



ICAO

Doc 10146

Manual on Airworthiness Approvals for Changing Aircraft Cabin Interiors

First Edition, 2020



Approved by and published under the authority of the Secretary General

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AMENDMENTS

Amendments are announced in the supplements to the *Products and Services Catalogue*; the Catalogue and its supplements are available on the ICAO website at www.icao.int. The space below is provided to keep a record of such amendments.

RECORD OF AMENDMENTS AND CORRIGENDA

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FOREWORD

A need was identified for the development of guidance material related to the certification requirements for the airworthiness of commercial aircraft undergoing changes to the aircraft cabin interiors. Such cabin modifications could include simple or complex changes regarding aircraft with passenger, combi- and all-cargo configurations.

The policies and procedures for approval of modifications and repairs to an aircraft cabin may be different among States due to the differences in existing national aviation legislation and regulations.

This manual, developed by a group of regulators and industry subject matter experts, provides additional information on airworthiness-related provisions for States wishing to establish or enhance their system of approval for such modifications and provides information to industry stakeholders, facilitating the effective implementation of such provisions relating to cabin changes in the future.

Comments on this manual, particularly with regard to its application and usefulness, would be appreciated from all States and ICAO Technical Cooperation field missions. These will be taken into consideration in the preparation of subsequent editions. Comments concerning this manual should be addressed to:

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GLOSSARY

DEFINITIONS

When the following terms are used in this manual, they have the meanings shown. Specific definitions found in Annex 6 — *Operation of Aircraft* and Annex 8 — *Airworthiness of Aircraft* are reproduced to facilitate their use in this manual. The additional definitions are appropriate to use in this document only.

Aeronautical product. Any aircraft, aircraft engine, aircraft propeller or a part to be installed thereon.

Airworthiness Directive (AD). A regulatory document which identifies aeronautical products in which an unsafe condition exists, and where the condition is likely to exist or develop in other aeronautical products of the same type design. It prescribes mandatory corrective actions to be taken or the conditions or limitations under which the aeronautical products may continue to be operated. The AD is the common form of mandatory continuing airworthiness information mentioned in Annex 8.

Airworthiness Standards. Detailed and comprehensive design and safety criteria applicable to the category of the aeronautical product (aircraft, engine and propeller) that satisfy, at a minimum, the applicable Standards of Annex 8.

Applicant. An individual or organization, or their representative, responsible for the design or modification of an aeronautical product, making application for the issuance of, or a change to, a design approval of an aeronautical product.

Appropriate airworthiness requirements. The comprehensive and detailed airworthiness codes established, adopted or accepted by a Contracting State for the class of aircraft, engine or propeller under consideration.

Approved maintenance organization. An organization approved by a Contracting State, in accordance with the requirements of Annex 8, Part II, Chapter 6 — Maintenance Organization Approval, to perform maintenance of aircraft, engine, propeller or associated parts and operating under supervision approved by that State.

Note.— Nothing in this definition is intended to preclude that the organization and its supervision be approved by more than one State.

Bilateral Airworthiness Agreement. An executive agreement concluded through an exchange of diplomatic notes between a Contracting State and its foreign counterpart.

Bilateral Aviation Safety Agreement. A formal agreement providing for bilateral cooperation in a variety of aviation areas, including maintenance, flight operations, and environmental certification. For aircraft certification, an additional document, an Implementation Procedures for Airworthiness, is developed to address specific subject areas under the terms of the agreement.

Certification basis. The applicable airworthiness and environmental standards established by a State as the basis by which the type design of an aeronautical product, or change to that type design, is approved or accepted. The certification basis may also include special conditions of airworthiness, findings of equivalent level of safety, and/or exemptions when determined by the State to apply to the type design.

Certification Compliance Plan. The certification compliance plan is the primary document in the modification approval process that serves both as a checklist and an official record of the intended method of compliance.

Combi aircraft. An aircraft that can be readily configured to carry either passengers or cargo as a freighter. Some Combi aircraft include a certificated passenger and a certificated cargo compartment on the same deck and may have a partition installed in the cabin to allow both uses at once. Combi aircraft may feature an oversized cargo door and frequently have specialized tracks on the cabin floor to permit the quick change of the cabin configuration.

Continuing airworthiness. The set of processes by which an aircraft, engine, propeller or part complies with the applicable airworthiness requirements and remains in a condition for safe operation throughout its operating life.

Equivalent level of safety. As used in type certification, a finding where literal compliance with a specific airworthiness requirement cannot be demonstrated but compensating factors exist in the type design that can be shown to provide a level of safety equivalent to that intended by the certification basis.

Exception/Exemption. A relief from compliance with the requirement(s) of airworthiness or environmental standards, or operating rules, based on the determination by a civil aviation authority that granting such relief will not adversely affect safety.

Implementation Procedures for Airworthiness. A procedural document authorized by the BASA Executive Agreement for design approval, production activities, export airworthiness approvals, post-design approval activities and technical assistance between authorities. This document defines the scope for civil aeronautical products and parts eligible for import into the Contracting State and the counterpart BASA signatory country. It further defines the interface requirements and procedures between the authorities for validation, import and continued support of those civil aeronautical products and articles.

