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Regulation No. SR-411

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

Effective: July 1, 1955
Adopted: June 30, 1955

SPECIAL CIVIL AIR REGULATION

TRIAL OPERATION OF TRANSPORT CATEGORY AIRPLANES
IN CARGO SERVICE AT INCREASED ZERO FUEL AND LANDING WEIGHTS

On July 21, 1954, the Board issued Order No. S-630 granting the request of The Flying Tiger Line Inc., for a waiver of certain structural provisions of Part 4b of the Civil Air Regulations. On November 19, 1954, and on January 24, 1955, the Board issued similar orders, Nos. S-653 and S-663, to Slick Airways, Inc., and American Airlines, Inc., respectively. These three orders permit, for a trial period ending June 30, 1955, the operation of DC-6A airplanes in cargo service at weights in excess of those permitted in passenger service. The weights involved are the zero fuel weight (maximum weight of the airplane with no disposable fuel and oil) and the structural landing weight. The use of the higher weights was made contingent upon certain findings by the Administrator and upon certain conditions of operation and inspection.

In issuing the first waiver the Board considered that the results of the trial operations authorized on a limited scale thereby could serve to ascertain the validity of the evaluation used in justifying such trial operations and could contribute further information on whether the operating stress levels imposed on the airplane's structure are within safe limits for continued operations. The Board also envisaged that successful experience with such trial operations could eventually lead to the establishment of a sound basis for differentiating between standards for passenger and cargo air carrier operations.

It is believed that a more extensive background of operating experience will be necessary to assure that the conditions in the waivers do in fact provide a sound basis for establishing future standards for airplanes in cargo operations at increased weights. In view of the variation in design and strength characteristics of the different types of transport category airplanes, it would be desirable if the experience gained were to include trial operations with several of the different types of airplanes to ascertain that these variations will not result in unsafe conditions. Experience to date with the one type of airplane operating under the conditions of the waivers has resulted in no indication of structural distress which would reflect adversely on these conditions. This

experience is regarded as providing sufficient justification for permitting other types of transport category airplanes to engage in trial operations. In this regard, the Board has been advised by the manufacturers of their belief that most of the existing transport category airplanes meet satisfactorily the terms of the structural waiver with respect to such items as strength and sudden fatigue failure.

In order to facilitate the accumulation of the necessary operating experience, it is believed appropriate to extend the terms of the existing waivers so as to permit any number of any type of transport category airplane to be operated at increased zero fuel and structural landing weights in cargo service for a period of two years. During this period the Board expects interested persons to submit their evaluation of the trial operations and recommendations resulting therefrom with respect to future regulatory action.

It is envisioned that most of the airplanes taking advantage of this regulation will continue to be used in cargo service. However, if any of the airplanes operated under the provisions of this regulation are to be made eligible at any later time for passenger service, the provisions of this regulation require accomplishment of a special inspection and an evaluation of the fatigue limitations. It is suggested that, if it is contemplated to return the airplane to passenger service, the establishment of special inspections and the evaluation of the fatigue limitations be accomplished prior to increasing the airplane weight for cargo service.

Interested persons have been afforded an opportunity to participate in the making of this regulation 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 July 1, 1955.

Notwithstanding the applicable structural provisions of the Civil Air Regulations, any air carrier may operate transport category airplanes which were certificated under the provisions of Part 4a or 4b in cargo service only, subject to the conditions hereinafter set forth:

- (1) The air carrier shall submit an application to the Administrator indicating its desire to operate its airplane(s) under the provisions of this special regulation, and indicating which airplane(s) would be involved.

- (2) The air carrier shall furnish a statement from each manufacturer for each type of airplane involved indicating in each case that the airplane manufacturer approves the operation of such type of

airplane under the provisions of this regulation and that the airplane manufacturer will establish the inspection procedure prescribed in paragraph (4) of this Special Civil Air Regulation and will supervise such inspection as necessary.

(3) The zero fuel weight (maximum weight of the airplane with no disposable fuel and oil) and the structural landing weight may be increased beyond the maxima approved in full compliance with the applicable Civil Air Regulations: Provided, That the Administrator of Civil Aeronautics finds that the increase in either such weight is not likely to reduce seriously the structural strength, that the probability of sudden fatigue failure is not noticeably increased, and that the flutter, deformation, and vibration characteristics do not fall below those required by the Civil Air Regulations: And provided further, That any increase in the zero fuel weight approved shall not exceed 5 percent and that the increase in the structural landing weight shall not exceed the amount, in pounds, of the increase in the zero fuel weight.

(4) Airplanes for which the increased weights become effective shall be subject to inspections in addition to those normally performed, such inspections to be established by the manufacturer of the type airplane concerned, subject to the approval of the Administrator of Civil Aeronautics and to be supervised as found necessary by that manufacturer, to safeguard against possible structural distress resulting from the higher operating stress levels. Results of such inspections shall be reported to the Administrator of Civil Aeronautics at such times as he shall establish.

(5) Airplanes for which the increased weights become effective shall be operated in accordance with the transport category performance operating limitations prescribed in Part 40, 41, or 42 of the Civil Air Regulations, whichever is applicable.

(6) The air carrier shall keep and make available, upon request, to the Civil Aeronautics Board, the Administrator of Civil Aeronautics, or the manufacturer of the type airplane concerned, records of all flights conducted with airplanes for which the increased weights become effective, such records to include the actual take-off, zero fuel, and landing weights.

(7) The Airplane Flight Manual of each airplane operating under the provisions of this special regulation shall be appropriately revised so as to include the necessary operating limitations and operating information.

(8) An airplane which has been operated at increased weights under the provisions of this regulation shall not be used for the carriage of passengers, except under the following conditions:

(a) Special inspections established by the manufacturer and approved by the Administrator of Civil Aeronautics shall have been accomplished.