

UNITED STATES OF AMERICA  
CIVIL AERONAUTICS BOARD  
WASHINGTON, D. C.

Effective: June 20, 1958  
Adopted: June 20, 1958

SPECIAL CIVIL AIR REGULATION

PROVISIONAL CERTIFICATION AND OPERATION OF MULTIENGINE  
TURBINE-POWERED TRANSPORT AIRPLANES FOR WHICH TYPE  
CERTIFICATES HAVE NOT BEEN ISSUED

The aviation industry of the United States has been engaged for several years in a concentrated program of design, development, and construction of turbine-powered transports. Several hundred of these transports have been ordered by United States' air carriers at a cost of nearly two billion dollars. One airplane of this type has already been flown by the manufacturer for several hundred hours in an extremely varied and rigorous flight test program. Other types are in various stages of design, construction, and flight testing by their manufacturers.

Air carriers have expressed the desire to operate these airplanes prior to final completion of the type certification programs. The air carriers have indicated in particular that they desire to conduct crew training and obtain as much experience as possible in ground handling, maintenance, and flight of these new airplanes prior to their introduction into commercial service.

Although certain limited operations of this nature have been permitted by the Administrator in the past, he has advised the Board that he considers his authority under Part 1 of the Civil Air Regulations inadequate for him to authorize the operations presently contemplated by the air carriers. The Board is of the opinion, however, that such operations by air carriers intending ultimately to use the airplanes in air carrier service will be in the public interest and should be permitted and encouraged prior to completion of type certification procedures, provided that such operations can be conducted safely. This will afford technical personnel of the air carriers, the Civil Aeronautics Administration, the Civil Aeronautics Board, and others an excellent opportunity to become familiar with the new equipment before it is used in air transportation.

The airplanes under consideration are being built to comply with the requirements of the Civil Air Regulations applicable to transport category airplanes. However, manufacturers of several of these types of airplanes have not yet demonstrated full compliance with the standards established in these regulations for the issuance of type certificates.

Normally, during the development of a new type airplane, the manufacturer applies to the Administrator for an experimental certificate. The Administrator thereafter issues such a certificate in accordance with Part 1 of the Civil Air Regulations if he finds that the airplane may be safely test flown by the manufacturer to show compliance with the Civil Air Regulations for the issuance of a type certificate. The Administrator prescribes appropriate operating restrictions, including the prohibition of carrying persons or property for compensation or hire. It is the policy of the CAA during this certification process to do everything possible to encourage legitimate experimentation leading to improvement in airplanes whenever this may be done without endangering persons and property not involved in the experimentation. In the present situation, turbine-powered transports have been issued experimental certificates in order that flight test programs may be completed. Historically, however, and in keeping with the intent of Section 603 (a) (1) and (c) of the Civil Aeronautics Act of 1938, as amended, operations conducted in airplanes so certificated have been limited for the most part to flight test work and related purposes.

It is the practice of manufacturers to initiate production of airplanes of a new type while they are accomplishing the type certification program. Thus, many airplanes may be completed prior to the issuance of the type certificate; the number produced by various manufacturers will, of course, vary with orders on hand and anticipated demand for the airplanes.

In this period, however, the manufacturer is actively pursuing type certification of his airplane. Among other things he submits such descriptive data, test reports, and computations as are necessary to demonstrate that the airplane complies with the requirements of Part 4b. In addition, it is the CAA policy that the manufacturers' test pilots certify that the airplanes have been flown at least in all maneuvers necessary for proof of compliance with the flight requirements of Part 4b and Special Civil Air Regulation No. SR-422.

The Board considered that air carriers should be able to utilize those airplanes which are pending type and airworthiness certification under provisional certification to permit essential crew training and service tests, and to gain other useful information concerning, for example, fuel management, dispatching, and traffic control procedures, prior to operation in air transportation, subject, of course, to appropriate limitations.

Accordingly, the Bureau of Safety, on April 22, 1958, circulated to interested persons Civil Air Regulations Draft Release No. 58-9, "Special Regulations to Provide for Provisional Certification and Operation of Multiengine Turbine-Powered Transport Airplanes for Which Type Certificates Have Not Been Issued." In this proposal the Bureau of Safety described in some detail the problems associated with such operations and some of the objectives which could be achieved. It was pointed out that much useful technical information could be obtained and in addition the introduction of jets into service in the U. S. could be expedited on a sound and efficient basis. This proposal set forth various procedures and limitations covering three aspects of the problem: Provisional type certification, provisional airworthiness certification, and operational rules. A detailed explanation of each of these provisions is contained in Draft Release 58-9.

