

A type certificate is pre requisite for issue of certificate of airworthiness

Demonstration of capability

- Any organization applying for a type-certificate or restricted type-certificate shall demonstrate its capability by holding a design organization approval, issued by DGCA in accordance with Subpart JA.
- Or as an alternative procedure to demonstrate its capability, an applicant may seek DGCA agreement for the use of procedures

setting out the specific design practices, resources and sequence of activities necessary to comply with this Part, when the product is one of the following:

1. non powered sailplane
2. micro light aircraft with all up weight not exceeding 450 Kg.

Type-certification basis

(a) The type-certification basis to be notified for the issuance of a type-certificate or a restricted type-certificate shall consist of:

The applicable airworthiness code established/prescribed by DGCA under CAR 21.16A that is effective on the date of application for that certificate unless:

- (i) Otherwise specified by DGCA; or
- (ii) Compliance with later effective amendments is elected by the applicant

Any special condition prescribed in accordance with 21.16B (a).

An application for type-certification of large aeroplanes and large rotorcraft shall be effective for five years and an application for any other type-certificate shall be effective for three years, unless an applicant shows at the time of application that its product requires a longer period of time for design, development, and testing, and DGCA approves a longer period.

Flight Tests

- for the purpose of obtaining a type-certificate flight test shall be conducted in accordance with conditions for such flight testing specified by DGCA.
- For aircraft incorporating turbine engines of a type not previously used in a type-certificated aircraft, at least 300 hours of operation with a full complement of engines that conform to a type-certificate; and
- For all other aircraft, at least 150 hours of operation.

Issue of a type-certificate

The applicant shall be entitled to have a product type-certificate issued by DGCA after:

- demonstrating its capability in accordance with CAR21.14;
- submitting the declaration referred to in 21.20(d); and
- it is shown that:
 1. The product to be certificated meets the applicable type-certification basis and environmental protection requirements designated in accordance with 21.17 and 21.18;
 2. Any airworthiness provisions not complied with are compensated for by factors that provide an equivalent level of safety;
 3. No feature or characteristic makes it unsafe for the uses for which certification is requested; and
 4. The type-certificate applicant has expressly stated that it is prepared to comply with 21.44.
- In the case of an aircraft type-certificate, the engine or propeller, or both, if installed in the aircraft, have a type-certificate issued or determined in accordance with this Regulation.

Issue of a restricted type-certificate

For an aircraft that does not meet the provisions of 21.21(c), the applicant shall be entitled to have a restricted type-certificate issued by DGCA after:

1. complying with the appropriate type-certification basis established by DGCA ensuring adequate safety with regard to the intended use of the aircraft, and with the applicable environmental protection requirements.

Type design

(a) The type design shall consist of:

- .The drawings and specifications, and a listing of those drawings and specifications, necessary to define the configuration and the design features of the product shown to comply with the applicable type-certification basis and environmental protection requirements;
- Information on materials and processes and on methods of manufacture and assembly of the product necessary to ensure the conformity of the product;
- An approved airworthiness limitations section of the instructions for continued airworthiness as defined by the applicable airworthiness code; and
- Any other data necessary to allow by comparison, the determination of the airworthiness, the characteristics of noise, fuel venting, and exhaust emissions (where applicable) of later products of the same type.

Minor changes to type design

Minor changes in a type design/ type certificate shall be classified and approved either:

- By DGCA; or
- By an appropriately approved design organization under a procedure agreed with DGCA.

Major changes to type design

An applicant for approval of a major change shall:

- submit to DGCA substantiating data together with any necessary descriptive data for inclusion in the type design;
- show that the changed product complies with applicable certification specifications/airworthiness regulations and environmental protection requirements
- where the applicant holds an appropriate design organization approval, make the declaration referred to in para 21.20(d) according to the provisions of SubpartJA;
- comply with 21.33 and, where applicable, 21.35.

Approval of a major change in a type design/ type certificate is limited to that or those specific configuration(s) in the type design upon which the change is made.

Each type design shall be adequately identified.

Manuals

The holder of a type-certificate or restricted type-certificate shall produce, maintain and update master copies of all manuals required by the applicable type-certification basis and environmental protection requirements for the product, and provide copies, on request, to DGCA.



GOVERNMENT OF INDIA
DIRECTORATE GENERAL OF CIVIL AVIATION

Form CA-30

Application for Type Certificate (TC)/ Restricted Type Certificate (RTC)		
1. Applicant		
1.1 Company Name, Company registration number, Address; Telephone, Fax and E-mail of Contact Person & Authorised Person	<i>[provide copy of registration with national Companies register]</i>	
1.2 Design Organisation Approval (DOA) status		
2. Product identification and fees information		
<input type="checkbox"/> Type Certificate	<input type="checkbox"/> Derivative/variant	<input type="checkbox"/> Restricted Type Certificate (RTC)
The fee shall be paid by crossed Demand Draft drawn in favour of the PAO, DGCA, MCA, New Delhi in accordance with the Rule 62 (1) (A) of the Aircraft Rules, 1937. Particulars of Draft - Draft No., Amount, Issuing Branch and Date of issue		
2 (a) Fixed wing aircraft		
Large Aeroplanes <input type="checkbox"/> over 5,700 kgs	Small/ Light Aeroplanes <input type="checkbox"/> over 5,700 kg up to 8,620 kg(incl. commuter) <input type="checkbox"/> over 1000 kg up to 5,700 kg <input type="checkbox"/> up to 1000 kg <input type="checkbox"/> VLA, powered sailplanes, sailplanes	
2(b) Rotorcraft	<input type="checkbox"/> Transport category	<input type="checkbox"/> Normal category <input type="checkbox"/> Light category
2.(c) Propulsion		
Engines <input type="checkbox"/> Reciprocating <input type="checkbox"/> Turbo prop <input type="checkbox"/> Turbo jet	Propeller <input type="checkbox"/>	
2.2 Type / Model designation(s)		
2.3 Foreign Approval Reference, and restrictions (if applicable)		
2.4 Restriction (if applying for RTC, to indicate kind of restriction)		
3. Applicable Airworthiness Code: Refer CAR 21.16A		
4. Applicant's declaration		
I confirm that the information contained herein is correct and complete. I agree to pay the fees levied by DGCA in respect of the issuance of a Type Certificate / Restricted Type Certificate and am aware of the consequences of non-payment.		
5. Signature		
Date	Name of the Authorised Representative	Signature
This Application should be sent to: Director (Aircraft Engineering Directorate), Directorate General of Civil Aviation, Opposite Safdar Jung Airport, New Delhi- 110 003, India, Telephone: 91-11-24623211		

See reverse for information

A type-certificate and restricted type-certificate shall be issued for an unlimited duration.(it is transeferable to natural or legal person)



GOVERNMENT OF INDIA
DIRECTORATE GENERAL OF CIVIL AVIATION

Form CA-31

Application for Approval of Major Change / Major Repair Design		
1. Applicant		
1.1 Company Name, Company registration number, Address; Telephone, Fax and E-mail of Contact Person & Authorised person	[provide copy of registration with national Companies register]	
1.2 Design Organisation Approval (DOA) status		
2. Classification, product identification		
<input type="checkbox"/> Major Change <input type="checkbox"/> Major Repair <input type="checkbox"/> Including Change to approved parts of Flight Manual (FM)		
2.1 Fixed wing aircraft		
Large Aeroplanes <input type="checkbox"/> over 5,700 kgs	Small/ Light Aeroplanes <input type="checkbox"/> over 5,700 kg up to 8,620 kg(incl. commuter) <input type="checkbox"/> over 1000 kg up to 5,700 kg <input type="checkbox"/> up to 1000 kg <input type="checkbox"/> VLA, powered sailplanes, sailplanes	
2.2 Rotorcraft	<input type="checkbox"/> Transport category	<input type="checkbox"/> Normal category <input type="checkbox"/> Light category
2.3 Propulsion		
Engines <input type="checkbox"/> Reciprocating <input type="checkbox"/> Turbo prop <input type="checkbox"/> Turbo jet	Propeller <input type="checkbox"/>	
3. Applicable Airworthiness Code: Refer CAR 21.16A		
4. Applicability / Description		
4.1 Applicability, Title, Description, Affected Areas (including manuals), Re-Investigations and Justification (<i>non TC-holder repairs only</i>)		
4.2 Foreign Approval Reference, and restrictions (<i>if applicable</i>)		
5. Applicant's declaration		
I confirm that the information contained herein is correct and complete.		
6. Signature		
Date	Name of the Authorised Representative	Signature
This Application should be sent to: Director (Aircraft Engineering Directorate), Directorate General of Civil Aviation, Opposite Safdar Jung Airport, New Delhi- 110 003, India, Telephone: 91-11-24623211		

See reverse for information



GOVERNMENT OF INDIA
DIRECTORATE GENERAL OF CIVIL AVIATION

Form CA-32

Application for Approval of Minor Change / Minor Repair Design		
1. Applicant		
1.1 Name, Address; Telephone, Fax and E-mail of Contact Person & Authorised person		
1.2 Design Organisation Approval (DOA) Status		
2. Classification, product identification		
<input type="checkbox"/> Minor Change <input type="checkbox"/> Minor Repair <input type="checkbox"/> Including Change to approved parts of Flight Manual (FM)		
2.1 Fixed wing aircraft		
Large Aeroplanes <input type="checkbox"/> over 5,700 kgs	Small/ Light Aeroplanes <input type="checkbox"/> over 5,700 kg up to 8,620 kg(incl. commuter) <input type="checkbox"/> over 1000 kg up to 5,700 kg <input type="checkbox"/> up to 1000 kg <input type="checkbox"/> VLA, powered sailplanes, sailplanes	
2.2 Rotorcraft	<input type="checkbox"/> Transport category	<input type="checkbox"/> Normal category <input type="checkbox"/> Light category
2.3 Propulsion		
Engines <input type="checkbox"/> Reciprocating <input type="checkbox"/> Turbo prop <input type="checkbox"/> Turbo jet	Propeller <input type="checkbox"/>	
3. Applicable Airworthiness Code: Refer CAR 21.16A		
4. Applicability / Description		
4.1 Applicability, Title, Description, Affected Areas (including manuals)		
4.2 Foreign Approval Reference (if applicable)		
5. Applicant's declaration		
I confirm that the information contained herein is correct and complete.		
6. Signature		
Date	Name of the Authorised Representative	Signature
This Application should be sent to: Director (Aircraft Engineering Directorate), Directorate General of Civil Aviation, Opposite Safdar Jung Airport, New Delhi- 110 003, India, Telephone: 91-11-24623211		

The individual fields of the application form may be varied in size to allow entry of all required information. The application should be in English language. (CA FORM 31 &32)

CAR 21 SUBPART D

SUPPLEMENT TYPE-CERTIFICATES

A supplemental type certificate (STC) is a national aviation authority-approved major modification or repair to an existing type certified aircraft, engine or propeller. As it adds to the existing type certificate, it is deemed "supplemental".

Demonstration of capability

- Any organization applying for a supplemental type-certificate shall demonstrate its capability by holding a design organization approval, issued by DGCA in accordance with Subpart JA.

- By way of derogation from paragraph (a), as an alternative procedure to demonstrate its capability, an applicant may seek DGCA agreement for the use of procedures setting out the specific design practices, resources and sequence of activities necessary to comply with this Subpart

Issue of a supplemental type-certificate

The applicant shall be entitled to have a supplemental type-certificate issued by DGCA after:

- complying with 21.103(a);
- demonstrating its capability in accordance with 21.112B;
- where, under 21.113(b), the applicant has entered into an arrangement with the type-certificate holder,
 1. The type-certificate holder has advised that it has no technical objection to the information submitted under 21.93; and
 2. The type-certificate holder has agreed to collaborate with the supplemental type certificate

holder to ensure discharge of all obligations for continued airworthiness of the changed product through compliance with 21.44 and 21.118A.

Manuals

The holder of a supplemental type-certificate shall produce, maintain, and update master copies of variations in the manuals required by the applicable type-certification basis and environmental protection requirements for the product, necessary to cover the changes introduced under the supplemental type-certificate, and furnish copies of these manuals to DGCA on request



GOVERNMENT OF INDIA
DIRECTORATE GENERAL OF CIVIL AVIATION

Form CA-33

Application for Approval of Supplemental Type Certificate (STC)		
1. Applicant		
1.1 Company Name, Company registration number, Address; Telephone, Fax and E-mail of Contact Person & Authorised Person	<i>[provide copy of registration with national Companies register]</i>	
1.2 Design Organisation Approval (DOA) status		
2. Classification, product identification and fees information		
Description of Change		
<input type="checkbox"/> Including Change to approved parts of Flight Manual (FM)		
2.1 Fixed wing aircraft		
Large Aeroplanes <input type="checkbox"/> over 5,700 kgs	Small/ Light Aeroplanes <input type="checkbox"/> over 5,700 kg up to 8,620 kg(incl. commuter) <input type="checkbox"/> over 1000 kg up to 5,700 kg <input type="checkbox"/> up to 1000 kg <input type="checkbox"/> VLA, powered sailplanes, sailplanes	
2.2 Rotorcraft	<input type="checkbox"/> Transport category	<input type="checkbox"/> Normal category <input type="checkbox"/> Light category
2.3 Propulsion		
Engines <input type="checkbox"/> Reciprocating <input type="checkbox"/> Turbo prop <input type="checkbox"/> Turbo jet	Propeller <input type="checkbox"/>	
The fee shall be paid by crossed Demand Draft drawn in favour of the PAO, DGCA, MCA, New Delhi in pursuance of Rule 62 (1) (F) of the Aircraft Rules, 1937. Particulars of Draft - Draft No., Amount, Issuing Branch and Date of issue		
3. Applicable Airworthiness Code: Refer CAR 21.16A		
4. Applicability / Description		
4.1 Applicability, Title, Description, Affected Areas (including manuals), Re-Investigations and Justification (<i>non TC-holder repairs only</i>)		
4.2 Foreign Approval Reference, and restrictions (<i>if applicable</i>)		
5. Applicant's declaration		
I confirm that the information contained herein is correct and complete. I agree to pay the fees levied by DGCA in respect of the issuance of a Supplemental Type Certificate and am aware of the consequences of non-payment.		
6. Signature		
Date	Name of the Authorised Representative	Signature
This Application should be sent to: Director (Aircraft Engineering Directorate), Directorate General of Civil Aviation, Opposite Safdar Jung Airport, New Delhi- 110 003, India, Telephone: 91-11-24623211		

See reverse for information
CA FORM 33

CAR 21 SUBPART P

Permits to fly

Permits to fly shall be issued to aircraft that do not meet, or have not been shown to meet, applicable airworthiness requirements but are capable of safe flight under defined conditions and for the following purposes

1. development;
2. showing compliance with regulations or certification specifications;
3. design organizations or production organizations crew training;
4. production flight testing of new production aircraft;
5. flying aircraft under production between production facilities;
6. flying the aircraft for customer acceptance;

7. delivering or exporting the aircraft;
8. flying the aircraft for DGCA acceptance;
9. market survey, including customer's crew training;
10. exhibition and air show;
11. flying the aircraft to a location where maintenance or airworthiness review are to be performed, or to a place of storage;
12. flying an aircraft at a weight in excess of its maximum certificated takeoff weight for flight beyond the normal range over water, or over land areas where adequate landing facilities or appropriate fuel is not available;
13. record breaking, air racing or similar competition;
14. flying aircraft meeting the applicable airworthiness requirements before conformity to the environmental requirements has been found;`
15. for non-commercial flying activity on individual non-complex aircraft or types for which a certificate of airworthiness or restricted certificate of airworthiness is not appropriate.

