



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

CIVIL AVIATION REQUIREMENTS

SECTION 6 – DESIGN STANDARDS AND TYPE CERTIFICATION

SERIES A PART V

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EFFECTIVE: FORTHWITH

F. No. DGCA-27037/8/2022-AED

Subject: Requirements for approval of design data for modification and repairs under Rule 52 of the Aircraft Rules, 1937

1. Introduction:

Sub-rule (1) of Rule 52 of the Aircraft Rules, 1937 states that a person shall not carry out any modification or repair affecting safety of any aircraft in respect of which there is a valid certificate of airworthiness unless he has been required to do so in pursuance of these rules or unless he has obtained the prior approval of the Director-General.

Further, sub-rule (2) of the said rule permits modifications/ repairs issued by the manufacturer of an aircraft, aircraft component or item of equipment of the aircraft for which a Type Certificate has been issued by the Director-General or elsewhere to be deemed approved modifications/ repairs, unless otherwise specified by the Director-General.

Sub-rule (3) of the rule stipulates that Director-General may give approval for repair or modification other than those referred to in sub rule (2), of an aircraft, aircraft component, or item of equipment of that aircraft, where the owner or operator furnishes such evidence relating to the intended modification or repair and its effect on the airworthiness of aircraft as specified by the Director-General.

This CAR prescribes the requirements to be followed by an Indian owner/ operator for obtaining approval of design data for modification or repair on aircraft, aircraft component, or item of equipment of that aircraft from DGCA under sub-rule (3) of the Aircraft Rules, 1937.

This CAR is issued under the provisions of Rule 133A of the Aircraft Rules, 1937.

2. Applicability:

This CAR applies to all Indian owners or operators intending to carry out modification or repair in respect of any aircraft registered in India, in case the design data in respect of the

modification or repair is not approved by the State of Design or the data certified by Authorized Representative (AR)/ Designated Engineering Representative (DER) of the State of Design of the aircraft.

3. Definition:

For the purposes of this CAR,

“Aeronautical product” means any civil aircraft, aircraft engine or propeller.

“Aircraft component” means any part, the soundness and correct functioning of which, when fitted to an aircraft, is essential to the continued airworthiness or safety of the aircraft and includes any item of equipment.

“Airworthiness requirements” means the comprehensive and detailed airworthiness codes established, adopted or accepted by DGCA for the class of aircraft, engine or propeller under consideration.

“CAA” means Civil Aviation Authority of a Contracting State.

Contracting State means any State which is for the time being a party to the Convention on International Civil Aviation concluded at Chicago on December 7, 1944, and any amendment which may be made thereto under the provisions of Article 94 thereof.

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

“Major modification” A change in the type design of an aeronautical product that has an appreciable effect, or other than a negligible effect, on the mass and balance limits, structural strength, engine operation, flight characteristics, reliability, operational characteristics, or other characteristics or qualities affecting the airworthiness or environmental characteristics of an aeronautical product.

“Major repair” means any repair of an aeronautical product that might appreciably affect the structural strength, performance, engine, operation flight characteristics or other qualities affecting airworthiness or environmental characteristics.

“Minor modification” means a modification other than a major modification.

“Minor repair” means a repair other than a major repair.

“Modification” means a change to the type design of an aeronautical product which is not a repair.

“Operator” means a person, organization or enterprise engaged in or offering to engage in aircraft operation.

“Repair” means the restoration of an aeronautical product to an airworthy condition as defined by the appropriate airworthiness requirements.

“Satisfactory evidence” means a set of documents or activities that DGCA accepts as sufficient to show compliance with an airworthiness requirement.

“Special Conditions” are detailed technical specifications issued by DGCA that contain such safety standards necessary to establish a level of safety equivalent to that established in the applicable airworthiness code, if the related airworthiness code does not contain adequate or appropriate safety standards for the product.

“State of Design” means the State having jurisdiction over the organization responsible for the type design.

“State of Design of modification” means the State having jurisdiction over the individual or organisation responsible for the design of modification or repair of an aircraft, engine or propeller

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

“Supplemental type certificate” means an approval of a major modification covering those areas or aspects of an aeronautical product that were modified. It also refers to an approval of replacement parts or repair, where its installation on an aeronautical product results in a modification.

“Type design” means the set of data and information necessary to define an aeronautical product type for the purpose of airworthiness determination and to any later aeronautical product of the same type.

“Type Certificate” means a document issued by a Contracting State to define the design of an aircraft, engine or propeller type and to certify that this design meets the appropriate airworthiness requirements of that State.