Maintenance. The performance of tasks on an aircraft, engine, propeller, or associated part required to ensure the continuing airworthiness of an aircraft, engine, propeller or associated part including any one or combination of overhaul, inspection, replacement, defect rectification, and the embodiment of a modification or a repair.

Maintenance programme. A document which describes the specific scheduled maintenance tasks and their frequency of completion and related procedures, such as a reliability programme, necessary for the safe operation of those aircraft to which it applies.

Major modification. In respect of an aeronautical product for which a type certificate has been issued, a change in the type design 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.

Mandatory Continuing Airworthiness Information (MCAI). The mandatory requirements for the modification, replacement of parts, or inspection of aircraft and amendment of operating limitations and procedures for the safe operation of the aircraft. Among such information is that issued by Contracting States in the form of airworthiness directives.

Master minimum equipment list (MMEL). A list established for a particular aircraft type by the organization responsible for the type design with the approval of the State of Design containing items, one or more of which is permitted to be unserviceable at the commencement of a flight. The MMEL may be associated with special operating conditions, limitations or procedures.

Minimum equipment list (MEL). A list which provides for the operation of aircraft, subject to specified conditions, with particular equipment inoperative, prepared by an operator in conformity with, or more restrictive than, the MMEL established for the aircraft type.

Minor modification. A modification other than a major modification.

Modification. A change to the type design of an aircraft, engine or propeller.

Note.— A modification may also include the embodiment of the modification which is a maintenance task subject to a maintenance release. Further guidance on aircraft maintenance — modification and repair is contained in the Airworthiness Manual (Doc 9760).

Repair. The restoration of an aircraft, engine, propeller or associated part to an airworthy condition in accordance with the appropriate airworthiness requirements after it has been damaged or subjected to wear.

State of Design. The State having jurisdiction over the organization responsible for the type design.

State of Design of Modification. The State having jurisdiction over the individual or organization responsible for the design of the modification or repair of an aircraft, engine or propeller.

State of Registry. The State on whose register the aircraft is entered.

Note.— In the case of the registration of aircraft of an international operating agency on other than a national basis, the States constituting the agency are jointly and severally bound to assume the obligations which, under the Chicago Convention, attach to a State of Registry. See, in this regard, the Council Resolution of 14 December 1967 on Nationality and Registration of Aircraft Operated by International Operating Agencies which can be found in Policy and Guidance Material on the Economic Regulation of International Air Transport (Doc 9587).

State of the Operator. The State in which the operator's principal place of business is located or, if there is no such place of business, the operator's permanent residence.

Structural integrity programme. The continuing structural integrity programme should be initiated by the type design organization and developed jointly with representatives of air operators and airworthiness authorities. The authority in each State of Registry having aeroplanes affected should determine how, and to what extent, the substance of the programme is made mandatory, consistent with the State of Registry's own experience with the aeroplane and its procedures for enforcement of continuing airworthiness requirements.

Type certificate. 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.

Note.— In some Contracting States a document equivalent to a Type Certificate may be issued for an engine or propeller type.

Type design. The set of data and information necessary to define an aircraft, engine or propeller type for the purpose of airworthiness determination.

ABBREVIATIONS

When the following abbreviations and acronyms are used in this manual, they have the meanings shown.

AD	Airworthiness directive
AED	Airworthiness engineering division
AFM	Aircraft flight manual
AMM	Aircraft maintenance manual
AMO	Approved maintenance organization
BAA	Bilateral airworthiness agreement
BASA	Bilateral aviation safety agreement

CAA	Civil aviation authority
CCP	Certification compliance plan
CMM	Component maintenance manual
CofA	Certificate of Airworthiness
CVE	Certification verification engineer
DER	Designated engineering representative
DOA	Design organization approval
EASA	European Union Aviation Safety Agency
E-UM	Engineering Unit Member
FAA	Federal Aviation Administration
IATA	International Air Transport Association
ICA	Instruction for continuing airworthiness
ICAO	International Civil Aviation Organization
IFE	In-flight entertainment
IPA	Implementation procedures for airworthiness
IPC	Illustrated parts catalogue
MCAI	Mandatory continuing airworthiness information
MEL	Minimum equipment list
MMEL	Master minimum equipment list
ODA	Organization designation authorization
RSOO	Regional safety oversight organization
SARPs	Standards and Recommended Practices
SB	Service bulletin
SIP	Structural integrity programme
SME	Subject matter expert
SRM	Structural repair manual
STC	Supplemental type certificate
TC	Type Certificate
TCDS	Type certificate data sheet
TD	Type design
WDM	Wire diagram manual

REFERENCES

International Civil Aviation Organization (ICAO)

Convention on International Civil Aviation, signed at Chicago on 7 December 1944 and amended by the ICAO Assembly (Doc 7300)

Annex 6 — *Operation of Aircraft*

Part I — *International Commercial Air Transport — Aeroplanes*

Part II — *International General Aviation — Aeroplanes*

Part III — *International Operations — Helicopters*

Annex 8 — *Airworthiness of Aircraft*

Doc 9760 — *Airworthiness Manual*