SPECIAL CIVIL AIR REGULATION NO. SR-411B

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(27 F.R. 6321)

Operation Of Certain Transport Category Airplanes in Cargo Service at Increased Zero Fuel and Landing Weights

The Federal Aviation Agency published as a notice of proposed rule making (27 F.R. 3890) and circulated as Civil Air Regulations Draft Release No. 62-18 dated April 19, 1962, a proposed Special Civil Air Regulation to permit certain transport category airplanes to be operated in cargo service at increased zero fuel and landing weights. The proposed regulation was intended to supersede Special Civil Air Regulation No. SR-411A, which contains a termination date of June 30, 1962.

Trial operations of cargo airplanes (Douglas DC-6A) at increased weights were first authorized in waivers issued by the Civil Aeronautics Board to individual air carriers. The first such waiver was issued on July 21, 1954. The weights involved were the zero fuel weight (i.e., the maximum weight of the airplane with no disposable fuel and oil, which has the effect of limiting the weight of the fuselage contents) and the structural landing weight. The weight increases were limited to not more than 5 percent of the zero fuel weight approved for passenger operations, and their use was made contingent upon certain findings by the Administrator of Civil Aeronautics and upon certain conditions of operation, inspections, and reporting. Authorization of the trial operations was predicated on the premise that such operations could eventually lead to the establishment of a sound basis for differentiating between standards for passenger and cargo air carrier operations. Based upon the trial operations under the waivers, the Board determined that a more extensive background of operating experience was necessary. This led to the promulgation of Special Civil Air Regulation No. SR-411 (20 F.R. 4765) which permitted any number of any type of transport category airplane to be operated by any air carrier at increased weights in cargo service.

From the data submitted by the operators in accordance with SR-411, the Board concluded that the scope of operations under SR-411 had been such that substantiation of the conditions for these operations for inclusion in the regulations on a permanent basis would entail a long-range program. The Board, therefore, extended the trial operations by adopting SR-411A on June 28, 1957 (22 F.R. 4684), with a termination date of June 30, 1962.

SR-411A is applicable to airplanes certificated under the transport category airworthiness requirements effective before March 13, 1956. The applicability was so limited because the Board believed it advisable to gain some experience with the airplanes certificated under the provisions of Part 4b effective on and after March 13, 1956, at the normal transport

category weights before permitting such airplanes to operate at increased weights. In arriving at this conclusion, the Board took into consideration the new concept of structural design requirements as well as other related changes in these requirements which were introduced in Part 4b on March 13, 1956.

As the preambles to both SR-411 and SR-411A indicated, the purpose in permitting the trial operation of transport category airplanes in cargo service at the arbitrary increased zero fuel and landing weights was to determine through operating experience whether the conditions governing the trial operations would provide a sound basis for establishing future standards for airplanes in cargo operations at increased weights. During the approximately seven years that these trial operations have been conducted, a substantial amount of data has been amassed concerning the airplanes approved for operation under these Special Civil Air Regulations.

The data submitted and the operating experience gained under SR-411 and SR-411A indicate that the airplanes approved for and operated at the increased weights can continue to be operated at such increased weights under certain conditions without adverse effect upon the safety of such airplanes. The inspection reports submitted by the operators under SR-411 and SR-411A have not indicated any serious structural difficulties resulting from operation at the increased weights. The service history of these airplanes with respect to fatigue cracks and other damage is similar to that for airplanes of the same type operated in passenger service. Furthermore, cargo operators have expressed a need to continue operation of these airplanes at the increased weights in their cargo operations. Therefore, Draft Release 62-18 proposed to extend the provisions of SR-411A indefinitely to the types of airplanes that have been qualified and operated at such weights. However, the proposal did not specify the particular models of the various types approved for increased weights under SR-411 and SR-411A. Furthermore, it has subsequently been determined that the L-1649A airplane as modified under supplemental type certificate SA 4-1402 has been approved for operation and has been operated under the provisions of SR-411A. While the application for the type certificate for this airplane was filed in 1955, the manufacturer elected to comply with the later requirements of Part 4b rather than those in effect at the time of his application for type certificate. Subsequently, a supplemental type certificate was issued covering a modification to this airplane based on a demonstration of compliance with the requirements in effect on the date of the application for the type certificate for the airplane. Since this modified airplane was certificated in accordance with the provisions of Part 4b, effective prior to March 13, 1956, it is included in the airplanes permitted to be operated under the terms of this special regulation.

One of the comments received in response to Draft Release 62-18 expressed opposition to the proposed indefinite extension of SR-411A on the grounds that there should be one set of safety standards for the design and operation of all transport category airplanes without regard as to whether the airplane is used for the carriage of cargo or passengers. In this respect, it shoud be noted that the airplanes covered

under this regulation are the airplanes which have been operated for the carriage of cargo at the increased weights without any adverse effect on safety, and that the special inspections conducted by the operators have not indicated any serious structural problems with respect to these airplanes operated at the increased weights as compared with airplanes operated in passenger operations. Furthermore, this regulation requires operators to continue these special inspections. Consequently, the Agency does not believe that it would be justified in arbitrarily terminating the authorization to operate such airplanes at the increased weights.