The response to this draft release from all persons who would be affected by its provisions was uniformly favorable. There were recommendations, however, for amendment to specific provisions, the most significant of which are discussed below:

Representatives of operators of executive transports recommended that the provisions of the proposed regulation should be made applicable not only to air carriers but to operators of executive transports, advising that there was equal need for provisional certification of these aircraft and that any other action would be arbitrary and discriminatory. The Board's proposal applying to certificated air carriers only was prompted by the need for full assurance that new design aircraft in air transportation have as much service experience as possible before entering such service consistent with statutory requirements to insure the highest degree of safety in air transportation. It was considered that this approach to type and airworthiness certification should be pioneered by the air carriers in which the public interest was greatest; however, the Board considers these recommendations to be well taken and will consider appropriate extensions of this special regulation.

The Administrator of Civil Aeronautics stated that the provisions of Section I (b) (2), which would require the Administrator to predict that a type certificate for a particular airplane would be issued not later than 6 months from the date application was made for a provisional type certificate, presented administrative difficulties without a commensurate contribution to the safety of operations. The Board concurs in this opinion, and is not including this provision in this regulation. The CAA, as well as the manufacturers and air carriers, also indicated that the provisions of Section I (d) concerning duration were not wholly clear and should be amended. The Board intends that the privileges of this regulation shall be of limited duration only in order to achieve the objectives stated in this rule, namely, to permit air carriers to use new turbine transports in training and other operations only if it has been shown that the normal certification requirements are close to being met. The 6 months' duration period was selected, therefore, to insure that only airplanes which were in the latter stages of type certification would be eligible for provisional certification and operation. Since this will not be an issue for some time, the Board will consider this problem on its merits should experience under this regulation indicate that revision of the duration requirements with respect to reissuance or renewal is in the public interest. The proposed 30 day grace period for the duration of a provisional type certificate after the issuance of a transport category type certificate is being extended to 60 days to provide the air carriers with sufficient time to return the provisionally certificated airplanes to the manufacturers for modifications should such be necessary as the result of type certification tests. In order to clarify this requirement further, a proviso has been added to insure that should a transport category type certificate be issued, for example, 5 months after the issuance of a provisional type certificate, the applicant will still have 60 days to return airplanes to the factory as necessary. Similar revisions have been made to the duration of the provisional airworthiness certificates in order to insure consistency.

The Aircraft Industries Association, in commenting on Draft Release 58-9, indicated that it considered an amendment to Part 1 of the Civil Air Regulations would be a more appropriate method for authorizing the proposed operations. The Board is aware of other problems connected with the operation of airplanes holding experimental certificates and will give attention to them in separate rule making. AIA, however, also commented on certain of the specific provisions of the proposed regulation, particularly as those provisions affected the manufacturers of jet transports. Concern was expressed that the requirement of Section I (b) might require the submission of the kind of report not currently required by the Civil Air Regulations. The Board intends, however, that the manufacturer will be required to report only to the extent that he is currently required under the provisions of § 4b.16 of Part 4b of the Civil Air Regulations and that this will not be an additional requirement.

The Board has given careful consideration to the air carriers' recommendations pursuant to Draft Release 58-9 that the operation rules in Section III be modified to permit the carriage of cargo and mail in the provisionally certificated jet transports. The Board wishes to reiterate the statement of the Bureau of Safety in Draft Release 58-9 that it does not consider that at this time these transports should be operated in air transportation; i.e., carrying persons, cargo, or mail for compensation or hire. After the Board has had opportunity to evaluate experience gained under this regulation, further consideration will be given to the limited carriage of cargo and mail if such is determined to be in the public interest. The Board anticipates that interested carriers, after they have established and operated their crew training and familiarization programs, may petition the Board for special authority to conduct cargo and mail operations. The Board would expect that carriers make a clear showing that such operations would advance the safety objectives of this regulation and would not be based solely on economic considerations.

In Draft Release 58-9 the Bureau of Safety solicited specific comment on a recommendation that provisionally certificated airplanes be equipped with flight recorders. Comment received indicated that a requirement for a flight recorder of a type designed to meet the requirements of presently effective operating rules would be extremely burdensome. At least one major potential operator of the provisionally certificated airplanes has informed the Board that installation provisions for a NACA VGH recorder and a recorder designed to meet the requirements of the operating rules will be accomplished on the first airplane to be delivered. At this time, however, such operator is not certain whether either type of recorder will be delivered in time for installation on the airplane at the initiation of operations under this special regulation. Every effort is promised, however, to have them installed as soon as possible; other carriers also are in the same position. In view of this situation and the fact that extensive plans have been made for the installation in these transports of NACA recorders in a cooperative effort among aircraft manufacturers, air carriers, and the NACA, the Board will not require by regulation the installation of flight recorders in provisionally certificated airplanes. The Board urges both the manufacturers and air carriers, however, to make every effort to install flight recorders at the earliest opportunity in order that valuable technical data can be obtained with respect to the operation of these airplanes and that operating experience of the flight recorders themselves may be obtained also.