4. Requirements:

- 4.1 Modification and repair shall be classified as major or minor consistent with the requirement stipulated in CAR 21.91 & 21.435 (Refer Annexure-I for classification).
- 4.2 An applicant seeking approval of major modification shall comply with the requirements outlined in CAR 21 Subpart E and its associated AMC/GM.
- 4.3 An applicant seeking approval of major repair shall comply with the requirements outlined in CAR 21 Subpart M and its associated AMC/GM.

- 4.4 Minor modification and repair may be approved either by the DGCA or by an approved design organisation entitled to exercise privileges under CAR 21 21.263(c) (1) & (2) and as recorded in the terms of approval of its DGCA.
- 4.5 An application for approval of a minor modification or repair shall be made in Form CA-32 (Annexure - II) along with relevant certification documents, as applicable, to Aircraft Engineering Directorate (AED), DGCA.
- 4.6 The application for approval of a minor modification or repair shall include, a certification programme for the demonstration of compliance consisting of:
- A. a description of the change/ repair design (Refer Annexure-III for details) identifying:
 - (i) the configuration(s) of the product in the type certificate upon which the change is to be made;
 - (ii) all areas of the product in the type-certificate, including the approved manuals, that are changed or affected by the change/ repair;
 - B. an identification of any re-investigations necessary to demonstrate compliance of the change/ repair and areas affected by the change/ repair with the type-certification basis and environmental protection requirements.
- 4.7 A minor modification/ minor repair design may be approved:
- A. when it has been demonstrated that the change/ repair design and areas affected by the change/ repair design comply with the applicable airworthiness requirements provided in the type-certification basis and the environmental protection requirements incorporated by reference in the type-certificate;
 - B. when compliance with the type-certification basis that applies in accordance with para 4.7(A) has been declared and the justifications of compliance have been recorded in the compliance documents; and
 - C. when no feature or characteristic has been identified that may make the product unsafe for the uses for which approval is requested.
- 4.8 DGCA may impose additional special conditions if it finds necessary to establish a level of safety equal to that established by the type-certification basis incorporated by reference in the type-certificate.
- 4.9 The applicant shall submit to the DGCA the substantiation data for the change/repair and a statement that compliance has been demonstrated in accordance with para 4.6.
- 4.10 An approval of a minor modification/repair shall be limited to the specific configuration(s) in the type-certificate to which the change/repair relates.
- 4.11 For each approval of a minor modification/ repair, all relevant design information, drawings and test reports, including inspection records for the changed/ repaired product tested, shall be held by the applicant and shall be retained in order to provide

the information necessary to ensure the continued airworthiness and compliance with applicable environmental protection requirements of the changed/ repaired product.

- 4.12 (a) The holder of a minor modification approval shall furnish at least one set of the associated changes, if any, to the instructions for continued airworthiness of the product including AFMS.

These changes shall be made available to each known owner of the product incorporating the minor change, upon its delivery and thereafter make those changes in instructions available, on request, to any other person required to comply with any of the terms of those instructions.

(b) In addition, updates to those changes to the instructions for continued airworthiness including AFMS shall be made available to all known operators of a product incorporating the minor change and shall be made available, on request, to any person required to comply with any of those instructions.

- 4.13 (a) The holder of the repair design approval shall furnish at least one complete set of those changes to the instructions for continued airworthiness which result from the design of the repair, comprising descriptive data and accomplishment instructions to each operator of aircraft incorporating the repair.

The repaired product, part or appliance may be released into service before the changes to those instructions have been completed, but this shall be for a limited service period, and in agreement with DGCA. Those changes to the instructions shall be made available on request to any other person required to comply with any of the terms of those changes to the instructions.

(b) If updates to those changes to the instructions for continued airworthiness are issued by the holder of the repair design approval after the repair has been first approved, these updates shall be furnished to each operator and shall be made available on request to any other person required to comply with any of the terms of those changes to the instructions.

- 4.14 DGCA as State of Design of the modification shall transmit the mandatory continuing airworthiness information to all States that have the modified aircraft on their registries.

- 4.15 Each holder of an approval of a minor modification or approval of a repair design, shall collaborate with the production organization as necessary to ensure the satisfactory coordination of design & production and the proper support of the continued airworthiness of the product, part or appliance.

- 4.16 Each holder of an approval of minor modification/repair shall have a system for collecting information related to failures, malfunctions, defects or other occurrences of which it is aware related to a product, part, or appliance covered by the approval and shall report the same to DGCA (AED), as soon as practicable and in any case not later

than 72 hours.

- 4.17 Any owner/operator that holds or has applied for a minor modification/repair design approval shall grant the DGCA access to any facility (including its partners, suppliers and subcontractors), product, part and appliance, document, record, data, process, procedure or to any other material in order to review any report, make any inspection, or perform or witness any flight and ground test, as necessary, in order to verify the initial and continued compliance of the organisation.
- 4.18 It shall be the responsibility of the owner/operator to ensure the compatibility of all design changes incorporated in their aircraft. The owner/operator contracting with an installer for incorporation of any aircraft modification or repair should provide the installer with information on all existing design changes to the aircraft so that compatibility may be verified.

