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

Civil Air Regulations Amendment 40-10
Effective: February 13, 1958
Adopted: January 9, 1958

SCHEDULED INTERSTATE AIR CARRIER CERTIFICATION AND OPERATION RULES

LANDING FLARE REQUIREMENTS

Part 40 of the Civil Air Regulations currently requires that civil aircraft carrying passengers for hire at night shall be equipped with specified types and numbers of landing flares.

The value of landing flares as required equipment was discussed at the Board's 1955 Annual Airworthiness Review. Recommendations were made at that time to amend the regulations to require the carriage of flares only in large aircraft in extended overwater operations. As a result of this discussion and further study by the Board, Civil Air Regulations Draft Release No. 56-31, "Landing Flare Requirements of Parts 40, 41, 42, and 43 of the Civil Air Regulations," was circulated to the public (21 F.R. 10255). This notice, which proposed the deletion of the flare requirement, was issued for the purpose of obtaining the views of all interested persons to assist the Board in making a complete re-evaluation of existing flare requirements.

Comment received from interested persons concerning the proposals to delete all flare requirements (as contained in Draft Release 56-31) was varied. The consensus was that landing flare requirements for all non-commercial operations and for operations which employ small aircraft for the carriage of passengers for compensation or hire should be deleted. In this connection, it should be noted that Civil Air Regulations Draft Release No. 55-24, "Air Taxi Certification and Operation Rules" (small aircraft of 12,500 pounds or less maximum certificated take-off weight), did not propose flares as required equipment and no adverse comment was received on this proposal. With respect to air carrier operations, the Air Line Pilots Association, on behalf of the pilots, recommended the retention and improvement of flares. This position was also advanced by a manufacturer of flare equipment. The Aircraft Industries Association, on behalf of the aircraft manufacturers, and the Air Transport Association, on behalf of the scheduled air carriers, recommended deletion of the flare requirements. The Civil Aeronautics Administration did not object to the deletion of flare requirements for overland operations but did recommend their retention for overwater operations.

In support of the recommendations to retain flares, the following opinions were expressed. One was that flares insure the highest possible level of safety during emergency landings at night (including emergency landings made necessary by severe vibration or buffeting, failure of aircraft components, uncontrollable fires, or the evaluation of sea conditions preparatory to ditching). It was also the view of some persons that flares might become necessary to assist in night emergency landings resulting from possible fuel exhaustion, the cause of which could be mechanical difficulties, traffic delays, communications and navigational equipment and facilities failures, and unexpected adverse weather conditions. It was also recommended that flares should be improved to provide better ground illumination and longer burning capacity to make them more effective for use in the emergency situations described above. Other comment in support of retention of flares stressed the view that safety of air carrier operations would be jeopardized if flares are not carried in overwater operations.

The Board has carefully studied this entire matter and finds that available records concerning the use of landing flares in scheduled air carrier operations show only five instances from January 1938 to the present time in which flares have been used for emergency purposes. Four of these instances involved twin-engine aircraft and one involved a four-engine aircraft. From 1947 to the present time, no multiengine air carrier aircraft has been involved in the dropping of landing flares for emergency purposes. There is no available evidence or data showing the effective use of landing flares in the operation of small passenger-carrying airplanes. Furthermore, the records reveal that in 55 reported instances landing flares were discharged inadvertently while the airplane was on the ground or in the air with resultant damage in many cases to the aircraft, other aircraft, ramps, and hangars. There have been instances where flares contributed to the intensity of a fire following a crash. It is also significant that the military services discontinued the carriage of flares in their passenger transport operations several years ago for reasons involving cost, maintenance, the hazard of carrying flares and their questionable value under emergency conditions. Furthermore, the flare requirements, which have been in effect for many years, were promulgated at a time when most airplanes had a single engine with only a short operating range, when most airports or landing areas were unlighted, and the general reliability of aircraft was considerably less than that of aircraft

which are presently utilized. In recent years, improved airplane performance, reliability, and operating range, more efficient airplane landing lights, a considerable increase in the number of lighted landing areas, and the development of more accurate and dependable commmnications and navigational aids have clearly minimized the need for landing flare installations in aircraft operations. The Board finds, however, that these developments which have greatly improved operations in the United States do not apply to the same degree in extended overwater operations.

The Board has carefully considered all of the comment received and other relevant information and has concluded that flares for passenger-carrying aircraft should not be required as mandatory safety equipment for operations conducted within the United States. It does find, however, that there is a continued need for their use in extended overwater operations.

Interested persons have been afforded an opportunity to participate in the making of this amendment (21 F.R. 10255), and due consideration has been given to all relevant matter presented.

In consideration of the foregoing, the Civil Aeronautics Board hereby amends Part 40 of the Civil Air Regulations (14 CFR Part 40, as amended) effective February 13, 1958.

By amending § 40.200 (d) by adding after the word "flares" the words "for extended overwater operations."

(Sec. 205 (a), 52 Stat. 984; 49 U.S.C. 425. Interpret or apply secs. 601, 603, 52 Stat. 1007, 1009, as amended; 49 U.S.C. 551, 553)

By the Civil Aeronautics Board:

/s/ M. C. Mulligan

M. C. Mulligan
Secretary

(SEAL)

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