On the other hand, the majority of the comments received in response to Draft Release 62-18 concurred in the proposed regulation and at the same time recommended that various airplanes other than those covered in the proposal be permitted to operate in cargo service at the aribitrary increased weights. Numerous and detailed arguments have been presented in support of these recommendations for broadening the scope of the proposal. However, these recommendations require consideration of matters which go beyond the scope of the proposed regulation, and there is not sufficient time remaining prior to the expiration of SR-411A for the necessary evaluation of such matters. Therefore, the regulation is being adopted substantially as proposed and further study will be given to such recommendations insofar as they might indicate a need for additional rule making action on this matter.

In view of the foregoing, the special regulation set forth hereinafter permits only those airplane types and models which were approved for trial operations under SR-411 and SR-411A to be used in the carriage of cargo with the arbitrary increased weights.

This regulation relaxes the provisions of SR-411A to the extent that it also applies to foreign air carriers operating the specified airplanes. The provisions of SR-411A were made applicable only to United States air carriers because the conditions for the trial operations required close cooperation between the manufacturer, operator, and the Civil Aeronautics Administration during the initial technical evaluation and in the inspection and reporting procedures. However, since this regulation permits the continued use of increased weights only for those type airplanes previously approved for operation under SR-411A, for which the necessary data and procedures are already available, the increased weights can now be made applicable to any foreign air carrier using airplanes of the specified types in the carriage of cargo only.

This regulation continues the requirement contained in SR-411A that airplanes used by air carriers at the increased weights be operated in accordance with the passenger-carrying transport category operating limitations of Part 40, 41, or 42, as the case may be. In addition, foreign air carriers are permitted to operate airplanes under the authority of this regulation if the country of registry of the airplanes requires such airplanes to be operated in accordance with the performance operating limitations applicable to United States air carriers or the equivalent thereof. The requirement that air carriers must operate their airplanes under the provisions of the regulation in accordance with the passenger-carrying performance operating limitations prescribed in Part 40, 41, or 42 is considered necessary in the interest of safety. Therefore, in order

to insure an equivalent level of safety for operations by foreign air carriers, it is considered appropriate to permit such carriers to operate airplanes under the authority of this regulation only on the condition that the country of registry of the airplanes requires that such airplanes be operated in accordance with the same or equivalent performance operating limitations.

This regulation also continues the requirement for special inspections, including the special inspections required prior to returning an airplane from cargo to passenger service. However, in view of the volume of data now available for the eligible airplane types, it no longer requires special reports and records be kept with respect to operations at increased weights. Based on experience gained under SR–411 and SR–411A, it is believed that intermittent cargo-passenger operations can now be permitted provided the special inspection is made each time the airplane is returned to passenger service.

This regulation contains a proviso, similar to that which appears in SR–411A, requiring a determination that any increase in the zero fuel and landing weights for the specified airplanes does not seriously affect the strength, fatigue, flutter, deformation, or vibration characteristics of such airplanes. While not proposed in Draft Release 62–18, the Agency is now of the opinion that even though such a determination has already been made for the increased weights presently authorized for the specified airplanes, such a requirement should be continued in effect to cover possible modifications to these airplanes as well as further increases in the approved weights. Since this provision merely continues in effect a provision currently applicable to the specified airplanes and imposes no additional burden on any person, notice and public procedure thereon are unnecessary for its adoption as part of this regulation.

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 extends many of the provisions of a currently effective regulation which expires on June 30, 1962, imposes no additional burden on any person, and a delay in its effectiveness would impose a hardship on the cargo operators, good cause exists for making it effective on less than 30 days' notice.

In consideration of the foregoing, the following Special Civil Air Regulation is adopted to become effective on June 30, 1962:

Notwithstanding the applicable structural provisions of the Civil Air Regulations, any air carrier or foreign air carrier may operate, for the carriage of cargo only, the transport category airplanes specified in paragraph (1) of this regulation, at increased zero fuel and landing weights, under the conditions specified in paragraphs (2) through (6) of this regulation.

(1) Transport category airplanes certificated under the provisions of Part 4b, effective prior to March 13, 1956, as follows:

(a) DC–6A, DC–6B, DC–7B, DC–7C; and

(b) L–1049B, C, D, E, F, G, H, L–1649A when modified in accordance with supplemental type certificate SA 4–1402.

(2) 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 maximum approved in full compliance with the applicable Civil Air Regulations: *Provided,* That any increase in the zero fuel weight 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 zero fuel weight: *And provided further,* That the Administrator 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 applicable Civil Air Regulations. All other weight limitations established in accordance with the Civil Air Regulations applicable to the type airplane shall apply.

(3) Each airplane shall be inspected in accordance with the special inspection procedures for operations at increased weights established and issued by the manufacturer of the particular type airplane and approved by the Administrator.

(4) Each airplane operated by an air carrier under this regulation shall be operated in accordance with the passenger-carrying transport category performance operating limitations prescribed in Part 40, 41, or 42. Operation of airplanes by a foreign air carrier is not permitted under the authority of this regulation unless the country of registry requires the airplanes to be operated in accordance with such performance operating limitations or the equivalent thereof.

(5) The Airplane Flight Manual for each airplane operated under the provisions of this regulation shall be appropriately revised to include the operating limitations and information required for operation with the increased weights.

(6) An airplane operated at increased weights under the provisions of this regulation shall be inspected in accordance with the special inspection procedures for return to passenger service established and issued by the airplane manufacturer and approved by the Administrator, before it is used in passenger service, except as provided for the carriage of persons under Special Civil Air Regulation No. SR–432A.

This regulation supersedes Special Civil Air Regulation No. SR–411A.