Flight conditions

Flight conditions include:

- (a) the configuration(s) for which the permit to fly is requested;
- (b) any condition or restriction necessary for safe operation of the aircraft, including:
 1. the conditions or restrictions put on itineraries or airspace, or both, required for the flight(s);
 2. the conditions and restrictions put on the flight crew to fly the aircraft;
 3. the restrictions regarding carriage of persons other than flight crew;
 4. the operating limitations, specific procedures or technical conditions to be met;
 5. the specific flight test programme (if applicable);
 6. the specific continuing airworthiness arrangements including maintenance instructions and regime under which they will be performed;

Issue of a permit to fly

- DGCA shall issue a permit to fly:
- An appropriately approved production organization may carry out a permit to fly operation under the privilege granted under 21.163(e), when the conditions of 21.708 have been approved in accordance with 21.710 and under the procedures agreed with DGCA

Duration and continued validity

A permit to fly shall be issued for a maximum of 12 months and shall remain valid subject to:

- compliance with the conditions and restrictions of 21.711(d) associated to the permit to fly;
- the permit to fly not being surrendered or revoked.
- the aircraft remaining on the same register



GOVERNMENT OF INDIA
DIRECTORATE GENERAL OF CIVIL AVIATION

PERMIT TO FLY

(*)	
DGCA hereby permit noted aircraft to fly within India under conditions listed below.	1. Nationality and registration marks
2. Aircraft manufacturer/type	3. Serial number
4. The permit covers	
5. Holder:	
6. Limitations/ Remarks	
7. Validity period:	
8. Place and date of issue	9. Signature of DGCA representative

This permit shall be carried on board during all flights

A permit to fly is not transferable.

CAR 21 SUBPART G

PRODUCTION ORGANISATION APPROVAL FOR PRODUCTS, PARTS AND APPLIANCES

Details the issuance of production organisation approval for showing conformity of production organisation with products, parts and appliance with applicable design data

Production Organisation Quality system

- The production organization shall demonstrate that it has established and is able to maintain a quality system. The quality system shall be documented. This quality system shall be such as to enable the organization to ensure that each product, part or appliance produced by the organization or by its partners, or supplied from or subcontracted to outside parties, conforms to the applicable design data and is in condition for safe operation
- An independent quality assurance function to monitor compliance with, and adequacy of, the documented procedures of the quality system.

The organization shall submit to DGCA a production organization exposition

Approval requirements

The production organization shall demonstrate,

- with regard to general approval requirements, facilities, working conditions, equipment and tools, processes and associated materials, number and competence of staff, and general organization are adequate to discharge obligations under 21.165.
- with regard to all necessary airworthiness, noise, fuel venting and exhaust emissions data:
 1. The production organization is in receipt of such data from DGCA, and from the holder of, or applicant for, the type-certificate, restricted type-certificate or design approval, to determine conformity with the applicable design data.
 2. The production organization has established a procedure to ensure that airworthiness, noise, fuel venting and exhaust emissions data are correctly incorporated in its production data.
 3. Such data are kept up to date and made available to all personnel who need access to such data to perform their duties.

Privileges

Pursuant to the terms of approval issued under 21.135, the holder of a production organization approval may:

- Perform production activities under this Part.
- In the case of complete aircraft and upon presentation of a Statement of Conformity (Form CA-52) under 21.174, obtain an aircraft certificate of airworthiness and a noise certificate.
- In the case of other products, parts or appliances issue authorized release certificates (Form CA-1).
- Maintain a new aircraft that it has produced and issue a certificate of release to service (Form CA-53) in respect of that maintenance.
- Under the procedures agreed with DGCA, carry out the 'permit to fly' operation and evaluation of flight condition for that operation.

A production organization approval shall be issued for a limited duration not exceeding one year.

CAR 21 SUBPART I

NOISE CERTIFICATES

the purpose of noise certification the aircraft designed, developed and operated in India shall meet compliance with 21.18.

Issue of noise certificates

- DGCA shall issues a noise certificate upon presentation of the documents required by Transferability
- Where ownership of an aircraft has changed, the noise certificate shall be transferred together with the aircraft.

Duration and continued validity

A noise certificate shall be issued for an unlimited duration. It shall remain valid subject to:

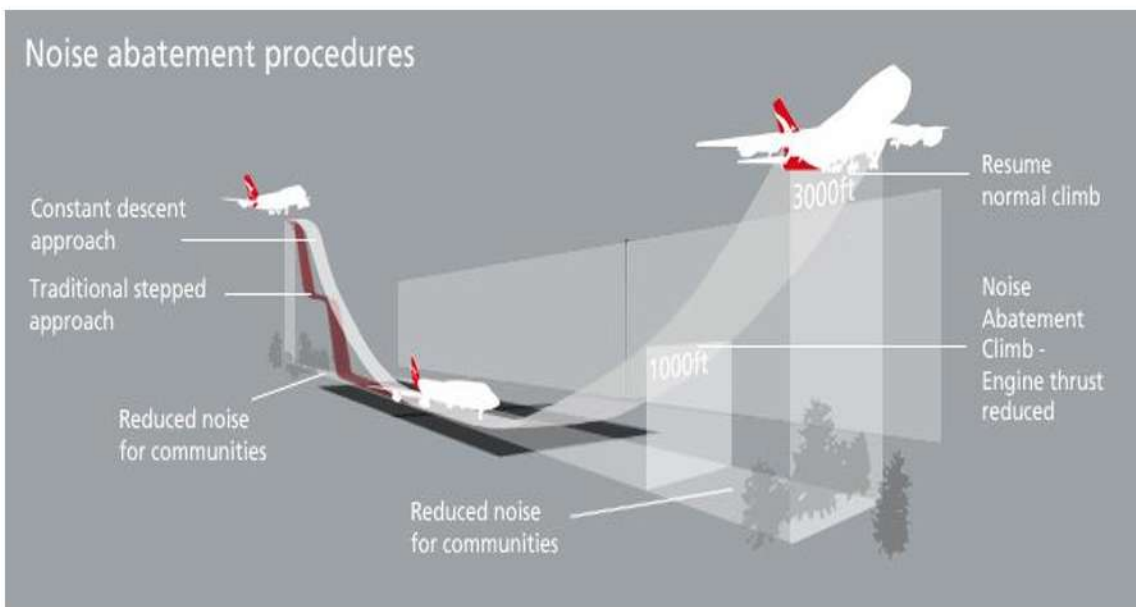
1. compliance with the applicable type-design, environmental protection and continuing airworthiness requirements; and
2. the aircraft remaining on the Indian register; and
3. the type-certificate or restricted type-certificate under which it is issued not being previously invalidated under 21.51.
4. the certificate not being surrendered.

Upon surrender or revocation, the certificate shall be returned to DGCA

Suspension and revocation of a noise certificate

- (a) Upon evidence that some of the condition specified in 21.211 (a) are not met, the DGCA shall suspend or revoke the noise certificate.
- (b) Upon issuance of notice of suspension or revocation of a noise certificate, DGCA shall state the reasons for suspension and revocation.





Excessive noise can cause hearing impairment, hypertension, ischemic heart disease, annoyance, sleep disturbance



सत्यमेव जयते
GOVERNMENT OF INDIA

DIRECTORATE GENERAL OF CIVIL AVIATION

Form CA 2006-1
**Application for Issue of
Noise Certificate**

Noise Certificate

1. PARTICULARS REGARDING THE APPLICANT

1.1 Name		1.2 Address for communication	
Phone	Fax	e-mail	

2. PARTICULARS REGARDING THE AIRCRAFT

2.1 Aircraft Registration:	2.2 Aircraft manufacturer:
2.3 Aircraft model:	2.4 Aircraft Serial number:
2.5 Date of manufacture:	2.6 Flight Manual reference:
2.7 Maximum take-off mass:	2.8 Maximum landing mass:
2.9 Engine manufacturer:	2.10 Engine model:
2.11 Engine serial number:	2.12 Noise certification Standards:

2.13 Additional modification incorporated if any for the purpose of compliance with the applicable noise certification Standards:

2.15 Lateral/ full-power noise level:	2.16 Approach noise level:	2.17 Flyover noise level:	2.18 Overflight noise level:	2.19 Take-off noise level:
---------------------------------------	----------------------------	---------------------------	------------------------------	----------------------------

2.20 ATTACHED DOCUMENTS (as required) (See CAR 21.204)

I hereby certify that the particulars provided in this application are true in every respect. It is further certified that the aircraft has been maintained as per manufacturer's recommendations and no modification has been carried out which may degrade the noise level while flying.

Date:

Signature:
Title:

Record of Action

For DGCA Use Only

For DGCA Use Only

3. REMARKS: (Examination of the application and the supporting documents for evaluation of eligibility)

Attach additional sheets, if required.

4. INSPECTION OF AIRCRAFT: (if carried out)

Date of Inspection:	Inspecting Officer:
Noise Certificate No.: (issued)	

- be maintained at all times in good order and condition as stipulated by the DGCA,
- be operated only by a person who holds an approved valid licence issued by the DGCA/Ministry of Communication,
- not to be operated in flight unless it has been inspected and certified as being in proper working order by a person authorised by the DGCA.

Condition

For grant of approval from DGCA proposal shall be made through local Airworthiness Office after ensuring the following.

- The proposed equipment is of the approved type and is compatible with the existing system.
- Necessary electrical power is available in the aircraft for the proposed equipment.
- Required space is available at suitable location in the aircraft and proposed installation shall not affect the structural integrity of the aircraft.
- C.G. should remain within the limits if proposed installation is carried out.
- There is no radio interference due to installation of the new equipment which affect the performance of any other radio equipment installed in the aircraft.
- Installation: The equipment installation should be such that the failure of any single unit required for communications, navigations or surveillance purposes or any combination thereof will not result in the failure of another unit required for communications, navigations or surveillance purposes.

Approval

- For obtaining the short term aeromobile license registered owner shall apply in quadruplicate on the prescribed form (available from WPC Wing, Ministry of Communication) along with a copy of Certificate of registration and requisite fee to the Wireless Advisor, Ministry of Communication through the local airworthiness office, who shall forward it to the DGCA.
- The Certificate of inspection is to be signed by an appropriately licensed AME indicating his license number on the application.
- On receipt of the short term permit the operator shall complete all the installation checks including ground and flight tests as per the approved installation check schedule

Application for Licence to establish, Maintain and Work Wireless Telegraphs in Aircraft Registered in India.

1. Name and Address of the applicant :
2. Particulars of the Aeromobile Licence, if any, already held :
3. Particulars of Aircraft in respect of which a licence is required.
 - a) Call Sign
 - b) Name and Type of Aircraft
 - c) Name of Owner
 - d) Passenger or Freight Aircraft
 - e) Normal Route
 - f) Place of Registry
(an attested copy of Certificate of Registration to be attached).
4. State whether the Radio Installation is provided in pursuance of statutory requirements or otherwise (i.e. compulsory fitted or non-compulsory fitted).
5. Nature of Service performed
6. Description of apparatus for which the licence is applied for:

A. Radio Communication Transmitters.

Manufacturers	Type rated power (Watts)	Output (khz)	Freq.	Range	Emission Freq. tolerance
Main					
Standby					

Application for radio license

CERTIFICATE OF REGISTRATION

Registration by the DGCA is for the purpose of controlling the safety of aviation in India and it in no way establishes the legal ownership of an aircraft

An aircraft may be registered in either of the following two categories, namely-

Category 'A'	Category 'B'
where the aircraft is wholly owned either- i. by citizens of India; or ii. by a company or corporation registered and having its principal place of business within India; or iii. by the Central Government or any State Government or any company or corporation	where the aircraft is wholly owned either- i. by persons resident in or carrying on business in India, who are not citizens of India; or ii. by a company or corporation registered elsewhere than in India and carrying on business in India.

<p>owned or controlled by either of the said Governments; or</p> <p>iv. by a company or corporation registered elsewhere than in India, provided that such company or corporation has given the said aircraft on lease to any person mentioned in para (i),(ii) or (iii) above</p>	
--	--

NOTE: No aircraft in respect of which the conditions required in above table are not satisfied, or which is already validly registered in another country, shall be registered in India.

Registration markings shall not be allotted which might be confused with International Code of Signals, especially:

- Registration beginning with the letter ‘Q’
- Registrations ‘SOS’, ‘XXX’, ‘PAN’ and ‘TTT’

CANCELLATION OF REGISTRATION OF AIRCRAFT

The registration of an aircraft registered in India may be cancelled at any time by the DGCA, if it is satisfied that:-

- such registration is not in conformity with para 3.1 of this CAR; or
- the registration has been obtained by furnishing false information; or
- the aircraft could more suitably be registered in some other country; or
- the aircraft has been destroyed or permanently withdrawn from use; or
- it is inexpedient in the public interest that the aircraft should remain registered in India; or
- the lease in respect of the aircraft registered has expired, or
- has been terminated by mutual agreement between the lessor and the lessee, or
- has been otherwise terminated in accordance with the provisions of the Lease Agreement, or terms of lease
- the Certificate of Airworthiness in respect of the aircraft has expired for a period of five years or more.

NOTE: The registration of an aircraft registered in India, to which the provisions of the Cape Town Convention or Cape Town Protocol apply, shall be cancelled by the DGCA, as provided in the Cape Town Protocol, if an application is received from IDERA Holder prior to expiry of the lease along with-

- the original or notarized copy of the IDERA; and
- a certificate that all Registered Interests ranking in priority have been discharged or the holders of such interest have consented to the deregistration and export.

FIXATION OF NATIONALITY AND REGISTRATION MARKINGS

- The nationality marks to be affixed on Indian registered aircraft would be capital letters “VT” in Roman character and registration marking would consist of a group of three letters in Roman Character as assigned by the Director General of Civil Aviation.
- A hyphen must be placed between the nationality and registration marks.
- The Nationality and Registration marks shall be painted on the aircraft or shall be affixed thereto by any other means ensuring a similar degree of permanence.

- The marks shall be kept clean and visible at all times.

Registration fees

The following fee shall be payable in respect of a certificate of registration for an aircraft having maximum permissible take-off weight —

CONTIONS	FEES
15,000 kilograms or less	Rs. 20,000/ -
exceeding 15,000 kilograms	Rs. 5,000/- for every 1,000 kilograms
temporary certificate of registration	twenty five percent of the fee payable
renewed, or re-issued	fiftypercent of fee
duplicate	ten percent of the fee payable

NOTE: All fee shall be paid by web-based online transaction system of DGCA (Bharatkosh).



