Pt 3

FEDERAL AVIATION AGENCY
BUREAU OF FLIGHT STANDARDS
Washington 25, D. C.

March 23, 1961.

CIVIL AIR REGULATIONS DRAFT RELEASE NO. 61-5

SUBJECT: Conversion to Use of Turboprop Engines in Normal, Utility, and Acrobatic Category Airplanes

---

The Bureau of Flight Standards of the Federal Aviation Agency has under consideration an amendment of Part 3 of the Civil Air Regulations. The reasons therefor are set forth in the explanatory statement of the attached proposal which is being published in the Federal Register as a notice of proposed rule making.

The Bureau of Flight Standards desires that all persons who will be affected by the requirements of this proposal be fully informed as to its effect upon them and is therefore circulating copies in order to afford interested persons ample opportunity to submit comments as they may desire.

Because of the large number of comments which we anticipate receiving in response to this draft release, we will be unable to acknowledge receipt of each reply. However, you may be assured that all comment will be given careful consideration.

It should be noted that comments must be submitted in duplicate to the Docket Section of the Federal Aviation Agency, and in order to insure consideration must be received on or before June 1, 1961.

Oran Baker

Director
Bureau of Flight Standards

FEDERAL AVIATION AGENCY

BUREAU OF FLIGHT STANDARDS

[14 CFR Part 3]

[Regulatory Docket No. 704; Draft Release No. 61-5]

NOTICE OF PROPOSED RULE MAKING

Conversion to Use of Turboprop Engines in Normal, Utility, and Acrobatic Category Airplanes

Pursuant to the authority delegated to me by the Administrator (14 CFR 405.27), notice is hereby given that there is under consideration a proposal to amend Part 3 of the Civil Air Regulations as hereinafter set forth.

Interested persons may participate in the making of the proposed rules by submitting such written data, views, or arguments as they may desire. Communications should be submitted in duplicate to the Docket Section of the Federal Aviation Agency, Room B-316, 1711 New York Avenue, N. W., Washington 25, D. C. All communications received on or before June 1, 1961, will be considered by the Administrator before taking action upon the proposed rules. The proposals contained in this notice may be changed in the light of comments received. All comments submitted will be available, in the Docket Section, for examination by interested persons when the prescribed date for return of comments has expired.

Part 3 was amended, effective May 18, 1954, to clarify the scope and applicability of the regulations. The amendment included a requirement for application for a new type certificate for airplanes, previously

certificated under Part 3, when they were modified, among other things, by a change to engines employing different principles of operation or propulsion. Simultaneously, the same requirement was incorporated into Part 4b.

Subsequently, notice was taken of interest shown within the aviation industry in the installation of turbopropeller engines on airplanes in the transport category which were equipped with reciprocating engines. It appeared that showing of compliance with all of the latest requirements might be burdensome, impractical, and not essential to safety. It was stated, however, that in accordance with § 4b.11(e)(2), such a change would require a showing of compliance with the latest airworthiness requirements of Part 4b. This results because reciprocating and turbopropeller engines employ different principles of operation. These engines are alike in that both drive propellers and employ, therefore, the same principle of propulsion.

To cope with this problem, Special Civil Air Regulation No. SR-423 was adopted on November 15, 1957. Notwithstanding the provisions of § 4b.11(e)(2), this Special Civil Air Regulation permits the certification of a turbopropeller-powered airplane, which previously was type certificated with the same number of reciprocating engines, if compliance is shown with the airworthiness provisions applicable to the airplane as type certificated with reciprocating engines, together with certain later provisions of the Civil Air Regulations in effect on the date of application for a supplemental or new type certificate which are applicable or related to the powerplant of the turbopropeller-powered version.

The Bureau of Flight Standards now notices the same interest in the installation of turboprop engines in normal, utility, and acrobatic category airplanes presently equipped with reciprocating engines. This includes airplanes previously certificated in accordance with earlier requirements, such as Part 4a or Bulletin 7A, as well as those certificated in accordance with Part 3. In consideration of the previous action taken with respect to transport category airplanes, the Bureau believes that it might be burdensome, impractical, and not essential to safety to show compliance with all of the latest airworthiness requirements of Part 3 upon conversion of an airplane to the use of turboprop engines. The Bureau does believe, however, that later airworthiness requirements which are applicable or related to the powerplant of the turboprop version should be those in effect on the date of application for a supplemental or new type certificate together with such other requirements as are found to be otherwise related to the changes made in the engines. With respect to airworthiness requirements earlier than those of Part 3, conversion to turboprop engines, in the case of airplanes previously certificated with reciprocating engines, should continue to be treated as a major change in accordance with applicable regulations.

It is proposed, therefore, to delete from § 3.11(e)(2) the word "operation," but retain the word "propulsion." Since reciprocating and turboprop engines employ the same principle of propulsion, conversion from reciprocating to turboprop engines would not be affected by the requirement for a new type certificate. On the other hand, reciprocating

and turbojet engines employ different principles of propulsion, and conversion to the use of the latter engine would continue to require a new type certificate as in the past. The Bureau continues to believe it is necessary to retain the requirement for a new type certificate in the case of turbojet conversions.

In consideration of the foregoing, it is proposed to amend § 3.11(e)(2) of Part 3 of the Civil Air Regulations as follows:

3.11 Designation of applicable regulations. * * *

(e) * * *

(2) A change to engines employing different principles of propulsion.

This amendment is proposed under the authority of sections 313(a), 601, and 603 of the Federal Aviation Act of 1958 (72 Stat. 752, 775, 776; 49 U.S.C. 1354(a), 1421, 1423).

Oscar Babbe

Director,
Bureau of Flight Standards

Issued in Washington, D. C., on March 23, 1961.