The Air Line Pilots Association recommended that the minimum flight time required for issuance of both the provisional type certificate and related airworthiness certificate should be increased. While the Board recognizes the validity of the general proposition that more flight time might be desirable, it considers that the minimums contained in the proposed regulation are adequate to insure a satisfactory level of safety for the type of operation authorized.

The Flight Engineers' International Association recommended that special certification standards be established for flight engineers who will be affected by this regulation. Specifically, FEIA requested that the regulation require that flight engineers demonstrate to the Administrator a complete and absolute knowledge of the aircraft, its accessories and systems, and that this information be added to the flight engineer certificate. The air carrier is charged by this regulation with the responsibility for conducting appropriate training and maintaining adequate records. The Board is of the opinion, therefore, that the provisions of Section III (e) adequately provide for the training of the crew members who will engage in operations under this regulation.

Interested persons have been afforded an opportunity to participate in the making of this regulation (23 F.R. 2843), and due consideration has been given to all relevant matter presented. Since this regulation imposes no additional burden on any person it may be made effective on less than 30 days' notice.

In consideration of the foregoing, the Civil Aeronautics Board hereby makes and promulgates the following Special Civil Air Regulation, effective June 20, 1958.

Contrary provisions of the Civil Air Regulations notwithstanding, a turbine-powered transport airplane for which the issuance of a transport category type certificate is pending shall be eligible for provisional certification and operation in accordance with the provisions of this special regulation.

Section I - Provisional type certificate.

(a) Applicant.

(1) Any U. S. manufacturer of a turbine-powered airplane may apply for the issuance of a provisional type certificate provided that he has applied to the Administrator for the issuance of a transport category type certificate for such airplane. The application for a provisional type certificate shall be made in a manner prescribed by the Administrator.

(2) The applicant shall be a manufacturer who has previously received a type certificate for at least one airplane in the transport category and has a currently effective production certificate for that type.

(b) Requirements for issuance. The Administrator shall issue a provisional type certificate for an airplane for which application is made in accordance with paragraph (a) of this section when the conditions of subparagraphs (1) through (8) of this paragraph are met.

(1) The applicant shall submit the report of flight tests required by § 4b.16 of Part 4b of the Civil Air Regulations and the Civil Aeronautics Administration's official flight test program with respect to the issuance of the type certificate shall be in progress.

(2) The applicant shall certify that, to the best of his knowledge, the airplane for which provisional type certification is sought has been designed and constructed in accordance with those airworthiness requirements applicable to the issuance of the type certificate for that airplane.

(3) An airplane conforming with the type for which a type certificate has been applied shall have been flown at least 100 hours by the applicant under the provisions of an experimental certificate issued in accordance with the provisions of Part 1 of the Civil Air Regulations.

(4) The applicant shall have flown the airplane in all maneuvers necessary to show compliance with those flight requirements applicable to the issuance of the type certificate.

(5) The applicant shall have prepared a provisional airplane flight manual containing all the limitations, information, and procedures as are required for the issuance of the type certificate for that airplane: Provided, That where all limitations, information, and procedures have not been established, the applicant shall establish appropriate restrictions on the operation of the airplane.

(6) The applicant shall state that the airplane is considered safe for operation for the purposes set forth herein when conducted in accordance with the provisional airplane flight manual prescribed in subparagraph (5) of this paragraph.

(7) The applicant shall establish special inspections and maintenance instructions which are considered necessary to insure continued airworthiness of the airplane.

(8) The Administrator shall find, on the basis of the provisions contained in this special regulation, that the airplane has no feature, characteristic, or condition which renders it unsafe when operated in accordance with the provisional airplane flight manual prescribed in subparagraph (5) of this paragraph and maintained in accordance with the inspections and maintenance instructions prescribed in subparagraph (7) of this paragraph.

(c) Transferability. A provisional type certificate issued under this special regulation shall not be transferable.

(d) Duration. A provisional type certificate shall remain in effect for 6 months or until the airplane is issued a transport category type certificate, whichever occurs first, unless sooner superseded, revoked, or otherwise terminated by the Administrator or the Board: Provided, That a provisional type certificate which would terminate prior to 6 months after issuance due to the issuance of a transport category type certificate may remain in effect for an additional 60 days.

## Section II - Provisional airworthiness certificate.

(a) Applicant. The holder of a provisional type certificate or a certificated U. S. air carrier authorized to conduct operations by Section III of this regulation may apply for the issuance of a provisional airworthiness certificate for an airplane for which a provisional type certificate has been issued in accordance with the provisions of Section I of this special regulation. The application for a provisional airworthiness certificate shall be made in a manner prescribed by the Administrator.