REGISTRATION

**GOVERNMENT OF INDIA
CIVIL AVIATION DEPARTMENT**

Application for Registration of Aircraft

Section 1: Aircraft Details

1. Name and
Address of
Manufacturer

2. Type and
Model of
Aircraft

3. Manufacturer's
Serial Number

4. Year of
Manufacture

5. Seating
Accommodation

Crew

Passengers

--	--

6. Maximum Certificated
Take off Mass (in kg.)

7. Engine

Type

Power Rating

Number of engines

--	--	--

Section 2: Aircraft History

8. The Aircraft is: (Please tick the appropriate box)

New

Used

No. of Hours Flown and
Cycles since New

9. Previously
Registered in India

Previous or Existing VT Registration Mark

10. Particulars of Previous Registration(s) in
any Country outside India, if applicable.

Note: The application shall be accompanied with the Certificate of deregistration from the previous registering authority.

11. History of Accidents (if any). Indicate incidents/accidents met by the aircraft, the nature and extent of damage sustained by the aircraft, details of any major repairs carried out and by whom. If required, a separate appendix may be attached.

Section 3: Particulars of Owner(s) / Lessor(s)

12. Owner

Name of Owner (in full) In case of Company / Corporation, give Names of Owners / Directors and their Nationalities	Residential Address of Owner(s)	Nationality of Owner(s)

13. Lessor

Name of Lessor	Address	Nationality	Principal Place of Business

Form 8, Dated 13th June 2017

APPLICATION FOR CERTIFICATE OF REGISTRATION

16. Category in which Registration is claimed (A or B) vide Rule 30 of the Aircraft Rules.

17. In the case of aircraft owner as in 15 – Category B (i) or (ii), state

a) How long has the applicant been resident in or carrying on business in India?

b) Nature of Business of the Owner / Lessor

c) Nature of Business of the Lessee

18. Whether the Aircraft has been Mortgaged / Hypothecated:

a) If yes the name of the mortgage / hypothecating company

b) Address and nationality of the mortgage / hypothecating company

19. Usual station of Aircraft

20. Proposed Operations

21. Particulars of the Registration Fee Paid

14. Lessee

Name of Lessee	Address	Nationality	Principal Place of Business

Section 4: Ownership Details

15. Is the Aircraft Owned Wholly: (Please tick the appropriate box)

Category "A"

(i) By citizens of India; or

(ii) By a company or corporation registered and having its principal place of business within India or

(iii) By the Central Government or any State Government or any company or any corporation owned or controlled by either of the said Governments; or

(iv) By a company or corporation registered elsewhere than in India, provided that such company or corporation has given the said aircraft on lease to any person mentioned in sub-clause (i), sub-clause (ii) or sub-clause (iii)

OR

Category "B"

(i) By persons resident in or carrying on business in India, who are not citizens of India; or

(ii) By a company or corporation registered elsewhere than in India and carrying on business in India.

APPLICATION FOR CERTIFICATE OF REGISTRATION

I hereby declare that the above particulars are true in every respect and that nothing has been concealed or withheld by me. I have studied the relevant Aircraft Rules and Civil Aviation Requirements and shall abide by them.

Date of Application

Signature of Applicant(s)

Note 1: In case the applicant is not the owner, he should provide evidence in writing that he has been duly authorized by the owner to furnish the required information and to sign the documents on his behalf.

Note 2: Documentary Proofs of the above items are required to be submitted by the applicant.

For Official Use Only

While entering the above Aircraft "VT-" on the Indian Civil Aircraft Register, it has been ensured that-

- | | | |
|----|--|--------------------------|
| 1) | The Requirements of this CAR have been complied with; | <input type="checkbox"/> |
| 2) | The Civil Aircraft Register has been updated; | <input type="checkbox"/> |
| 3) | The State of Design has been advised of the Registration (applicable for New Type of Aircraft only). | <input type="checkbox"/> |

Date:

(Signature of Authorized Officer)

APPLICATION FOR CERTIFICATE OF REGISTRATION

CERTIFICATE OF AIRWORTHINESS

-Rule 50 of the Aircraft Rules, 1937 empowers the Director General of Civil Aviation (DGCA) to issue or validate the Certificate of Airworthiness of an Aircraft.

-Rule 15 requires that no aircraft shall be flown unless the aircraft possess a valid Certificate of Airworthiness (C of A).

-Sub rule 5 of Rule 50 specifies that a certificate of airworthiness shall be invalid unless the Director –General or an organisation approved under these rules, carries out a review of compliance with applicable airworthiness standards and issues an airworthiness review certificate valid for such periods as may be specified therein which may be extended by the Director-General or an organisation approved under these rules, in accordance with such procedures as may be specified by the Director-General.

-Sub rule 1 of Rule 55 states that the Certificate of Airworthiness of an aircraft shall be deemed to be suspended under the conditions mentioned therein.

-Sub rule 2 of the said Rule 55 empowers the Director General to suspend or cancel the Certificate of Airworthiness whenever reasonable doubt exists as to the safety of an aircraft

-Application for issue of C of A, Airworthiness Review Certificate (ARC) and Aircraft Noise Certificate
After the aircraft has been registered, the owner or his authorized representative may apply to DGCA headquarters together with necessary fees for issue of Certificate of Airworthiness (CA Form 25)
-Airworthiness Review Certificate along with recommendation report for issue of ARC Noise Certificate (CA-2006-1)

Issue of C of A and ARC

On receipt of the copy of application along with C of R and requisite documents, the regional/sub-regional airworthiness office, for the issue of C of A and ARC, shall carry out:

- Application form review;
- Aircraft configuration identification;
- Aircraft documentation review; and
- Aircraft inspection.

Regional/sub-regional airworthiness office after ensuring the relevant requirements for the issuance of C of A and ARC have been met will

forward recommendations along with a copy of the completed C of A /ARC checklist to DGCA Hqrs for issuing the C of A and ARC. On receipt of satisfactory recommendation, C of A and ARC shall be issue by the DGCA Hqrs

Note: Issue of ARC in respect of an aircraft shall be carried out at Hqrs for the first time only. Subsequent issue and extension of ARC shall be carried out by the respective regional/sub-regional office or approved organization in accordance with the privileges conferred

Validation of C of A

DGCA may render valid a certificate of airworthiness in respect of an aircraft provided:

- The airworthiness authority of the country of manufacture has issued a C of A or such equivalent document;
- The applicable airworthiness requirements issued by the DGCA are complied with; and
- The applicant furnishes necessary documents and technical data relating to the aircraft as specified in Para 2 of this CAR

Suspension or cancellation of Certificate of Airworthiness:

The Certificate of Airworthiness of an aircraft shall be deemed to be suspended when,


- An aircraft ceases or fails to conform with the requirements / rules in respect of operation, maintenance, modification, repair, replacement, overhaul, process or inspection applicable to that aircraft.
- Airworthiness review certificate is not valid;
- "Lifed" components when due are not replaced / CMR items not complied;
- Mandatory modifications/ inspections are not carried out, as and when due;
- Unapproved repairs/ Modifications are carried out;
- Unapproved materials/ procedures/ practices are used;
- Aircraft has suffered major damage or defect or develops a major defect, which would affect the safety of the aircraft or its occupants in subsequent flights;
- Valid and current mandatory documents are not carried on board.

FEES for Certificate of Airworthiness

CONDITION	FEES
1,000 kilograms or less	Rs.20,000/-
Exceeding 1,000 kilograms, for every 1,000 kilograms or part thereof	Rs.1,000/-
Validation	Fifty percent of the fees payable
Issue of duplicate Certificate Airworthiness	Ten percent of fess payable
ISSUE OF ARC	Fifty percent of the fees payable(COFA fees)

NOTE: All fee shall be paid by web-based online transaction system of DGCA (Bharatkosh).

सं० / No. :


 भारत / India

ना० वि० २३ / C.A.

नागर विमानन महानिदेशालय / Directorate General of Civil Aviation

उड़न-योग्यता प्रमाण-पत्र / Certificate Of Airworthiness

राष्ट्रीयता तथा पंजीकरण चिन्ह / Nationality and Registration Mark	विमान निर्माता तथा विमान निर्माता द्वारा विमान को दिया गया नाम / Manufacturer and Manufacturer's Designation of Aircraft	विमान क्रम सं० / Aircraft Serial No.
वर्ग / Category		
उपप्रभाग- / Sub-Division		
आवश्यक न्यूनतम कर्मी दल / Minimum Crew Necessary		
प्राधिकृत अधिकतम कुल भार / Maximum All –Up –Weight Authorized		

इस विमान का परिचालन इस विमान के सम्वन्ध में जारी की गयी अनुमोदित उडान-नियमावली तथा उसमें किये गए उतरवर्ती संशोधनों के अनुसार किया जायेगा। यह उडान-नियमावली इस उडन-योग्यता प्रमाण-पत्र का एक भाग समझी जायेगी तथा विमान में जायेगी।

This aircraft is to be operated in accordance with the approved Flight Manual and its subsequent amendments, issued in respect of this aircraft. The Flight Manual shall form a part of this Certificate of Airworthiness and shall be carried on board.

यह उडन-योग्यता प्रमाण-पत्र, उपर्युक्त विमान, जिसे पूर्वाक्त शर्तों एवं सम्वद्ध परिचालन परिसीमाओं के अनुरूप सांघारित और प्रचालित किये जाने पर उडन-योग्य समझा जाता है; उसके लिए ०७ दिसंबर, १९५४ के अंतर्राष्ट्रीय नागर विमानन विषयक अभिसमय तथा समयसमय- पर यथा संशोधित विमान-नियमावली, १९३७, के अनुसार जारी किया जाता है।

This Certificate of Airworthiness is issued pursuant to the Convention on International Civil Aviation, dated 07th December, 1944, and the Aircraft Rules, 1937, as amended from time to time, in respect of the above mentioned aircraft which is considered to be airworthy when maintained and operated in accordance with the foregoing and the pertinent operating limitations.

यदि उपरोक्त अनिवार्य शर्तें पूरी कर दी गयी हैं तो यह प्रमाण-पत्र उडन-योग्यता पुनरावलीकन प्रमाण-पत्र की वैधता रहने तक वैध रहेगा बशर्त कि इस प्रमाण-पत्र को वापस नहीं ले लिया जाता अथवा निलंबित नहीं कर दिया जाता।

This Certificate of Airworthiness shall remain valid, subjected to the above compulsory conditions being fulfilled along with valid Airworthiness Review Certificate, unless withdrawn, or suspended.


हस्ताक्षर / Signature :

नाम / Name :

पदनाम के साथ मुहर / Designation with Seal :

जारी करने का दिनांक / Date of Issue :

नयी दिल्ली / New Delhi.

 GOVERNMENT OF INDIA DIRECTORATE GENERAL OF CIVIL AVIATION		Form CA 2006-1 Application for Issue of Noise Certificate		
		1. PARTICULARS REGARDING THE APPLICANT		
1.1 Name		1.2 Address for communication		
Phone	Fax	e-mail		
2. PARTICULARS REGARDING THE AIRCRAFT				
2.1 Aircraft Registration:		2.2 Aircraft manufacturer:		
2.3 Aircraft model:		2.4 Aircraft Serial number:		
2.5 Date of manufacture:		2.6 Flight Manual reference:		
2.7 Maximum take-off mass:		2.8 Maximum landing mass:		
2.9 Engine manufacturer:		2.10 Engine model and serial number:		
2.11 Propeller type, model and serial number:		2.12 Noise certification Standards:		
2.13 Additional modification incorporated for the purpose of compliance with the applicable noise certification Standards:				
2.15 Lateral/ full-power noise level:	2.16 Approach noise level:	2.17 Flyover noise level:	2.18 Overflight noise level:	2.19 Take-off noise level:
2.20 ATTACHED DOCUMENTS (as required) (See CAR 21.204)				
I hereby certify that the particulars provided in this application are true in every respect. It is further certified that the aircraft has been maintained as per manufacturer's recommendations and no modification has been carried out which may degrade the noise level while flying.				
Date:		Signature: Title:		
Record of Action				
For DGCA Use Only		For DGCA Use Only		
3. REMARKS: (Examination of the application and the supporting documents for evaluation of eligibility)				
<i>Attach additional sheets, if required.</i>				
4. INSPECTION OF AIRCRAFT: (if carried out)				
Date of Inspection:		Inspecting Officer:		
Noise Certificate No.: (issued)				

ISSUE OF COFA APPLICATION FOR NOISE CERTIFICATE

GOVERNMENT OF INDIA
CIVIL AVIATION DEPARTMENT

FORM NO. 2
CA 25

Application for Issue of Certificate of Airworthiness

1. Name and Address of owner		
2. Nationality		
3. Name and address of applicant (if other than the owner of aircraft)		
4. Name and address of manufacturer		
5. Date of manufacture		
6. State of design		
7. Registration Mark		
8. Description of aircraft		
(a) New or used	(f) Number of engines fitted	
(b) Type	(g) Type of propeller (where applicable)	
(c) Series	(h) Certified passenger seating capacity	
(d) Manufacturer's serial number	(i) Avionics installed.	
(e) Type of engine	(j) Minimum crew required (As per AFM or manufacturers document)	
9. Maximum take-off mass of aircraft (as given in manufacturers document)		
10. Total number of hours flown since manufacture:		
(a) Aircraft.....hours.....cycles (if applicable)	(b) Engine in hours/cycle Port.....(inboard).....(outboard) Starboard.....(inboard).....(outboard)	
11. Hours flown since last C of A renewal (if applicable)		
12. Last major inspection carried out:		
13. Date of last major inspection:		

APPROVAL BY AIRWORTHINESS OFFICE :

- The Regional/Sub-regional Airworthiness office shall be intimated in advance about the weighing of the aircraft who may associate with the weighing process.
- The weighing of the aircraft shall be done in supervision of the Quality Manager or his representative, who shall be responsible for following the documented procedures of weighment.
- The duly signed weight schedule shall be submitted to Regional /Sub-Regional Airworthiness Office along with the computation details and weighment printout if available.
- After scrutiny the weight schedule shall be approved by Regional Airworthiness Office.

STANDARD WEIGHT OF FLIGHT CREW/ PASSENGERS:

the minimum standard weight (including handbag) (For preparation of load sheet and calculation of Centre of Gravity) shall be applied in all civil registered aircraft:

1. Crew 85 (75+10) kg.
2. Adult passenger (both Male & Female) 75 kg.
3. Child (Between 2 years and 12 years age) 35 kg.
4. Infant (Less than two years) 10 kg.