5. Issue/ Cancellation approval of minor modification/ repair design:

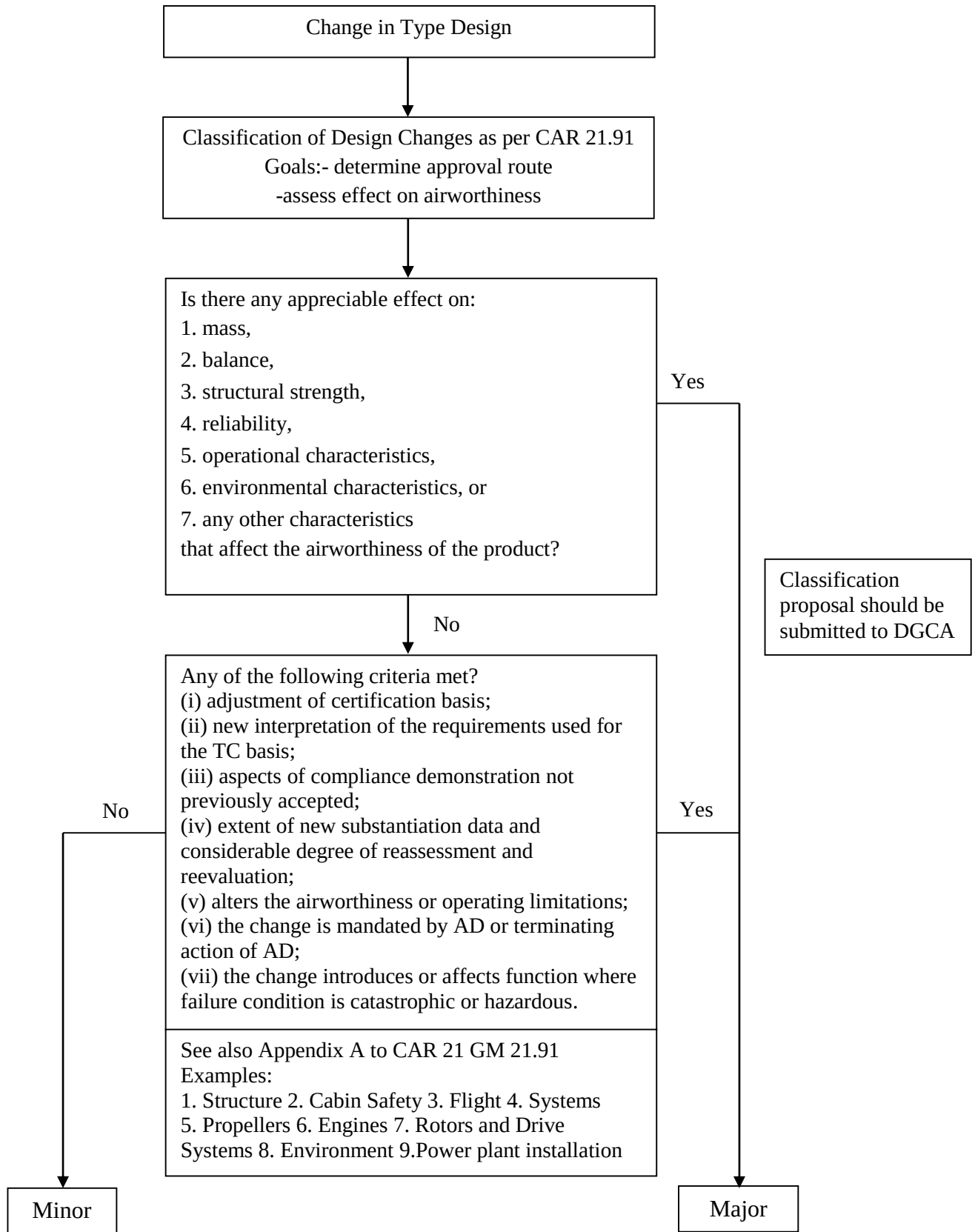
- 5.1 Upon being satisfied, DGCA may grant approval for minor modification/ repair design, which shall be communicated to the applicant along with additional conditions, if any.
- 5.2 If at any point of time, the DGCA finds that there is a reasonable doubt to indicate that the safety of the aeronautical product is imperiled because of an unsafe condition developed in the aeronautical product as a result of the modification, or that the said approval of modification has been obtained based on false documents, DGCA may cancel the approval for minor modification/ repair design.