(b) Requirements for issuance.

(1) An applicant for a provisional airworthiness certificate for an airplane for which a provisional type certificate has been issued shall be issued such provisional airworthiness certificate upon presentation of a statement of conformity by the manufacturer that such airplane conforms to the provisional type certificate.

(2) The airplane shall have been manufactured under a quality control system established in anticipation of, and intended to be used as a basis for, the production certificate to be issued to cover that airplane.

(3) The airplane shall have been flown at least 5 hours by the manufacturer and found by him to be in safe operating condition.

(4) The airplane shall be furnished with a provisional airplane flight manual as required by subparagraph (b) (5) of Section I of this special regulation.

(5) The Administrator shall find, on the basis of the provisions contained in this special regulation, that the airplane has no feature, characteristic, or condition which renders it unsafe when operated in accordance with the provisional airplane flight manual prescribed in subparagraph (b) (5) of Section I of this special regulation and maintained in accordance with the inspections and maintenance instruction prescribed in subparagraph (b) (7) of Section I of this special regulation.

(6) The words "provisional airworthiness" shall be displayed on the exterior of the airplanes near each entrance to the cabin or cockpit of the airplane with letters not less than 2 inches in height.

(c) Transferability. A provisional airworthiness certificate issued under this special regulation shall be transferable only to an air carrier authorized to conduct operations by Section III of this regulation.

(d) Duration. A provisional airworthiness certificate shall remain in effect for 6 months, or until the airplane is issued a transport category type certificate, whichever occurs first, unless sooner superseded, revoked, or otherwise terminated by the Administrator or the Board: Provided, That provisional airworthiness certificates which would terminate prior to 6 months after issuance due to the issuance of a transport category type certificate may remain in effect for an additional 60 days.

Section III - Operation rules. An air carrier holding an air carrier operating certificate issued by the Administrator in accordance with Part 40, 41, or 42 of the Civil Air Regulations may operate turbine-powered transport category airplanes certificated in accordance with Sections I and II of this special regulation in accordance with the following operating rules:

(a) An air carrier may conduct flights for the purpose of crew training, service testing, and simulated air carrier operations not in air transportation, or as otherwise specifically authorized by the Board.

(b) Operations which are conducted for the purposes delineated in the definition of "flight test" in § 60.60 of Part 60 of the Civil Air Regulations shall be conducted in accordance with § 60.24.

(c) The airplane shall be operated in accordance with the limitations, information, and procedures prescribed in the provisional airplane flight manual prepared in accordance with subparagraph (b) (5) of Section I of this special regulation.

(d) An air carrier shall establish procedures for the use and guidance of flight and ground operations personnel in the conduct of its operations. Specific procedures shall be established for operations from airports where the runways may require a take-off or approach over populated areas. These procedures shall be approved by the Administrator.

(e) In addition to crew members, only those persons listed in § 40.356 (c) of Part 40 shall be carried in operations conducted under this special regulation.

(f) Each air carrier shall insure that each flight crew member possesses adequate knowledge of, and familiarity with, the airplane and the procedures to be used by him.

(g) Each air carrier shall maintain current records for each flight crew member. These records shall contain such information as is necessary to show that the crew member is properly trained and qualified to perform his assigned duties.

(h) The appropriate instructor, supervisor, or check airman shall certify as to the proficiency of each flight crew member and such certification shall become a part of the flight crew member's record.

(i) Airplanes operated under this special regulation shall be maintained in accordance with applicable Civil Air Regulations, including any special inspections and maintenance instructions prescribed by the manufacturer or the Administrator.

(j) A log of flights conducted under this special regulation, and accurate and complete records of the inspections made, shall be kept by each air carrier and made available to the manufacturer and the Administrator.

(k) No airplane issued a provisional airworthiness certificate under this special regulation shall be operated if the manufacturer or the Administrator determines that a change in design, construction, or operation is necessary to insure safe operation until such change is made. (See also § 1.24 of Part 1 of the Civil Air Regulations.)

(l) The provisional airworthiness certificate shall be prominently displayed in the airplane at all times.

(m) Operations under this special regulation shall be restricted to the United States, its territories, and possessions, unless otherwise authorized by the Board.

This Special Civil Air Regulation shall terminate in 3 years unless sooner superseded or rescinded by the Board.

(Sec. 205 (a), 52 Stat. 984; 49 U.S.C. 425 (a). Interpret or apply secs. 601, 603, 605, 608, 609, 52 Stat. 1007, 1009, 1010, 1011, as amended; 49 U.S.C. 551, 553, 555, 558, 559)

By the Civil Aeronautics Board:

/s/ Marvin Bergsman

Marvin Bergsman  
Acting Secretary

(SEAL)