The Weight Schedule shall contain at least the following information :-

No.	Weight Schedule contents
1.	Type of Aircraft
2.	Registration Marking and Serial No. of aircraft.
3.	Empty weight including weight of unusable quantity of fuel and oil (kg.).
4.	Item wise Weight and details of removable equipment (kg.) (Including wireless equipment).
5.	Maximum fuel capacity (Usable) in liters and kg.
6.	Maximum oil capacity (Usable) in liters and kg.
7.	Maximum commercial weight with fuel and oil tanks full
8.	MTOW (as per Certificate of Airworthiness/ Flight Manual) (kg.).
9.	Empty weight Centre of Gravity.
10.	Centre of Gravity Range and datum.
11.	Maximum number of passengers.
12.	Signature of appropriately licensed AME/ Approved person.
13.	Date of weighing

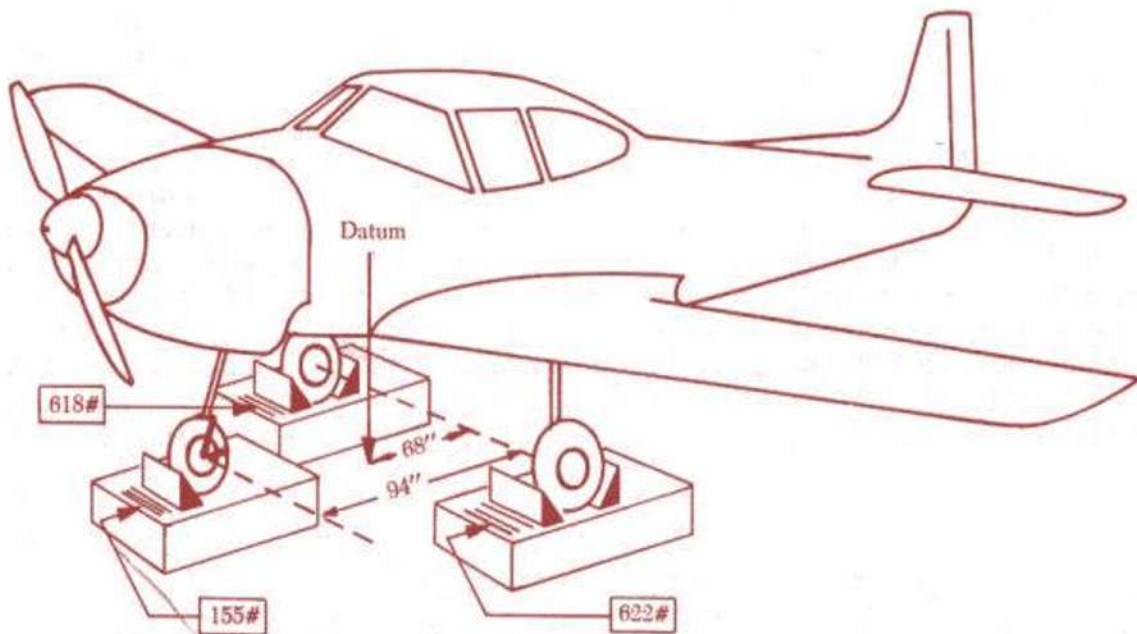


FIGURE 3-9. Weighing an aircraft using platform scales.



AIRCRAFT WIEGHING

CAR-M

PART- M CONTINUED AIRWORTHINESS

Introduction

- CAR-M specifies certain technical requirements to be complied by organizations and personnel involved in the maintenance of aircraft and aeronautical products, parts and appliances in order to demonstrate the capability and means of discharging the obligations and associated privileges thereof.
- The CAR-M also specifies conditions of issuing, maintaining, amending, suspending or revoking certificates attesting such compliance.
- The CAR M, is applicable to all operators of Indian registered aircraft irrespective of whether such aircraft are maintained by their own organization or by other approved maintenance organization
- RULE 50A-Condition for CofA to remain in force [This is ensured by issuing certificates of Airworthiness to an aircraft and subjecting the aircraft to annual airworthiness review certificates (ARC)]
- RULE 133A-CAR M issued as per this rule
- RULE 133B-CAR M organisation approved as per this rule
- RULE 133C-Fees to be paid for CAR M organisation approval
- Initial Issue (Revision 0)- 31stJuly 2010
- Revision 1 -15th February 2015-being issued to harmonise with regulations of EASA
- CAR M Issue-2 Rev 1 dated 23-6-2017

SUBPARTS

1. Subpart A- GENERAL
2. Subpart B –ACCOUNTABILITY
3. Subpart C -CONTINUING AIRWORTHINESS
4. Subpart D -MAINTENANCE STANDARDS
5. Subpart E –COMPONENTS
6. Subpart F -MAINTENANCE ORGANISATION
7. Subpart G- CONTINUING AIRWORTHINESS MANAGEMENT ORGANISATION
8. Subpart H- CERTIFICATE OF RELEASE TO SERVICE – CRS
9. Subpart I -AIRWORTHINESS REVIEW CERTIFICATE

CA FORMS

- CA Form 1 -Authorised Release Certificate
- CA Form 2 -Appilcation for intial issue/variation/renewal of SUBPART F & SUBPART G
- CA FORM 3 -DGCA Approval certificate for SUPART F
- CA FORM 6 -Approval recommendation for SUBPART F
- CA FORM 13 - Approval recommendation for SUBPART G
- CA Form 15 -Airworthiness Review Certificate(15A-issued by dgca,15B-issued by CAMO)
- CA Form 14 - Continuing Airworthiness Management Organisation

MANAGER

- Dependent upon the size of the organisation, the functions may be subdivided under individual managers or combined in any number of ways.
- In small maintenance organizations any manager may also be the accountable manager, and may also be the aircraft maintenance manager or the workshop manager
 1. ACCOUNTABLE MANAGER
 2. AIRCRAFT MAINTENANCE MANAGER
 3. WORKSHOP MANAGER
 4. CONTINUING AIRWORTHINESS MANAGER
 5. QUALITY MANAGER

DEFINITION

1. 'aircraft' means any machine that can derive support in the atmosphere from the reactions of the air other than reactions of the air.
2. 'certifying staff' means personnel responsible for the release of an aircraft or a component after maintenance
3. 'component' means any engine, propeller, part or appliance
4. 'continuing airworthiness'
means all of the processes ensuring that, at any time in its operating life, the aircraft complies with the airworthiness requirements in force and is in a condition for safe operation
5. 'large aircraft'
means an aircraft, classified as an aeroplane with avmaximum take-off mass of more than 5700 kg, or a multi-engine helicopter
6. 'maintenance'
means any one or combination of overhaul, repair, inspection, replacement, modification or defect rectification of an aircraft or component, with the exception of pre-flight inspection
8. 'organisation'
means a natural person, a legal person or part of a legal person. Such an organisation may be established at more than one location whether or not within the territory of India
9. 'Pre-flight inspection'
means the inspection carried out before flight to ensure that the aircraft is fit for the intended flight.

This Section establishes the measures to be taken to ensure that airworthiness is maintained, including maintenance.

It also specifies the conditions to be met by the persons or organizations involved in such continuing airworthiness management.

The owner is responsible for the continuing airworthiness of an aircraft and shall ensure:

- The aircraft is maintained in an airworthy condition
- Operational and emergency equipment fitted – correctly installed and serviceable or clearly identified as unserviceable
- The airworthiness certificate remains valid
- The maintenance of the aircraft - in accordance with the approved maintenance programmed

When the aircraft is leased, the responsibilities of the owner are transferred to the lessee

In the case of commercial air transport the operator is responsible for the continuing airworthiness of the aircraft it operates and shall:

- Be approved, as part of the air operator certificate issued by the EASA, for the aircraft it operates
- Be approved in accordance with Part-145 or contract such an organization

Occurrence Reporting

Any person or organization responsible shall report to the State of registry, the organization responsible for the type design or supplemental type design and, if applicable, the Member State of operator, any identified condition of an aircraft or component that hazards seriously the flight safety.

Maintenance Program

The maintenance programmed must establish compliance with:

- Instructions for continuing airworthiness issued by type certificate and supplementary type certificate holders and any other organization that publishes such data in accordance with Part-21
- Instructions issued by DGCA, if they differ from above or in the absence of specific recommendations
- Instructions defined by the owner or the operator and approved by DGCA

Airworthiness Directives

Any applicable airworthiness directive must be carried out within the requirements of that airworthiness directive, unless otherwise specified by the DGCA

Data Modification and Repair

Damage shall be assessed and modifications and repairs carried out using data approved by the DGCA or by an approved Part-21 design organization, as appropriate.

Aircraft Continuing Airworthiness Record System

At the completion of any maintenance, the associated CRS shall be entered in the aircraft continuing airworthiness records.

The records shall consist of:

- aircraft logbook,
- engine logbook(s) or engine module log cards,
- propeller logbook(s)
- log cards

for any service life limited component and the operator's technical log.

The aircraft continuing airworthiness records shall contain the current:

- Status of ADs and measures mandated by the EASA in immediate reaction to a safety problem
- Status of modifications and repairs
- Status of compliance with maintenance programmed
- Status of service life limited components
- Mass and balance report
- List of deferred maintenance

An owner or operator shall ensure that a system has been established to keep the following records for the periods specified:

- All maintenance records at least 24 months
- The total time and flight cycles as appropriate, of the aircraft and all life-limited components, at least 12 months
- Status of ADs applicable to the aircraft and components, at least 12 months
- Modifications and repairs to the aircraft, engine(s), propeller(s) and any other component vital to flight safety, at least 12 months after the aircraft or component was permanently withdrawn from service

Operator's Technical Log

Operator's technical log system must contain the following information:

- Information about each flight, to ensure continued flight safety,
- The current aircraft certificate of release to service,
- The current maintenance statement giving the aircraft maintenance status and maintenance next due except
- that the EASA may agree to the maintenance statement being kept elsewhere,
- All outstanding deferred defects rectifications
- Any instructions on maintenance support arrangements

An operator shall ensure that the aircraft technical log is retained for 36 months after the date of the last entry

Maintenance Data

The applicable maintenance data is:

- Any applicable requirement, procedure, standard or information issued by the EASA,
- Any applicable airworthiness directive,
- Applicable instructions for continuing airworthiness,
- issued by type certificate holders, supplementary type certificate holders and any other organization that publishes such data in accordance with Part 21.
- Any applicable data issued in accordance with Part-145.

Performance of Maintenance

- All maintenance shall be performed by qualified personnel.
- Follow the methods, techniques, standards and instructions specified in the maintenance data.
- All maintenance shall be performed using the tools, equipment and material specified in the maintenance data unless otherwise specified by Part-145.
- Tools and equipment shall be controlled and calibrated to an officially recognized standard.
- The area in which maintenance is carried out shall be well organized and clean in respect of dirt and contamination
- In case of inclement weather or lengthy maintenance, proper facilities shall be used.
- After completion of all maintenance a general verification must be carried out to ensure the aircraft or component is clear of all tools, equipment and any other extraneous parts and material, and that all access panels removed have been refitted.

Aircraft Defects

- Any aircraft defect that hazards seriously the flight safety shall be rectified before further flight
- Only the authorized certifying staff, or Part-145 can decide, using maintenance data, whether an aircraft defect hazards seriously the flight safety and therefore decide when and which rectification action shall be taken before further flight and which defect rectification can be deferred.
- Any aircraft defect that would not hazard seriously the flight safety shall be rectified as soon as practicable.
- Any defect not rectified before flight shall be recorded in the aircraft maintenance record system or operator's technical log system as applicable.

- No component may be fitted unless it is in a satisfactory condition.
- Prior to installation of a component on an aircraft the person / approved maintenance organization shall ensure that the particular component is eligible to be fitted when different modification and/or airworthiness directive configurations may be applicable.
- Standard parts shall only be fitted to an aircraft or a component when the maintenance data specifies the particular standard part.
- Material being either raw material or consumable material shall only be used on an aircraft or a

component when the aircraft or component manufacturer states so in relevant maintenance data or as specified in Part-145.

Component Maintenance

- The maintenance of components shall be performed by appropriately approved Part-145 maintenance organizations.
- Maintenance on any component may be performed by certifying staff only whilst such components are fitted to the aircraft.
- Such components, nevertheless, can be temporarily removed for maintenance when such removal is expressly permitted by the aircraft maintenance manual to improve access

Service Life Limited Component

- Installed service life limited components shall not exceed the approved service life limit as specified in the approved maintenance programmed and airworthiness directives.

Control of Unserviceable Component

- A component shall be considered unserviceable in any one of the following circumstances:
 - Expiry of the service life limit as defined in the maintenance program;
 - Non-compliance with the applicable airworthiness directives and other continued airworthiness requirement mandated by the Agency
 - Absence of the necessary information to determine the airworthiness status or eligibility for installation
 - Evidence of defects or malfunctions;
 - Involvement in an incident or accident likely to affect its serviceability.
- Unserviceable components shall be identified and stored in a secure location until a decision is made on the future status of such component.
- Components, which have reached their certified life limit shall be classified as unsalvageable and shall not be permitted to re-enter the component supply system, unless certified life limits have been extended or a repair solution has been approved.
- The organization shall ensure that:
 - Facilities are provided for all planned work, specialized workshops and bays are segregated as appropriate, to ensure protection from contamination and the environment.
 - Office accommodation is provided for the management of all planned work including in particular, the completion of maintenance records.
 - Secure storage facilities are provided for components, equipment, tools and material. Storage conditions shall ensure segregation of unserviceable components and material from all other components, material, equipment and tools.

Aircraft Certificate of Release to Service

- At the completion of all required aircraft maintenance in accordance with this Subpart an aircraft certificate of release to service shall be issued

Privileges of Organization AMO

- The organization may:

- Maintain any aircraft and/or component for which it is approved at the locations specified in the approval certificate and in the manual.
- Maintain any aircraft and/or component for which it is approved at any other location subject to such maintenance being only necessary to rectify arising defects.
- Issue certificates of release to service on completion of maintenance

Privileges of the CAMO

A continuing airworthiness management organisation approved in accordance with Section A, Subpart G of CAR-M may:

- manage the continuing airworthiness of aircraft, except those involved in air operator certified in accordance with schedule XI of aircraft rule 1937, as listed on the approval certificate;
- manage the continuing airworthiness of aircraft used by air operator certified in accordance with schedule XI of aircraft rule 1937 when
- listed both on its approval certificate and on its Air Operator Certificate (AOC);
- arrange to carry out limited continuing airworthiness tasks with any contracted organisation, working under its quality system, as listed on the approval certificate;
- extend, under the conditions of point M.A.901(f), an airworthiness review certificate that has been issued by DGCA or by another continuing airworthiness management organisation approved in accordance with Section A, Subpart G of CAR-M;

Airworthiness Review Staff

- Airworthiness review staff nominated by the approved continuing airworthiness management organisation can only be issued an authorisation by the approved continuing airworthiness management organisation when formally accepted by DGCA after satisfactory completion of an airworthiness review under supervision of the DGCA or under the supervision of the organisation's airworthiness review staff in accordance with a procedure approved by the DGCA.
- To be approved to carry out airworthiness reviews, an approved continuing airworthiness management organisation shall have appropriate airworthiness review staff to issue airworthiness review certificates or recommendations referred to in Subpart I, Section A of this CARM.

