February 15, 1946

CIVIL AERONAUTICS BOARD
WASHINGTON, D. C.

CIVIL AIR REGULATIONS DRAFT RELEASE NO. 63

SUBJECT: Certification requirements for flight engineers.

With this Draft Release the Board is circulating a proposed new Part 35 of the Civil Air Regulations, which provides for the certification of flight engineers.

The proposed new Part 35 of Civil Air Regulations - Flight Engineer Certificate - prescribes substantially the same minimum requirements which were developed in collaboration with the aviation industry in May 1945, and which are being presented to the Provisional International Civil Aviation Organization now in session at Montreal, as the United States recommendation for use as international standards.

At the present time this airman certificate is required only for implementing the regulations applying to our air carriers engaged in scheduled air transportation outside the United States. However, the adequacy of the proposed regulations as applied to scheduled operations within the United States should also be considered as the employment of larger transport aircraft and the authorization of long range flights in our domestic scheduled operations may soon make it necessary to require such airman to be included in the crew on some of the domestic air carrier operations.

In accordance with its established policy, the Board earnestly desires to secure your views regarding these proposed regulations.

Your recommendations or comment should be forwarded to the Civil Aeronautics Board, Commerce Building, Washington 25, D. C., on or before May 1, 1946.

/s/ Fred A. Toombs

Fred A. Toombs
Secretary

PART 35 - FLIGHT ENGINEER CERTIFICATES
(PROPOSED)

35.0 Certificate.
35.1 General.
35.2 Privileges and limitations.

35.0 CERTIFICATE

35.00 Issuance. A flight engineer certificate will be issued to an applicant who meets the requirements prescribed herein.

35.01 Age. 21 years.

35.02 Citizenship. A citizen of the United States or of a foreign country which grants reciprocal flight engineer privileges to citizens of the United States on equal terms and conditions with citizens of such foreign country.

35.03 Education. Read, write, speak, and understand the English language.

35.04 Physical standards. The physical standards of the third class prescribed in Part 29.

35.05 Experience.

(a) At least 4 years of practical experience in the maintenance and repair of aircraft and aircraft engines and be the holder of an aircraft and aircraft engine mechanic certificate, or hold a degree in aeronautical engineering from an institution approved by the Administrator and have had at least one year of practical experience in the maintenance and repair of aircraft and aircraft engines.

(b) At least 50 hours of flight training in the performance of the duties of a flight engineer, including procedures in the use of available power after the failure of one or more of the power plants, or be a graduate of a flight engineer course approved by the Administrator.

35.06 Knowledge. Pass a written examination on the following subjects:

(a) such provisions of Parts 40, 41, 43, 60, and 61 of the Civil Air Regulations as are pertinent to the operation of air carrier aircraft;

(b) aircraft performance with respect to placard speeds and operation in the case of partial power-plant failure;

(c) operation of power plant and mathematical computations of fuel consumption;

(d) basic meteorology with respect to power-plant operation;

(e) aircraft loading and center of gravity computations; and

(f) a general knowledge of aircraft maintenance and operating manuals and a detailed knowledge of the maintenance and operating manual or manuals relating to at least one aircraft commonly used in air transportation.

35.07 Skill. Pass a practical test in the duties of a flight engineer during flight and demonstrate competency with respect to:

(a) emergency duties in connection with a simulated power-plant failure in a multiengine aircraft, particularly during landings and take-offs;

(b) recognition of the malfunctioning of aircraft, aircraft power plants, propellers, and accessories, and the taking of appropriate action thereon;

(c) the control of center of gravity during flight by reference to load manifests and loading charts.

35.1 GENERAL

35.10 Application. Application shall be made on a form furnished by the Administrator.

35.11 Duration. A flight engineer certificate shall expire 24 calendar months after the month of issuance. (For example, a certificate issued any time in the month of April 1945 will expire on the last day of April 1947.)

35.12 Renewal. Application for renewal of a flight engineer certificate shall be made on a form furnished by the Administrator and may be mailed or presented to a representative of the Administrator within 60 days prior to the month of expiration.

35.13 Reinstatement. An expired flight engineer certificate may be reinstated within 24 calendar months after the date of expiration upon application and satisfactory demonstration to a representative of the Administrator that he is thoroughly familiar with all current information required of a flight engineer with respect to the maintenance of air carrier aircraft and the operating procedures used in air carrier operations.

35.14 Surrender. Any flight engineer shall, upon request, deliver his certificate to the Administrator if it has been suspended or revoked.

35.15 Reexamination. Applicants who have failed in any examination may apply for reexamination on the part failed after 30 days from the date of such failure.

35.2 PRIVILEGES AND LIMITATIONS

35.20 Certificate possession.* A flight engineer, when serving as such, shall have in his possession his flight engineer certificate and his medical certificate or other evidence satisfactory to the Administrator showing that he has met the physical requirements appropriate to his certificate within the preceding 12 calendar months.

35.21 Operation during physical deficiency.* A flight engineer shall not serve as such in any aircraft during the period of any known physical deficiency which would render him unable to meet the physical requirements prescribed for the issuance of his currently effective medical certificate.

35.22 Recent experience.* A flight engineer shall not serve as such in any aircraft in scheduled air transportation unless he has served in that capacity for at least 3 months within the preceding 12 calendar months and has demonstrated his proficiency to a company check pilot for the aircraft to which he is assigned, or has demonstrated his continued proficiency to a representative of the Administrator or to a person designated by the Administrator for that purpose.

*These operational rules have been included in this Part for study and comment and may subsequently be deleted from this Part and placed in Parts 41 and 61.