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

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Civil Air Regulations Amendment 14-2
Effective: May 18, 1954
Adopted: April 13, 1954

AIRCRAFT PROPELLER AIRWORTHINESS

MISCELLANEOUS AMENDMENTS

A study of the administrative portions of Part 14 of the Civil Air Regulations indicates that they do not set forth in sufficient detail and clarity the scope of the part and the choice of regulations applicable to issuance of and changes in type certificates. This has caused some difficulty in the administration of the regulations with respect to these matters. This amendment is concerned mainly with setting forth clearly the scope of the part, § 14.0, and those regulations that are applicable to the issuance of and change to a type certificate.

Although no basic change in policy from that followed in the past is contemplated, this amendment specifies in more detail the prerogatives of the applicant in choosing the regulations. It should be noted that the rules regarding the designation of applicable regulations, § 14.11, apply not only to a new propeller type for which application for a type certificate is made but also to all types irrespective of the date of original application for a type certificate. For example, the provisions which require, or which permit the applicant to elect, compliance with newer regulations would be effective not only to new type propellers but also to all existing types certificated under this part. This provision in no way negates the long standing rule that, except in unusual cases, the propeller need not comply with any regulations made effective subsequent to the date of application for a type certificate. A significant clarification is being made which defines those changes in a propeller type which are sufficiently extensive to warrant treating it as a new type. Another important change is the establishment of a time limitation of 3 years for the effectiveness of an application for type certification. The amendments to the other administrative provisions, §§ 14.12, 14.13, and 14.19, also include minor changes for the purposes of clarification.

In addition, this amendment adds a new requirement which prescribes that reversible propeller designs incorporate features within themselves or be adaptable to a reversing system in an airplane which is compatible with the principle of fail-safe design (§ 14.103). The intent of this rule is to assure that new reversible propeller designs will incorporate features which will preclude unwanted reversing during normal or emergency operation in case of a single failure or malfunctioning of the system when installed in an airplane. It is not intended by this rule to consider the failure of primary structural parts, the occurrence of which is expected to be extremely remote.

Interested persons have been afforded an opportunity to participate in the making of this amendment, and due consideration has been given to all relevant matter presented.

In consideration of the foregoing, the Civil Aeronautics Board hereby amends Part 14 of the Civil Air Regulations (14 CFR, Part 14, as amended) effective May 18, 1954:

1. By amending § 14.0 by inserting the words "and changes to" between the words "issuance of" and "type certificates", and by adding the following date in parentheses "(August 20, 1938)" after the phrase "effective date of this part".

2. By amending § 14.11 to read as follows:

14.11 Designation of applicable regulations. The provisions of this section shall apply to all propeller types certificated under this part irrespective of the date of application for type certificate.

(a) Unless otherwise established by the Board, the propeller shall comply with the provisions of this part together with all amendments thereto effective on the date of application for type certificate, except that compliance with later effective amendments may be elected or required pursuant to paragraphs (c), (d), and (e) of this section.

(b) If the interval between the date of application for type certificate and the issuance of the corresponding type certificate exceeds three years, a new application for type certificate shall be required, except that for applications pending on May 1, 1954, such three-year period shall commence on that date. At the option of the applicant, a new application may be filed prior to the expiration of the three-year period. In either instance the applicable regulations shall be those effective on the date of the new application in accordance with paragraph (a) of this section.

(c) During the interval between filing the application and the issuance of a type certificate, the applicant may elect to show compliance with any amendment of this part which becomes

effective during that interval, in which case all other amendments found by the Administrator to be directly related shall be complied with.

(d) Except as otherwise provided by the Board, or by the Administrator pursuant to § 1.24 of this subchapter, a change to the type certificate (see § 14.13 (b)) may be accomplished, at the option of the holder of the type certificate, either in accordance with the regulations incorporated by reference in the type certificate pursuant to § 14.13 (c), or in accordance with subsequent amendments to such regulations in effect on the date of application for approval of the change, subject to the following provisions:

(1) When the applicant elects to show compliance with an amendment to the regulations in effect on the date of application for approval of a change, he shall show compliance with all amendments which the Administrator finds are directly related to the particular amendment selected by the applicant.

(2) When the change consists of a new design or a substantially complete redesign of a major component of the propeller and the Administrator finds that the regulations incorporated by reference in the type certificate pursuant to § 14.13 (c) do not provide complete standards with respect to such change, he shall require compliance with such provisions of the regulations in effect on the date of application for approval of the change as he finds will provide a level of safety equal to that established by the regulations incorporated by reference at the time of issuance of the type certificate.

(e) If changes listed in subparagraphs (1) through (3) of this paragraph are made, the propeller shall be considered as new type, in which case a new application for type certificate shall be required and the regulations together with all amendments thereto effective on the date of the new application shall be made applicable in accordance with paragraphs (a), (b), (c), and (d) of this section.

(1) A change in number of blades;

(2) A change in the principle of pitch change operation;

(3) A change in design which the Administrator finds is so extensive as to require a substantially complete investigation of compliance with the regulations.

3. By amending § 14.12 to read as follows:

14.12 Recording of applicable regulations. The Administrator, upon the issuance of a type certificate, shall record the applicable regulations with which compliance was demonstrated. Thereafter, the Administrator shall record the applicable regulations for each change in the type certificate which is accomplished in accordance with regulations other than those recorded at the time of issuance of the type certificate. (See § 14.11.).

4. By amending § 14.13 (b) by deleting the parenthetical reference "(See also § 14.11 (a).)" at the end of the paragraph.

5. By amending § 14.13 by adding a new paragraph (c) to read as follows:

14.13 Type certificate. * * *

(c) The applicable provisions of this part recorded by the Administrator in accordance with § 14.12 shall be considered as incorporated in the type certificate as though set forth in full.

6. By amending § 14.19 to read as follows:

14.19 Changes in type design. (For requirements with regard to changes in type design and the designation of applicable regulations therefor, see § 14.11 (d) and (e), and Part 1 of this subchapter.)

7. By adding a new § 14.103 to read as follows:

14.103 Reversible propellers. Reversible propellers shall be adaptable for use with a reversing system in an airplane so that no single failure or malfunctioning of the reversing system during normal or emergency operation will result in unwanted travel of the propeller blades to a position substantially below the normal flight low-pitch stop. Failure of structural elements need not be

considered if the occurrence of such failure is expected to be extremely remote.

(Sec. 205 (a) 52 Stat. 984; 49 U.S.C. 425 (a). Interpret or apply secs. 601, 603, 52 Stat. 1007, 1009, as amended; 49 U.S.C. 551, 553)

By the Civil Aeronautics Board:

/s/ M. C. Mulligan

M. C. Mulligan
Secretary

(SEAL)

Part 14 last printed March 5, 1952.