For aircraft used by air operator certified in accordance with schedule XI of aircraft rule 1937, and aircraft above 2730 kg MTOM, except balloons, these staff shall have acquired:

- (a) at least five years experience in continuing airworthiness, and;
- (b) an appropriate licence in compliance with CAR 66 or an aeronautical degree or equivalent, and;
- (c) formal aeronautical maintenance training, and;
- (d) a position within the approved organisation with appropriate responsibilities.
- (e) Notwithstanding points “a” to “d”, the requirement laid down in point (b) may be replaced by five years of experience in continuing airworthiness additional to those already required by point (b)

For aircraft not used by air operator certified in accordance with schedule XI of aircraft rule 1937 of 2730 kg

MTOM and below, and balloons, these staff shall have acquired:

- (a) at least three years experience in continuing airworthiness, and;
- (b) an appropriate licence in compliance with CAR 66 or an aeronautical degree or equivalent, and;
- (c) appropriate aeronautical maintenance training, and;
- (d) a position within the approved organisation with appropriate responsibilities;
- (e) Notwithstanding points “a” to “d”, the requirement laid down in point (b) may be replaced by four years of experience in continuing airworthiness additional to those already required by point (b)

APPENDIX III

Airworthiness Review Certificate-CA Form 15 a
DGCA INDIA

AIRWORTHINESS REVIEW CERTIFICATE

ARC reference:

Pursuant to DGCA Regulations for the time being into force, DGCA hereby certifies that the following aircraft

Aircraft Manufacturer:.....

Manufacturer's designation:

Aircraft registration:

Aircraft Serial number :

is considered airworthy at the time of this review.

Date of issue: Date of Expiry

Aircraft Flight Hours (FH) at date of issue

Signed: Authorisation No

1st Extension: The Aircraft has remained in a controlled environment in accordance with point M.A 901 of CAR-M for the last year. The aircraft is considered to be airworthy at the time of the issue.

Date of issue: Date of Expiry

Aircraft Flight Hours (FH) at date of issue

Signed: Authorisation No

Company Name Approval Reference

2nd Extension: The Aircraft has remained in a controlled environment in accordance with point M.A 901 of CAR-M for the last year. The aircraft is considered to be airworthy at the time of the issue.

Date of issue: Date of Expiry

Aircraft Flight Hours (FH) at date of issue

Signed: Authorisation No

Company Name Approval Reference

DGCA INDIA	
AIRWORTHINESS REVIEW CERTIFICATE	
ARC reference:	
Pursuant to DGCA Regulations for the time being into force, the following continuing airworthiness management organization, approved in accordance with Section A, Subpart G of CAR M.	
[NAME OF THE ORGANISATION APPROVED AND ADDRESS]	
Approval Reference:	
hereby certifies that it has performed an airworthiness review in accordance with point M.A 710 of CAR-M on the following aircraft.	
Aircraft Manufacturer:.....	
Manufacturer's designation:	
Aircraft registration:	
Aircraft Serial number :	
and this aircraft is considered airworthy at the time of this review.	
Date of issue:	Date of Expiry
Aircraft Flight Hours (FH) at date of issue -----	
Signed:	Authorisation No
1 st Extension: The Aircraft has remained in a controlled environment in accordance with point M.A 901 of CAR-M for the last year.The aircraft is considered to be airworthy at the time of the issue.	
Date of issue:	Date of Expiry
Aircraft Flight Hours (FH) at date of issue -----	
Signed:	Authorisation No
Company Name	Approval Reference
2 nd Extension: The Aircraft has remained in a controlled environment in accordance with point M.A 901 of CAR-M for the last year. The aircraft is considered to be airworthy at the time of the issue.	
Date of issue:	Date of Expiry
Signed:	Authorisation No
Aircraft Flight Hours (FH) at date of issue -----	
Company Name	Approval Reference

CA Form 15b

ISSUED BY DGCA
ISSUED BY ORGANISATION

Sample question

- 1.CAR-M specifies
- 2.Technical log book is preserved for
- 3.Privileges of Subpart-F organisation is
- 4.ARC is issued by CAMO only when
- 5.Category 1 light aircraft is
- 6.In what case DGCA will issue ARC
- 7.Documents equivalent to CA FORM 1 is
- 8.Who ensure proper accomplishment of Preflight
- 9.Validity of CAMO is
- 10.Pilot owner can certify which category aircraft

Applicable National and International Requirements

Maintenance Programme

- Maintenance Programme is a document containing the maintenance requirements/tasks that needs to be carried out on an aircraft in order to ensure its continuing airworthiness.
- The term “maintenance programme” is intended to include scheduled maintenance tasks the associated procedures and standard maintenance practices. The term “maintenance schedule” is intended to embrace the scheduled maintenance tasks alone.
- The aircraft should only be maintained to one approved maintenance programme at a given point in time.
- The aircraft maintenance programme must establish compliance with:
 - (i) instructions issued by DGCA.
 - (ii) instructions for continuing airworthiness
- The aircraft maintenance programme shall contain details, including frequency, of all maintenance to be carried out, including any specific tasks linked to the type and the specificity of operations.
- An owner or operator’s maintenance programme should normally be based upon the maintenance review board (MRB) report where applicable, the maintenance planning document (MPD), the relevant chapters of the maintenance manual or any other maintenance data containing information
- The aircraft maintenance programme shall be subject to periodic reviews maintenance Programme Compliance

Minimum Equipment List (MEL)

- A Minimum Equipment List (MEL) is one method aircraft operators may use to obtain relief from DGCA Regulations that generally require that all equipment installed on the aircraft be operative at the time of flight.
- Sub rule (5) of rule 60 of the Aircraft Rules, 1937 interalia states that no aircraft shall be released for flight with defects/ damage unless these are covered in the approved deficiency list/ Minimum Equipment List (MEL).
- MEL need not include items like wings, flight controls, complete engines, landing gears etc., the airworthiness and correct functioning of which is absolutely necessary before any flight. It may also not include items like galley equipment, entertainment systems, passenger convenience equipment, which do not affect the airworthiness of an aircraft.

MEL CATEGORY

MEL CATEGORY	RECTIFICATION INTERVAL
A	within the time interval specified in the remarks column of the MEL
B	within three (3) consecutive calendar days

C	within ten (10) consecutive calendar days
D	within one hundred and twenty (120) consecutive calendar days

time interval starts from excluding the day the malfunction was recorded in the aircraft maintenance log and/or record.

Approval

MEL shall be approved by the Regional office under intimation to the DGCA Headquarters (Attn. Airworthiness Directorate) along with a copy of approved MEL.

Note-MEL can be invoked by certifying staff authorised by the maintenance organisation/ approved pilot.(pilot shall invoke MEL in respect of those items only, which do not require maintenance actions/ procedures.)

System and Sequence No. Item.	1.	2. Number installed	3. Number required for dispatch	4. Remarks or Exceptions
29 – HYDRAULICS				
11-1 Electric Motor Driven Hydraulic Pumps (System 1 and 2)	C	2	1	(M) One may be inoperative provided: a) Affected pump is selected off and is deactivated, and b) Both Engine Driven Hydraulic Pumps are operative.
11-2 Hydraulic Accumulator Pressure Gauges Systems 1, 2, and 3)	C	3	0	(M) All may be inoperative provided accumulator pre-charge is checked using a suitable gauge before the first flight of the day.
11-3 Hydraulic Accumulators (Systems 1,2, and 3)	B	3	1	System 1 and /or System 2 accumulator(s) may be inoperative.
11-4 Engine Driven Hydraulic Pumps	C	2	1	(M) One may be inoperative provided all other hydraulic pumps are operative.
11-5 Hydraulic Heat Exchanger Cooling Fan (600 \ 601 \ 601-3A \ 601-3R)	C	1	0	May be inoperative provided ground operation of hydraulic systems 1 and 2 is limited to 30 minutes when OAT is above 45 degrees C.

Mel shall not be less restrictive than MMEL

MASTER MINIMUM EQUIPMENT LIST

In aviation, master minimum equipment list, or MMEL, is a categorized list of on-board systems, instruments and equipment that may be inoperative for flight. Specific procedures or conditions may be associated with operation of the relevant item.^[1]It is considered by default that any equipment or system related to airworthiness which is not included in the MMEL is required to be operative. The MMEL is defined on a per aircraft model basis.

Configuration deviation list

A configuration deviation list (CDL) is a list, established by the organization responsible for the type design with the approval of the State of Design, which identifies any external parts of an aircraft type which may be missing at the commencement of a flight, and which contains, where necessary, any information on associated operating limitations and performance correction. (ICAO Annex 6: Operation of Aircraft)

The CDL is usually prepared by the aircraft manufacturer and is part of the Aircraft Flight Manual (AFM).

The CDL should not be confused with the Minimum Equipment List (MEL).

The MEL shall include all the maintenance and operational procedures given by the manufacturer in Dispatch and Deviation Procedures Guide (DDPG)/ Operations procedures.

21.3B Airworthiness directives

(a) An airworthiness directive means a document issued or adopted by DGCA which mandates actions to be performed on an aircraft to restore an acceptable level of safety, when evidence shows that the safety level of this aircraft may otherwise be compromised.

(b) DGCA shall issue an airworthiness directive when:

1. an unsafe condition has been determined by DGCA to exist in an aircraft, as a result of a deficiency in the aircraft, or an engine, propeller, part or appliance installed on this aircraft; and
2. that condition is likely to exist or develop in other aircraft.

(c) When an airworthiness directive has to be issued by DGCA to correct the unsafe condition referred to in paragraph (b), or to require the performance of an inspection, the holder of the type-certificate, restricted type-certificate, supplemental type-certificate, major repair design approval, ITSO authorization or any other relevant approval deemed to have been issued under this Regulation, shall:

1. Propose the appropriate corrective action or required inspections, or both, and submit details of these proposals to DGCA for approval.
2. Following the approval by DGCA of the proposals referred to under subparagraph (1), make available to all known operators or owners of the product, part or appliance and, on request, to any person required to comply with the airworthiness directive, appropriate descriptive data and accomplishment instructions.

(d) An airworthiness directive shall contain at least the following information:

1. An identification of the unsafe condition;
2. An identification of the affected aircraft;
3. The action(s) required;
4. The compliance time for the required action(s);
5. The date of entry into force.



DIRECTORATE GENERAL OF CIVIL AVIATION

AIRWORTHINESS DIRECTIVE

AIRWORTHINESS DIRECTIVE No.: 034

Issued / Date:17-10-2016

No person may operate an aircraft to which an Airworthiness Directive applies, except in accordance with the requirements of that Airworthiness Directive unless otherwise agreed with the Authority of the State of Registry.

Type Approval Holder's Name: Rotary Wing Research and Design Centre (RWR&DC), Hindustan Aeronautics Limited, Bangalore.	Type/Model designation(s): All civil variant Advanced Light Helicopters (Dhruv)
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Type Certificate Data Sheet Numbers	5-8/96 – RD
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Foreign AD Number	Not applicable
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Supersedure	AD No. 014R1 dated 16-02-2010
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ATA Chapter Name: 62 – Main Rotor	Name of the affected part / system: Main Rotor Blade	Required action: Ultrasonic (A-Scan) inspection of Main Rotor Blade for civil variant Advanced Light Helicopters (Dhruv)
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Manufacturer	Helicopter Division, Hindustan Aeronautics Limited, Bangalore
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Applicability	<table border="1"><thead><tr><th>Model number</th><th>Serial Number</th></tr></thead><tbody><tr><td>Dhruv (C)</td><td>PTC2</td></tr><tr><td>Dhruv (CFW)</td><td>DW 28, DW 77, DW78, DCWF 01 to 04, DCWF 06 and DCWF 07</td></tr><tr><td>Dhruv (CS)</td><td>DS 35, DS 51, and DS 65</td></tr></tbody></table>	Model number	Serial Number	Dhruv (C)	PTC2	Dhruv (CFW)	DW 28, DW 77, DW78, DCWF 01 to 04, DCWF 06 and DCWF 07	Dhruv (CS)	DS 35, DS 51, and DS 65
Model number	Serial Number								
Dhruv (C)	PTC2								
Dhruv (CFW)	DW 28, DW 77, DW78, DCWF 01 to 04, DCWF 06 and DCWF 07								
Dhruv (CS)	DS 35, DS 51, and DS 65								

Reason	<ol style="list-style-type: none">1. During 500 hours of inspection, change in CT density was observed on collar region of some of main rotor blades of Dhruv helicopter.2. This indicates onset of local delamination. <p>Since an unsafe condition has been identified which is likely to exist on other ALH of same type design, Airworthiness Directive AD 014R1 dated 16.02.2010 is revised and this AD is issued to include:</p>
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	<p>i. The enhancement of periodicities of inspection on main rotor blade and</p> <p>ii. Inspection using A-scan equipments Omniscan MX, Omniscan SX, Epoch 600 in addition to USM25, USD 15S and Epoch XT, also additional A-scan equipment parameters as given in Table-1 of the Alert Service Bulletin No. 201 621 A310 Rev C dated 02.03.2016.</p> <p>The compliance certificate of the subject service bulletin shall be submitted to the Airworthiness Group of RWR&DC, HAL, Bangalore through the Customer Services Department of Helicopter Division, HAL, Bangalore.</p>
Effective Date	Forthwith.
Compliance	<p>For all civil ALH in operation:</p> <p>To carry out the ultrasonic (A-Scan) inspection of main rotor blade as per Alert Service Bulletins No. 201 621 A310, Rev. C dated 02.03.2016, within 50 flight hours or 30 days from the date of issue of this AD, whichever is earlier.</p>
Ref. Publications	HAL Alert Service Bulletin No. 201 621 A310 Rev C dated 02.03.2016.
Remarks	<p>1. If requested and appropriately substantiated, Joint Director General, in charge of Aircraft Engineering Directorate, DGCA, New Delhi may accept Alternative Methods of Compliance (AMOCs) for this AD.</p> <p>2. Enquiries regarding this AD should be addressed to Joint Director General, in-charge of Aircraft Engineering Directorate, Office of the DGCA, Opposite Safdarjung Airport, New Delhi-110003.e-mail : lalit dgca@nic.in</p> <p>3. For any questions concerning the technical content of the requirements in this AD or above referred SB, please contact the Customer Care Department, ALH-Civil, Helicopter Division, HAL, Post: Vimanapura , Bangalore-560017, India.</p> <p>Telephone Number : +91-080-2232 3351, Fax: +91-080-2531 4717 e-mail: csdcivilalh hcop@hal-india.com</p>

This AD, which prescribes/mandates action to be performed on the helicopters as stated above to restore an acceptable level of safety, is hereby issued pursuant to CAR 21.3B. TC holder/ operators are required to comply with the above stated AD within the stipulated time.



(Lalit Gupta)
Joint Director General
For Director General of Civil Aviation

AD'S NO.35

Service Bulletin

A Service Bulletin is the document used by manufacturers of aircraft, their engines or their components to communicate details of modifications which can be embodied in aircraft. In some cases, these may be issued as a Mandatory SB (or MSB) in which case a corresponding Airworthiness Directive (AD) will be issued by the appropriate NAA.

