41-12

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

Civil Air Regulations Amendment 41-12
Effective: May 18, 1954
Adopted: April 13, 1954

CERTIFICATION AND OPERATION RULES FOR SCHEDULED AIR CARRIER OPERATIONS OUTSIDE THE CONTINENTAL LIMITS OF THE UNITED STATES

EN ROUTE LIMITATIONS

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Currently effective section 41.30 pertaining to en route limitations with two engines inoperative, permits the assumption that the second engine will become inoperative 90 minutes after the point of departure. This could lead to an unsafe operation in long overwater flights. The present requirements are not clear also with respect to the rate of climb required when the failure of the engines occurs at an altitude which is above the minimum prescribed altitude. This amendment clarifies these provisions by prescribing that both engines must be considered to fail simultaneously at the point along the route which has the most critical effect on the take-off weight. It also prescribes that if the altitude at which engine failure occurs is above the minimum prescribed altitude, a descent may be assumed to an altitude at which the rate of climb is zero, provided that the latter is sufficiently above the minimum prescribed altitude to assure compliance, during the subsequent portion of the flight, with the prescribed rate of climb at the prescribed minimum altitude.

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 41 of the Civil Air Regulations (14 CFR, Part 41, as amended) effective May 18, 1954:

By amending § 41.30 (c) to read as follows:

41.30 En route limitations. * * *

(c) Airplanes with four or more engines; two engines inoperative. The provisions of this paragraph shall apply only to airplanes certificated in accordance with the performance requirements of Part 4b of this subchapter. No airplane having four or more engines shall be flown along an intended track, except under the conditions of either subparagraph (1) or subparagraph (2) of this paragraph.

(1) No place along the intended track shall be more than 90 minutes away from an available landing area at which a landing can be

made in accordance with the requirements of § 41.34, assuming all engines to be operating at cruising power.

(2) The take-off weight shall not be greater than that which would permit the airplane, with the two critical engines inoperative, to have a rate of climb in feet per minute equal to 0.01 V_{so}^2 (V_{so} being expressed in miles per hour) along all points of the route, from the point where the two engines are assumed to fail simultaneously to the landing area, either at an altitude of 1,000 feet above the elevation of the highest ground or obstruction within 10 miles on either side of the intended track or at an altitude of 5,000 feet, whichever is higher. The point where the two engines are assumed to fail shall be that point along the route which is most critical with respect to the take-off weight. In showing compliance with this prescribed rate of climb, the following shall apply:

(i) It shall be permissible to consider that the weight of the airplane as it proceeds along its intended track is progressively reduced by normal consumption of fuel and oil with all engines operating up to the point where the two engines are assumed to fail and with two engines operating beyond that point.

(ii) Where the engines are assumed to fail at an altitude above the prescribed minimum altitude, compliance with the prescribed rate of climb at the prescribed minimum altitude need not be shown during the descent from the cruising altitude to an altitude at which the rate of descent becomes zero, if the latter is sufficiently above the prescribed minimum altitude to assure compliance with the prescribed rate of climb at the prescribed minimum altitudes during the subsequent portion of the flight.

(iii) If fuel jettisoning is provided, the airplane's weight at the point where the two engines are assumed to fail shall be considered to be not less than that which would include sufficient fuel to proceed to an available landing area at which a landing can be made in accordance with the requirements of § 41.34 and to arrive there at an altitude of at least 1,000 feet directly over the landing area.

(Sec. 205 (a) 52 Stat. 984; 49 U.S.C. 425 (a). Interpret or apply secs. 601, 604, 52 Stat. 1007, 1010, as amended; 49 U.S.C. 551, 554)

By the Civil Aeronautics Board:

/s/ M. C. Mulligan

M. C. Mulligan
Secretary

(SEAL)

Part 41 last printed November 15, 1949.