(Vikram Dev Dutt)
Director General of Civil Aviation

Annexure-I

Classification Process





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GOVERNMENT OF INDIA
DIRECTORATE GENERAL OF CIVIL AVIATION

FORM CA-32 – Application for Approval of Minor Change/ Minor Repair Design

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			
☐ Minor Change ☐ Minor Repair ☐ Including Change to approved parts of Flight Manual (FM)			
2.1 Fixed wing aircraft			
Large Aeroplanes ☐ over 5,700 kg	Small/ Light Aeroplanes ☐ over 5,700 kg up to 8,620 kg (incl. commuter) ☐ VLA ☐ up to 5,700 kg ☐ Powered sailplanes ☐ LSA ☐ Sailplanes		
2.2 Rotary wing aircraft	☐ Transport category rotorcraft	☐ Normal category rotorcraft	☐ Very Light Rotorcraft
2.3 Propulsion			
Engines ☐ Reciprocating ☐ Turbine		☐ Propeller ☐	
2.4 Manned Hot Air Balloon		☐	
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	

Information to be entered into minor change/minor repair application form:

The use of this form is required to enable DGCA to process applications without undue delay. 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.

Field 1.1: enter the name of the legal entity making the application, Company registration number (with copy of Indian Companies register), address; enter the name, telephone, fax and e-mail of contact person for this application and authorized person

Field 1.2: for applicants within the country: make reference to DOA / alternative procedures approval or related application made to DGCA e.g. for extension of scope related to this design change

Field 2: identify minor change or minor repair

Field 2.1: identify the kind of product / equipment for which an application is made by ticking the related checkboxes; the weight category shall refer to the maximum take-off weight (MTOW) of the aircraft type/model as specified in the type certificate data sheet

Field 3: identify the applicable airworthiness code proposed to be used for DGCA certification

Field 4.1:

- For applicability: enter manufacturer, type / model, DGCA - or grandfathered NAA-TC / -ITSO number of the original product / equipment
- For Title : give a title of the design change / repair design
- For Description: give a brief description of the design change / damage and repair design
- For Affected Areas (including manuals): identify all parts of the type design and the approved manuals affected by the change / repair, and the airworthiness codes and environmental protection requirements with which the change / repair has been designed

Field 4.2: for applicants outside the country: enter reference to approval of the State of Design of the change / repair

Field 6: signature of an authorised representative of the applicant

MODIFICATION / REPAIR LEAFLET No.**Title of the Modification/Repair:**

1. Applicability			<i>Specify MSN & VT registration of the aircraft</i>			
2. Reason of modification/repair						
3. Description of the modification/repair including details of affected area						
4. Existing Approval (Details of approval for similar modification from foreign CAA) Provide STC/major modification approval including qualification documents as evidence						
5. Applicability & Relevant Certification Basis (FAR, CS, CAR, etc.)						
6. Compliance/ Embodiment:						
7. References to the applicable part/drawing						
S/N	Reference	Description	Remarks			
8. Assembly/ Sub-Assemblies/ Parts/ Standard Parts necessary for modification						
New parts no.	Key	Qty	Description	Old Part no.	Issue	Key
Key <i>A – Part incorporated by this modification.</i> <i>B – Part not incorporated by this modification, But required for its incorporation</i> <i>C – Part deleted by this modification</i>						

9. Modification/repair Procedures and Accomplishment Instructions	
10. * Equipment Approval/ Component listing <i>(Include Type approval ETSO/ FAA TSO/ ITSO & Class etc.)</i>	
11. Physical Installation Issues <i>(Stress analysis, Interface, Egress, Support Devices, Visibility etc)</i>	
12. * Electrical Arrangements <i>(Electrical load analysis, circuit protection, wire type etc)</i>	
13. Software/ Complex Electronic Hardware Accomplishment Summary	
14. Environmental Issues <i>(Cooling, vibration, contamination risks etc)</i>	
15. Weight & balance.	
16. Antenna Positions and Structural Provisions/ Implications.	
17. Indicator/ Display/ Area Lighting	
18. Ground Checks/ Tests <i>(Verify design with regard to performance, interface and safety)</i>	
19. * Flight Test <i>(Verify design with regard with to performance, and system functions)</i>	
20. Interface Considerations <i>(Effects on other systems, previous modifications, operating procedures, etc)</i>	
21. Cockpit Notices, Labels, Placards and Passenger Information.	
22. * Documents to be Amended <i>(Flight Manual, AMS, MM, IPC, SRM, MMEL, SB, O/H Manual, Wiring Manual etc)</i>	
23. Routine Maintenance introduced as result of modification/repair, if any.	
24. Any other issue necessary as result of investigation & compliance to applicable regulation that needs to be documented.	
25. Safety Assessment	
26. Airworthiness Limitations	