PRATT & WHITNEY CANADA
ALERT SERVICE BULLETIN

P&WC S.B. No. A60059

BULLETIN INDEX LOCATOR
73-10-01

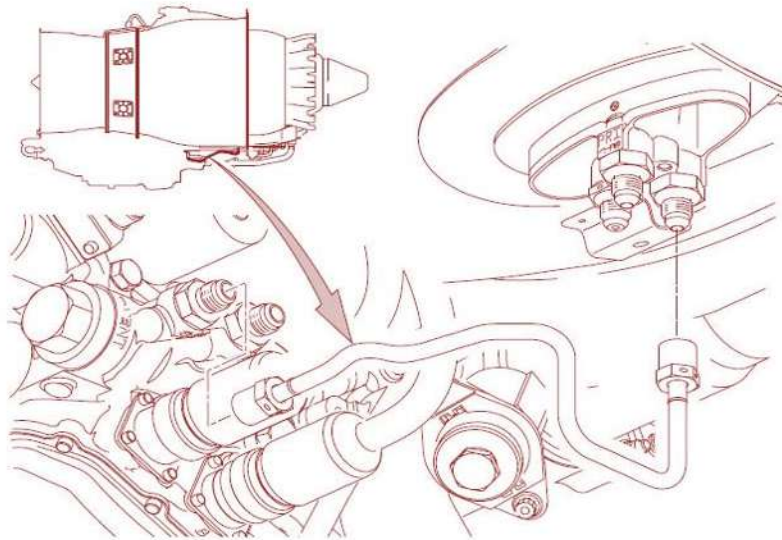
TURBOFAN ENGINE
FMU-TO-MANIFOLD SECONDARY FUEL TUBE - REPLACEMENT OF

MODEL APPLICATION
PW610F-A

Commercial Support Program No: 1004410

Compliance: CATEGORY 3

Summary: The FMU-to-manifold secondary fuel tube may crack and leak. This service bulletin is introduced to replace the FMU-to-manifold secondary fuel tube on engines which have accumulated less than 200 hours on the tube.



Apr 03/2009

PW600-72-A60059
Cover Sheet

24-Hour Global Service
CFIRST CENTRE
Toll free where available (SL GEN-027)

USA & CANADA..... 1-800-268-8000
International..... (IAC)+800-268-8000
* International Access Code

Other..... 1-450-647-8000
Fax..... 1-450-647-2888
Web Site..... www.pwc.ca

Maintenance documentation:

AMM

The formal document which details the way in which all maintenance tasks carried out on an aircraft shall be accomplished. This includes items such as lubrication system functional checks and servicing of the airplane but usually excludes structural repairs and modifications.

SRM

The procedures for making good minor structural damage sustained by an aircraft. If appropriate procedures for the damage found are not contained in the SRM then a specific Repair Scheme needs to be obtained from the aircraft manufacturer.

IPC

A key ancillary reference document specific to aircraft type which describes in comprehensive detail every component. It is an essential supplement for users of the AMM but does not have the equivalent approved status

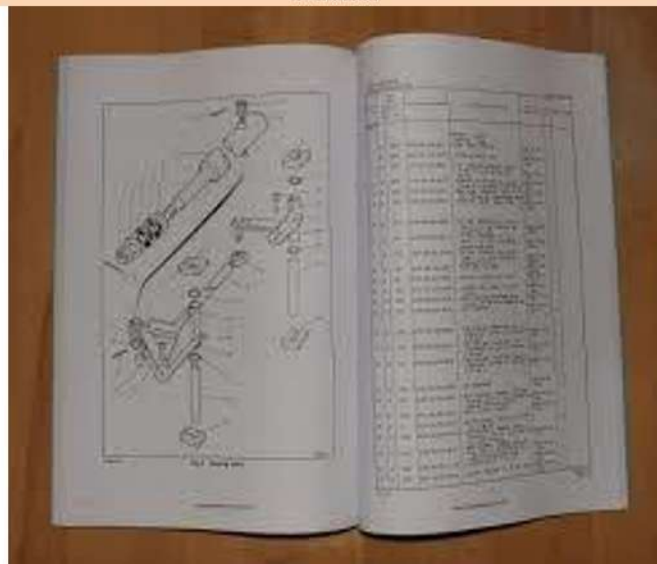
and must be used only as supporting reference with the AMM as authoritative reference in case of any differences.

CMM

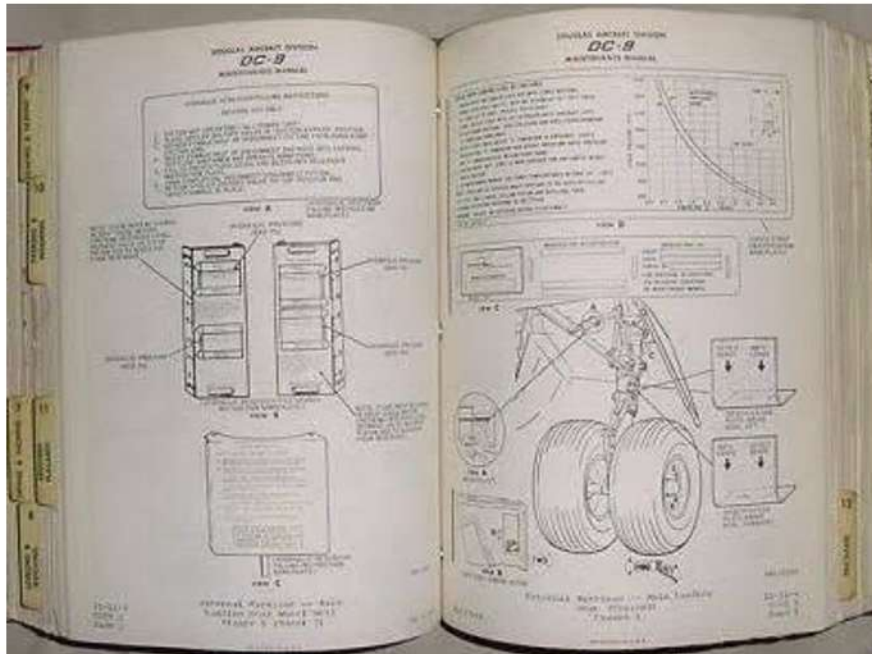
A formal document which details the way in which off-aircraft maintenance tasks on the specified component shall be accomplished. The maintenance tasks contained in these manuals do include procedures for restoring a structural component to a serviceable state and re-working and refinishing procedures are often provided in any appropriate CMM.



AMM



IPC



AMM

(b) Continuing Airworthiness

‘Continuing airworthiness’ means all of the processes ensuring that, at any time in its operating life, the aircraft complies with the airworthiness standard and is in a condition for safe operation;

Continuing Airworthiness Requirements

- The continuing airworthiness of aircraft and components shall be ensured in accordance with the provisions of CAR M.
- Organisations and personnel involved in the continuing airworthiness of aircraft and components, including maintenance, shall comply with the provisions of CAR-M, CAR145 and CAR Sec -2 Series L or CAR 66 as appropriate. the tasks associated with continuing airworthiness are performed by an approved continuing airworthiness management organisation.

Continuing Airworthiness Tasks

The aircraft continuing airworthiness and the serviceability of both operational and emergency equipment shall be ensured by:

- the accomplishment of pre-flight inspections;
- the rectification in accordance with the data specified in point M.A.304 and/or point M.A. 401, as applicable, of any defect and damage affecting safe operation taking into account, the minimum equipment list and configuration deviation list when applicable;
- the accomplishment of all maintenance, in accordance with the M.A.302 aircraft maintenance programme;
- for all complex motor-powered aircraft or aircraft used by air operator certified in accordance with Schedule XI of Aircraft rule 1937 the analysis of the effectiveness of the M.A.302 approved maintenance programme;
- the accomplishment of any applicable:
 1. airworthiness directive,
 2. operational directive with a continuing airworthiness impact,
 3. continued airworthiness requirement established by DGCA,
 4. measures mandated by DGCA in immediate reaction to a safety problem;
- the accomplishment of modifications and repairs in accordance with M.A.304;
- for non-mandatory modifications and/or inspections, for all complex motor powered aircraft or aircraft used by air operator certified in accordance with Schedule XI of Aircraft rule 1937 the establishment of an embodiment policy;

- Maintenance check flights when necessary.

Continuing airworthiness records

The aircraft continuing airworthiness records shall consist of:

- an aircraft logbook, engine logbook(s) or engine module log cards, propeller logbook(s) and log cards for any service life limited component as appropriate, and,
- operator's technical log.

CAMO

Subpart-G establishes the requirements to be met by an organisation to qualify for the issue or continuation of an approval for the management of aircraft continuing airworthiness.

Continuing Airworthiness Management

1. All continuing airworthiness management shall be carried out according to the prescriptions of M.A Subpart C.
2. For every aircraft managed, the approved continuing airworthiness management organisation shall:
 - develop and control a maintenance programme for the aircraft managed including any applicable reliability programme,
 - Present the aircraft maintenance programme and its amendments to DGCA for approval, unless covered by an indirect approval procedure in accordance with point M.A.302(c), and for aircraft not used by air operator certified in accordance with Schedule XI of aircraft rule 1937 provide a copy of the programme to the owner /operator responsible in accordance with M.A.201.
 - manage the approval of modification and repairs,
 - ensure that all maintenance is carried out in accordance with the approved maintenance programme and released in accordance with M.A. Subpart H, of CAR-M.
 - ensure that all applicable airworthiness directives and operational directives with a continuing airworthiness impact, are applied,
 - ensure that all defects discovered during scheduled maintenance or reported are corrected by an appropriately approved maintenance organisation,
 - ensure that the aircraft is taken to an appropriately approved maintenance organisation whenever necessary,
 - coordinate scheduled maintenance, the application of airworthiness directives, the replacement of service life limited parts, and component inspection to ensure the work is carried out properly,
 - manage and archive all continuing airworthiness records and/or operator's technical log.
 - ensure that the mass and balance statement reflects the current status of the aircraft.
 - Ensure the compliance of all applicable Airworthiness requirements covered in CAR Section -2 and other sections of CAR related to continuing Airworthiness.

Test flights

"Flight Test" means the flying of an aircraft, without any passenger on board, for the purpose of ensuring that: - (i) the aircraft handling characteristics have not deteriorated with time; (ii) the aircraft performance remains as scheduled; and (iii) aircraft and its equipment function properly.

CONDITION FOR FLIGHT TESTING

- At the time of issue of Airworthiness Review Certificate (ARC) of aircraft.
- Subsequent to maintenance, repair, or modification which affect operational or flight characteristics of the aircraft.
- For the purpose of evaluation in respect of fuel consumption engine power and performance of radio/ radar/ navigational equipment or instruments whenever these are doubted and cannot be satisfactorily checked on ground.

- Subsequent to change of engine.
 1. On a twin engine aircraft a test flight after an engine change may not be carried out provided satisfactory engine ground testing procedure subsequent to an engine change and acceptable to Director General of Civil Aviation is evolved prior to availing of this relaxation. However, if two engines are changed a test flight is necessary.
 2. On three engine aircraft, after a single engine change a test flight may not be carried out provided satisfactory engine ground testing procedure subsequent to an engine change and acceptable to Director General of Civil Aviation is evolved prior to availing of this relaxation. However more than one engine change will require a Test Flight.
 3. On a four engine aircraft, after one or two engine changes, a test flight may not be carried out provided satisfactory engine ground testing procedure subsequent to engine change and acceptable to Director General of Civil Aviation is evolved prior to availing of this relaxation. However if more than two engines are changed, a test flight is necessary
- To satisfactorily determine the cause of a defect so as to assess the maintenance required to rectify the defect.

CERTIFICATION BEFORE FLIGHT TEST

- before the test flight, a certificate, to the effect that the aircraft is fit for the flight, CRS shall be issued in duplicate on a proforma, by an authorized certifying staff who is permitted to issue Certificate of Release to Service.
- One copy shall be delivered to the pilot test flying the aircraft and the other copy shall be retained by the operator.
- The certifying staff who signs the pre test flight certification documents shall also ensure that the document shows the purpose of test flight and the information required to be observed/ recorded during the test flight by the flight crew.

FLIGHT TEST REPORT

- A flight test report appropriate to the flight test performed shall be completed by the pilot- in-command or by any other flight crewmember of the aircraft, authorised by the operator.
- The pilot-in-command shall be responsible for recording the result of the test flight and for making such comments in writing as considered necessary for a further test flight.

CERTIFICATION AFTER FLIGHT TEST

- When a satisfactory flight test has been performed and subsequent defects, if any, are rectified and certified an endorsement to this effect shall be made in the Pilot's Defect Report/ Maintenance documents/ aircraft log book by certifying staff responsible for issuing Certificate of Release to Service (CRS) as per CAR 145 / CAR M.

FLIGHT CREW REQUIREMENTS

For the purpose of flight tests, the number of flight crew to be carried on board shall be as specified in the flight manual.

The flight crew requirements for the purpose of flight test shall be as follows:

1 PASSENGER AND AERIAL WORK AIRCRAFT

The pilot carrying out the flight test shall be in possession of

1.1 FOR SINGLE ENGINED AIRCRAFT

- (i) a valid Commercial Pilot's Licence Airline Transport Pilot Licence endorsed for the type of aircraft; with
- (ii) at least 500 hours total flying time as Pilot-in-Command (PIC) which shall include :
 - (a) at least 100 hours as PIC on type; of which
 - (b) at least 10 hours shall be as PIC on type or similar aircraft types within a period of six months immediately preceding the date of flight test.

1.2 FOR TWIN ENGINED AIRCRAFT

- (i) a valid Commercial Pilot's Licence Airline Transport Pilot Licence endorsed for the type of aircraft; with
- (ii) at least 1000 hours total flying time which shall include :
 - (a) atleast 500 hours flying time as PIC on twin engined aircraft; of which
 - (b) at least 100 hours shall be as PIC on type; and
 - (c) atleast 10 hours as PIC on type or similar aircraft types within a period of six months immediately preceding the date of flight test.

2 PRIVATE CATEGORY AIRCRAFT

The pilot carrying out flight test of aircraft fitted with Piston engine with Maximum Take-off Weight (MTOW) not exceeding 3000 kgs. and categorised as private aircraft in the C of A, shall be in possession of:-

- (a) atleast a valid Private Pilot's licence (PPL) endorsed for the type of aircraft; with
- (b) at least 500 hours total flying experience which shall include:-
 - (i) atleast 200 hours as PIC, of which
 - (ii) at least 100 hours shall be on type; and
 - (iii) atleast 10 hours as PIC on type or similar aircraft types within a period of six months immediately preceding the date of flight test.

Test flight of aircraft other than piston engined aircraft having maximum take-off weight exceeding 3000 kgs shall be carried out as per the para 1.

3 Gliders

Test flight of gliders including powered gliders shall be conducted by Glider Pilot licence (GPL) holders with current Flight Instructor Rating on the relevant type.

Any other suitable pilot may be permitted to carry out test flights with the prior approval of DGCA.

SUBMISSION OF CERTIFICATE AT THE TIME OF ISSUE OF AIRWORTHINESS REVIEW CERTIFICATE.

The Chief Instructor / Continuing Airworthiness Manager of an approved organisation shall submit a certificate to the Regional Airworthiness Office at the time of issue of ARC of the aircraft.



Extended diversion time operations

Extended diversion time operations (EDTO) Any operation by an aeroplane with two or more turbine engines where the diversion time to an en-route alternate aerodrome is greater than the threshold time established by the State of the Operator.

Approval for EDTO

- After satisfactory demonstration with the CAR requirements, Contents of EDTO Manual, Aircraft eligibility etc. the request of operator along with approved manual and a copy of completed checklist shall be forwarded by the Regional office to the DGCA, Hqrs (Airworthiness Directorate) for further action.
- Initial Operations Approval for EDTO shall be issued by the 12 DGCA Hqrs. indicating Airframe engine combination and tail no of aircraft, after satisfactory scrutiny both by Airworthiness offices.
- Approval for additional aircraft shall be granted by regional office. Procedure to be followed by Airworthiness Office for processing the request of operator is described in chapter 24 B of Airworthiness procedure manual.

ENGINE CONDITION MONITORING PROGRAMME

- The engine condition monitoring programme should ensure that a one engine-inoperative diversion may be conducted without exceeding approved engine limits (e.g. rotor speeds, exhaust gas temperature) at all approved power levels and expected environmental conditions. Engine limits established in the monitoring programme should account for the effects of additional engine loading demands (e.g. anti-icing, electrical, etc.), which may be required during the one-engine-inoperative flight phase associated with the diversion.
- The engine condition monitoring programme should describe the parameters to be monitored, method of data collection and corrective action process. The programme should reflect manufacturer's instructions and industry practice. This monitoring will be used to detect deterioration at an early stage to allow for corrective action before safe operation of the aircraft is affected. 4.9 Aircraft Performance Monitoring:
- The continued airworthiness Program mentioned should cover Aircraft Performance Monitoring to assess any degradation in the aircraft performance. This monitoring programme should form part of EDTO manual

VERIFICATION PROGRAMME

- The operator should develop a verification programme to ensure that the corrective action required to be accomplished following an engine shutdown, any EDTO significant system failure or adverse trends or any event which require a verification flight or other verification action are established.
- A clear description of who must initiate verification actions and the section or group responsible for the determination of what action is necessary should be identified in this verification programme. EDTO significant systems or conditions requiring verification actions should be described in the EDTO Manual / Continuing Airworthiness Management Exposition (CAME). The CAMO may request the support of (S)TC holder to identify when these actions are necessary. Nevertheless the CAMO may propose alternative operational procedures to ensure system integrity. This may be based on system monitoring in the period of flight prior to entering an EDTO area.
- The operator must have ground and in-flight verification flight procedures described in their supplemental maintenance program for events involving propulsion system shutdown, engine or major engine module change, primary system failure, and for certain adverse trends or prescribed events.
 - a. Written procedures exist to ensure that the flight crew receives a full briefing prior to dispatch concerning the event and/or the maintenance performed.
 - b. Appropriate maintenance personnel should convey to the flight crew the specific observations and/or actions required of them during the verification portion of the flight, as well as the method used to properly record the satisfactory completion of that verification flight. • All flight crew observations and/or actions must be complete prior to entering the EDTO portion of the flight.
 - c. Documentation of pass/fail. Communications with the dispatch or flight following center and maintenance control, and an appropriate logbook entry must be completed in accordance with the certificate holder's EDTO maintenance document

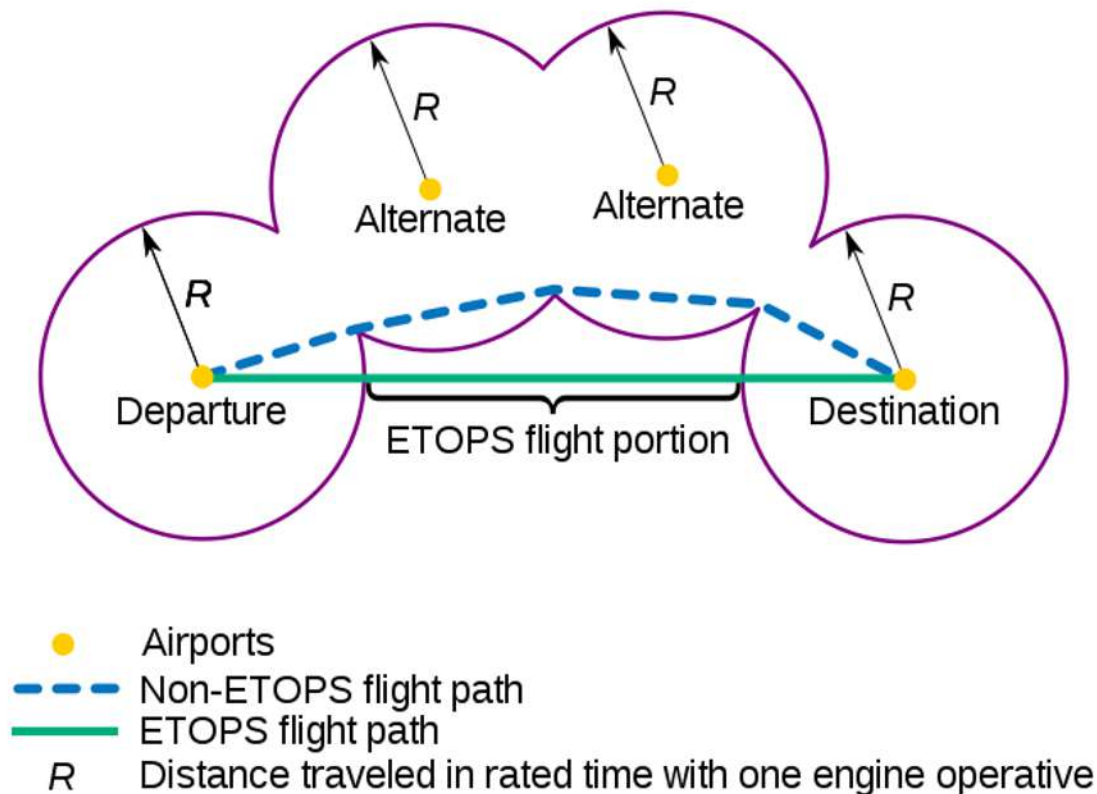
COMPETENCE OF CONTINUING AIRWORTHINESS AND MAINTENANCE PERSONNEL

- The CAMO organisation should ensure that the personnel involved in the continuing airworthiness management of the aircraft have knowledge of the EDTO procedures of the operator.
- The CAMO should ensure that maintenance personnel that are involved in EDTO maintenance tasks:
 - a) Have completed an EDTO training programme reflecting the relevant EDTO procedures of the operator, and,
 - b) Have satisfactorily performed EDTO tasks under supervision, within the framework of the CAR-145 approved procedures for Personnel Authorisation.

EDTO MAINTENANCE PROGRAMME

- The maintenance programme should contain the standards, guidance and directions necessary to support the intended operations. Maintenance personnel involved, including maintenance sub-contractors' personnel, should be made aware of the special nature of extended diversion time operation (EDTO) and have the qualifications, authorisation, knowledge, skill and ability to accomplish the requirements of the programme.
- The quality of maintenance and reliability programmes can have an appreciable effect on the reliability of the propulsion system and the EDTO Significant Systems.
- The proposed maintenance and reliability programme's ability to maintain an acceptable level of safety for the propulsion system and the EDTO Significant Systems of the particular airframe/engine combination. is assessed and approved by DGCA The maintenance programme should also include tasks to maintain the integrity of cargo compartment and pressurisation features, including baggage hold liners, door seals and drain valve condition. Processes should be implemented to monitor the effectiveness of the maintenance programme in this regard

Any changes to the maintenance and training procedures, practices or limitations established in the qualification for EDTO must be submitted to the DGCA for approval .





the Boeing 787 Dreamliner received its ETOPS-330 certificate from the FAA.



EASA certified the Airbus A350XWB to ETOPS-370.

RVSM

A program was initiated by ICAO in 1982 involving worldwide studies to assess the feasibility of a reduction of the Vertical Separation Minima (VSM) above FL290 from 2,000 feet to 1,000 feet.

The principal benefits which the implementation of the reduced VSM were expected to provide were:

- A theoretical doubling of the airspace capacity, between FL290 and FL410; and
- The opportunity for aircraft to operate at closer to the optimum flight levels with the resulting fuel economies

PROCEDURES PRIOR TO RVSM AIRSPACE ENTRY

The following equipment shall be operating normally at entry into RVSM airspace:

- Two primary altitude measurement system.
- One automatic altitude-control system.
- One altitude-alerting device.

Note: Dual equipment requirements for attitude-control systems will be established by regional agreement after an evaluation of criteria such as mean time between failures, length of flight segments and availability of direct pilot-controller communications and radar surveillance.

- Operating Transponder. An operating transponder may not be required for entry into all designated RVSM airspace. The operator shall determine the requirement for an operational transponder in each RVSM area where operations are intended. The operator shall also determine the transponder requirements for transition areas next to RVSM airspace.

Note: Should any of the required equipment fail prior to the aircraft entering RVSM airspace, the pilot shall request a new clearance to avoid entering this airspace;

PRE-FLIGHT PROCEDURES AT THE AIRCRAFT FOR EACH FLIGHT

The following actions shall be accomplished during the pre-flight procedure

- Review technical logs and forms to determine the condition of equipment required for flight in the RVSM airspace. Ensure that maintenance action has been taken to correct defects to required equipment;
- During the external inspection of aircraft, particular attention shall be paid to the condition of static sources and the condition of the fuselage skin near each static source and any other component that affects altimetry system accuracy. This check shall be accomplished by a qualified and authorized person other than the pilot (e.g. a flight engineer or ground engineer);
- Before takeoff, the aircraft altimeters shall be set to the QNH of the airfield and shall display a known altitude, within the limits specified in the aircraft operating manuals. The two primary altimeters shall also agree within limits specified by the aircraft operating manual. An alternative procedure using QFE may also be used. Any required functioning checks of altitude indicating systems shall be performed.
- Before take-off, equipment required for flight in RVSM airspace shall be operative, and any indications of malfunction shall be resolved.

Maintenance Training

Additional training may be necessary to support RVSM approval.

Areas needed to be highlighted for initial and recurrent training of relevant personnel are:

- a) Aircraft geometric inspection technique.
- b) Test equipment calibration and use of that equipment.
- c) Any special instruction or procedures introduced for RVSM approval.

Test Equipment

a) Test equipment should have the capability to demonstrate continuing compliance with all the parameters established in the data package for RVSM approval.

b) Test equipment should be calibrated using reference standards at periodic intervals acceptable to DGCA. The approved maintenance program shall include an effective quality control program with the attention to the following:

- Definition of required test equipment accuracy.
- Regular calibrations of test equipment traceable to a master standard. Determination of the calibration interval should be a function of the stability of the test equipment. The calibration interval should be established using historical data so that the degradation is small in relation to the required accuracy. (iii)

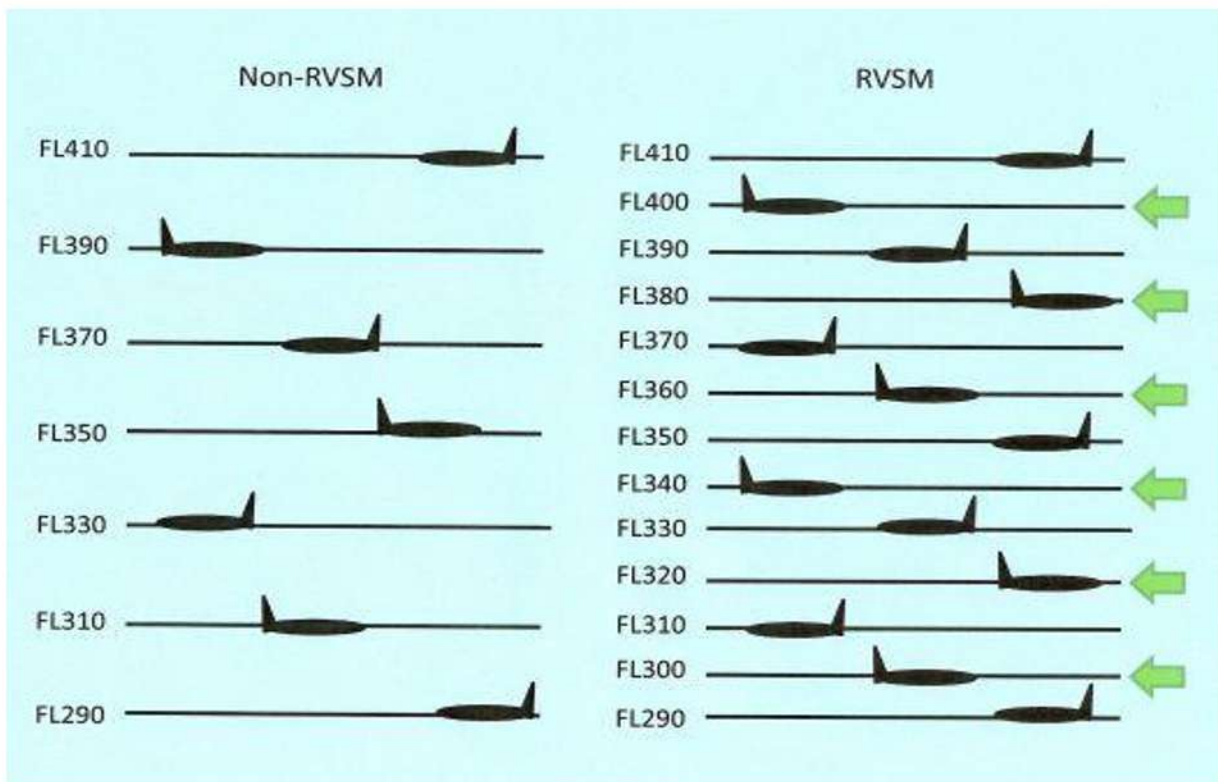
- Regular audits of calibration facilities both in-house and outside.
- Adherence to approved maintenance practices.
- Procedures for controlling operator errors and unusual environmental conditions which may affect calibration accuracy.

Maintenance Programs Each operator requesting RVSM operational approval shall establish RVSM maintenance and inspection practices acceptable to DGCA that shall include any required maintenance specified in the data package. These practices shall be included in the operator's approved maintenance programme.

Maintenance Documents

The following manuals/documents shall be reviewed, as appropriate:

- Maintenance Manuals.
- Structural Repair Manuals.
- Standard Practices Manuals.
- Illustrated Parts Catalogues.
- Maintenance Schedule
- M MEL/MEL



RNP OC NO 14 OF 2014

Required navigation performance (RNP) is a type of performance-based navigation (PBN) that allows an aircraft to fly a specific path between two 3D-defined points in space

AIRWORTHINESS AND OPERATIONAL APPROVAL

For a commercial air transport operator to be granted a RNP 2 approval, it must comply with two types of approvals:

- the airworthiness approval, issued by the State of registry; and
- the operational approval, issued by the State of the operator.

For general aviation operators, the State of registry will determine whether or not the aircraft meets the

applicable RNP 2 requirements and will issue the operational approval (e.g., letter of authorisation – LOA).

Before filing the application, operators shall review all aircraft qualification requirements. Compliance with airworthiness requirements or equipment installation alone does not constitute operational approval.

MINIMUM NAVIGATION PERFORMANCE SPECIFICATION (MNPS)

- MNPS airspace has been established between FL285 and FL420. To ensure the safe application of separation between aircraft in the airspace, only MNPS approved aircraft are permitted to operate within the MNPS airspace

All Weather Operations

- All Weather Operations (AWOPS) approvals allow aircraft to make low visibility take-offs and landings.

The Air Navigation Order states that an aircraft "must not conduct a Category II, Category IIIA or Category IIIB approach and landing; or take off when the relevant runway visual range is less than 150 metres" unless approval to do so has been issued.

- Category II
- Category IIIA
- Category IIIB
- AWOPS approval will be granted only to aircraft holding the appropriate equipment and applying additional training, procedures and maintenance

CATEGORY LANDING

Category of Operation	Decision Height (DH) (2)	RVR	Visibility not less than
CAT I	not lower than 60 m (200 ft)	not less than 550 m	800m
CAT II	lower than 60 m (200 ft), but not lower than 30 m (100 ft)	not less than 350 m (1)	
CAT IIIA	lower than 30 m (100 ft) or no DH	not less than 200 m	
CAT IIIB	lower than 15 m (50 ft) or no DH	less than 200 m but not less than 50 m	
CAT IIIC	no DH	no RVR limitation	

Acti



CAT IIIA Landing



CAT II Landing

SAFETY MANAGEMENT SYSTEM

- A safety management system (SMS) is a systematic approach to managing safety, including the necessary organisational structures, accountabilities, policies and procedures

State safety programme

- An integrated set of regulations and activities aimed at improving safety.

SAFETY RISK MANAGEMENT

- Hazard Identification

The service provider shall develop and maintain a process to identify hazards associated with its products or services.

Hazard identification shall be based on a combination of reactive and proactive methods. The process may also include predictive methods of safety data analysis.

- Safety Risk Assessment and Mitigation

The service provider shall develop and maintain a process that ensures analysis, assessment and control of the safety risks associated with identified hazards.

The methodology for assessing risk shall include the following:

- i) establishment of acceptable level of risk, according to the ‘as low as reasonably practical’ (ALARP) principle
- ii) assessment of risk taking into account the severity of safety outcome and probability of occurrence
- iii) assessment of the tolerability of the risk
- iv) determination as to whether the risk can be tolerated, eliminated, or mitigated to a tolerable level
- v) assessment of residual risks and any new risks introduced as a result of mitigation measures.

The organizations shall adopt a methodology suited to the scope and complexity of their activities and adaptable to their individual resources and expertise.

Objective

The objective of a Safety Management System is to provide a structured management approach to control safety risks in operations. Effective safety management must take into account the organisation’s specific structures and processes related to safety of operations.

Safety performance

- A State’s or service provider’s safety achievement as defined by its safety performance targets and safety performance indicators.

SAFETY ASSURANCE

Safety Performance Monitoring and Measurement

- The service provider shall develop and maintain the means to verify the safety performance of the service provider and to validate the effectiveness of safety risk controls.
- The service provider’s safety performance shall be verified with reference to the safety performance indicators and safety performance targets of the SMS in support of the service provider’s safety objectives.
- The development of targets and indicators shall be based upon variety of data. Such data shall include, but not limited to, the data used for hazard identification complemented by safety studies, surveys, audits and investigations.

PHASE-WISE IMPLEMENTATION OF SMS

Timelines for Implementation	At the time of Application for AOP (Phase 1)	At the time of Application for AOP (Phase 2)	+ 18 Months (Phase 3)	+ 18 Months (Phase 4)
To demonstrate	<ul style="list-style-type: none"> a) Identify SMS accountable executive. b) Establish SMS implementation team. c) Define scope of the SMS. d) Perform SMS gap analysis. e) Develop SMS implementation plan. f) Establish key person/office responsible for the administration and maintenance of the SMS. g) Establish SMS training program for personnel, with priority for the SMS implementation team. h) Initiate SMS/safety communication channels. 	<ul style="list-style-type: none"> a) Establish safety policy and objectives. b) Define safety management responsibilities and accountabilities across relevant departments of the organization. c) Establish SMS/safety coordination mechanism/committee. d) Establish departmental/divisional SAGs where applicable. e) Establish emergency response plan. f) Initiate progressive development of SMS document/manual and other supporting documentation. 	<ul style="list-style-type: none"> a) Establish voluntary hazard reporting procedure. b) Establish safety risk management procedures. c) Establish occurrence reporting and investigation procedures. d) Establish safety data collection and processing system for high-consequence outcomes. e) Develop high-consequence SPIs and associated targets and alert settings. f) Establish management of change procedure that includes safety risk assessment. g) Establish internal quality audit program. h) Establish external quality audit program. 	<ul style="list-style-type: none"> a) Enhance existing disciplinary procedure/policy with due consideration of unintentional errors or mistakes from deliberate or gross violations. b) Integrate hazards identified from occurrence investigation reports with the voluntary hazard reporting system. c) Integrate hazard identification and risk management procedures with the sub-contractor's or customer's SMS where applicable. d) Enhance safety data collection and processing system to include lower-consequence events. e) Develop lower-consequence SPIs and associated targets/alert settings. f) Establish SMS audit programs or integrate them into existing internal and external audit programs. g) Establish other operational SMS review/ survey programs where appropriate. h) Ensure that SMS training program for all relevant personnel has been completed. i) Promote safety information sharing and exchange internally and externally.

Fuel Tank Safety

Since the 1960's, there have been key accidents involving fuel tank explosions which we now believe call into question this fundamental safety strategy applied to fuel systems of large commercial airplanes



707 Elkton MD (Pan Am Flight 214) left wing exploded



737 Manila (Philippine Airlines) While pushing back from gate, empty centre fuel tank exploded

Since 1996, the FAA has issued more than 100 Airworthiness Directives (ADs) and a Special Federal Aviation Regulation (known as SFAR 88) to eliminate ignition sources. FAA engineers and scientists also made a major breakthrough for commercial aviation safety by developing the first practical 'fuel tank inerting' system for reducing the flammability of center wing fuel tanks on commercial airplanes

Eliminate Ignition Sources

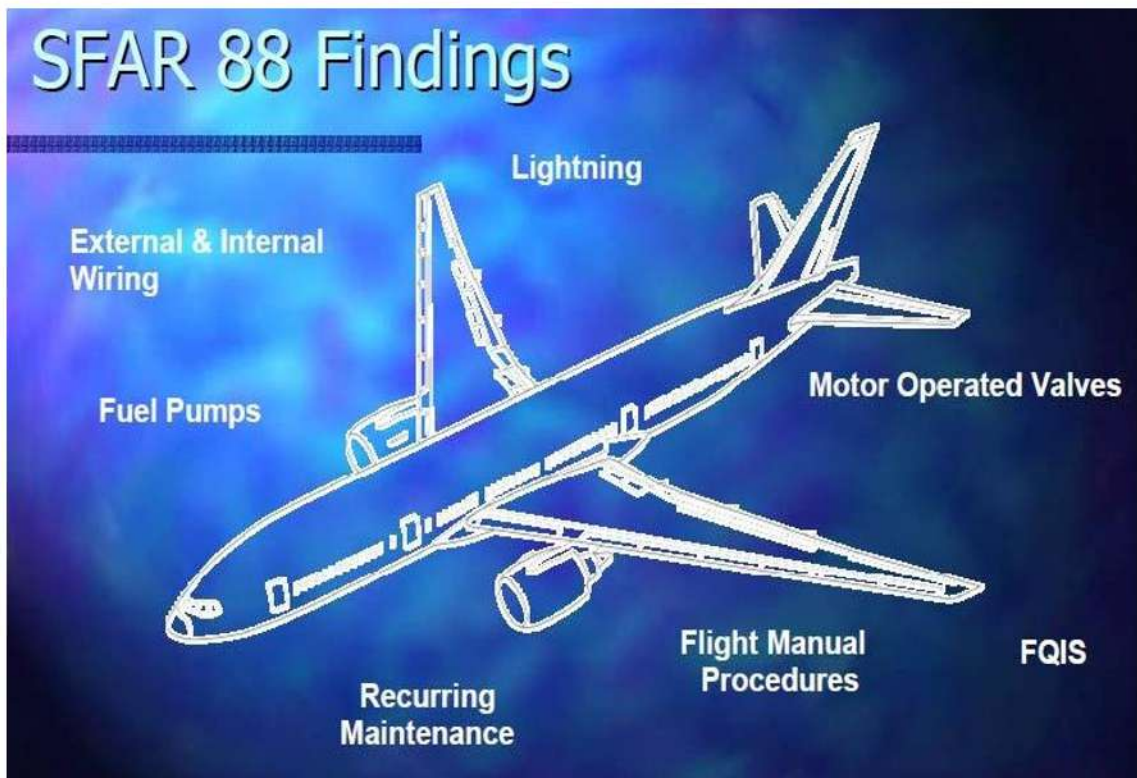
- The aviation community has focused on precluding ignition sources to prevent fuel tank explosions
- Since 1996, more than 100 directives have addressed issues such as pump manufacturing discrepancies, wire chafing, protection of the Fuel Quantity Indication System (FQIS), and overheating solenoids
- On May 7, 2001 the FAA issued a far-reaching safety rule called 'SFAR 88' to minimize ignition sources in fuel tanks. SFAR 88 changed the way airplanes are designed, operated and maintained. By December 6, 2002, manufacturers completed reviews of each airplane model and identified potential ignition

sources. This effort resulted in the identification of more than 200 previously unknown ignition sources.

- While the work accomplished by the industry to comply with SFAR 88 has certainly improved safety, the FAA believes that the added safety net of reducing the flammability of the tank is also necessary. For example, the FAA has issued two ADs for ignition sources discovered after the SFAR 88 reviews. These failure modes were not identified during the SFAR 88 reviews

SFAR 88

- This rule requires design approval holders of certain turbine powered transport category airplanes, and of any subsequent modifications to these airplanes, to substantiate that the design of the fuel tank system precludes the existence of ignition sources within the airplane fuel tanks. It also requires developing and implementing maintenance and inspection instructions to assure the safety of the fuel tank system. For new type designs, this rule also requires demonstrating that ignition sources cannot be present in fuel tanks when failure conditions are considered, identifying any safety-critical maintenance actions, and incorporating a means either to minimize development of flammable vapours in fuel tanks or to prevent catastrophic damage if ignition does occur.



TGL 47

- An important concept of this policy is the introduction of Critical Design Control Configuration Limitations (CDCCL). As applied to fuel tank safety policy, this term refers to a feature of the fuel system design.
- The purpose of JAA Temporary Guidance Leaflet (TGL) No. 47 of 1 July 2003 was to notify Certificate holders, Operators and their Maintenance Organisations of the current policy and associated actions necessary to implement the corrective actions such as modifications, configuration critical items, improved maintenance practices and training of fuel system installation
- This policy had been harmonised with the policies of FAA,

CDCCL

- Critical Design Configuration Control Limitations identify the critical design features such as proper wire separation, proper installation of a panel gasket, minimum bonding jumper resistance levels, etc., that must be maintained in exactly the same manner throughout the life of the aircraft in order to comply with the type certificate and maintain airworthiness.

- The purpose of the Critical Design Configuration Control Limitation (CDCCL) is to provide instructions to ensure these critical features are present throughout the life of the airplane and are Inspected and verified when alterations, repairs, or maintenance actions occur in the area.
- This includes:
 - A conception part intended to aircraft design features,
 - A maintenance part

DGCA REGULATION

CAR 145 Issue 02.

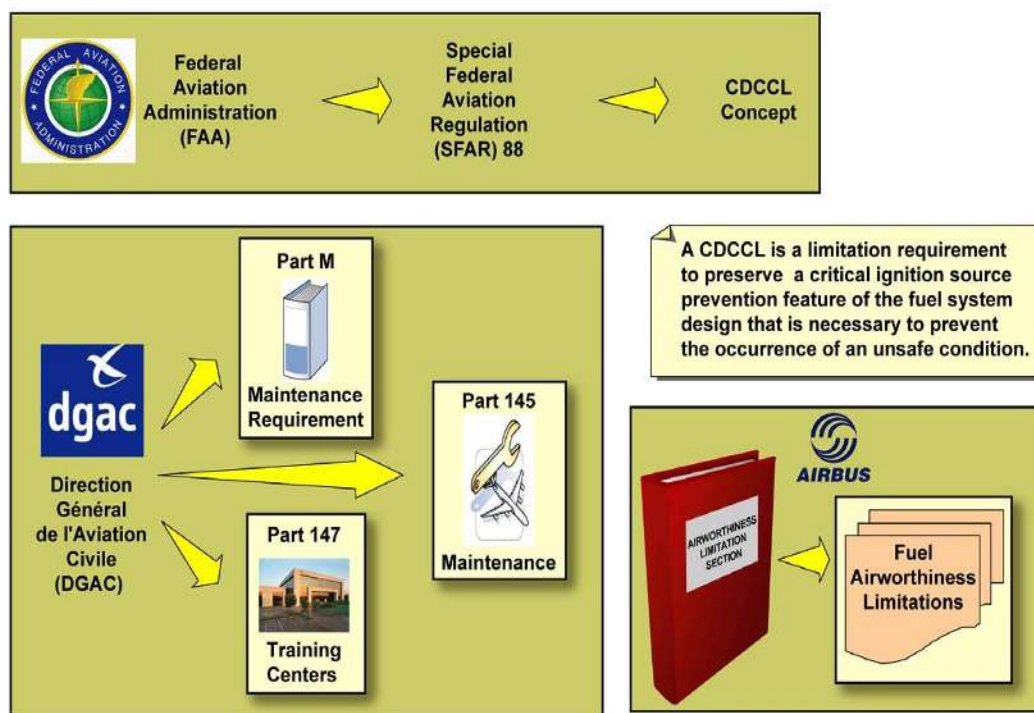
Effectivity:

- Large aeroplanes as defined as maximum type certified passenger capacity of
- 30 or more or a maximum certified payload capacity of 7500 lbs (3402 kg) cargo or more.

Affected organisations:

- CAR-145 approved maintenance organisations involved in the maintenance of large aeroplanes maximum type certified passenger capacity of 30 or more or a maximum certified payload capacity of 7500 lbs (3402 kg) cargo or more. and fuel system components installed on such aeroplanes when the maintenance data are affected by CDCCL

CRITICAL DESIGN CONFIGURATION CONTROL LIMITATIONS (CDCCL)



Airworthiness Limitations (AWL)

AWLs are items that the Certification process has defined as critical from a fatigue or damage tolerance assessment. The inspection frequency of such items is Mandatory and they should be treated in the same way as a CMR task.

The applicable airworthiness regulations require the applicant set forth the following in the AWLs:

- Approved mandatory replacement times for type certification,
- Approved mandatory structural inspection times for type certification,
- Structural inspection procedures for those approved mandatory times, and
- Critical design configuration control limitations (CDCCL).