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

Civil Air Regulations Amendment 41-6
Effective: November 28, 1955
Adopted: November 28, 1955

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

EMERGENCY AND EVACUATION EQUIPMENT AND PROCEDURES

Currently effective provisions of Part 41 of the Civil Air Regulations contain certain requirements for emergency and evacuation equipment and procedures. This amendment requires air carriers operating pursuant to Part 41 to make certain additional provisions with respect to emergency and evacuation equipment and procedures.

The necessity for these additional provisions was indicated following the Board's investigation of several air carrier accidents and they have been under consideration for some time. These matters were the substance of a notice of proposed rule making which was published in the Federal Register (17 F. R. 8022) and circulated as Civil Air Regulations Draft Release No. 52-26 dated August 29, 1952. As a result of comment received, it appeared desirable to arrange a meeting with representatives of industry to discuss particular issues. Such a meeting was held in Washington, D. C., on November 25, 1952, at which the general intent of each proposal was thoroughly discussed and specific changes in the wording of the rules were proposed.

As a result of comment received in response to Draft Release No. 52-26 and the discussions at the subsequent industry meeting, the proposals were revised and a new notice of proposed rule making was published in the Federal Register (18 F. R. 4744) and circulated as Civil Air Regulations Draft Release No. 53-15 dated August 10, 1953. Since a substantial lapse of time occurred following the issuance of Draft Release No. 53-15, and because of the changes made as a result of comment received on the revised proposals, the Board decided to publish the proposed rules again prior to taking any final action. Accordingly, the proposed rules were published in the Federal Register (20 F. R. 1016) and circulated as Civil Air Regulations Draft Release No. 55-5 dated February 10, 1955. The comment received in response thereto has been considered by the Board in the drafting of this amendment. The following are summaries of the regulatory changes made by this amendment:

1. Means of emergency evacuation. There are no requirements in Part 41 of the Civil Air Regulations for evacuation equipment to assist passengers in evacuating an airplane on the ground. Experience has shown, however, that in certain instances it is essential that some means be provided in addition to those required by the applicable airworthiness requirements. Accordingly, this amendment requires that at all emergency exits which are more than 6 feet from the ground means be provided to assist the occupants in descending from the airplane. At floor level exits approved as emergency exits, such means for emergency evacuation shall be a chute or an equivalent device which will be suitable for the rapid evacuation of passengers. The Board intends that this means shall be in a position for ready use during flight time (as defined by the Civil Air Regulations, "Flight Time" includes that time during which the airplane is taxiing) and so located that it will not create a hazard by obstructing any emergency exit. As an example, certain of the air carriers have already installed chutes immediately above exit doors or on brackets attached to the fuselage immediately adjacent to the doors. An approved chute so located is in a position for "ready use" within the meaning of the new section.

2. Interior emergency exit markings. At the present time Part 41 requires that emergency exits for airplanes carrying passengers be clearly marked as such with luminous paint in letters not less than 3/4 inches high, such markings to be located either on or immediately adjacent to pertinent exits and readily visible to passengers. Location and method of operation of the handles are required to be marked with luminous paint. The Board does not consider that these requirements are adequate to ensure that in case of a crash landing or ditching at night the passengers and crew would be able to identify and operate emergency exits. This amendment, therefore, provides that for all air carrier passenger airplanes lights be installed so as to illuminate all emergency exits in such a manner as to attract the attention of the occupants of the airplane at night. It is further required that these lights be equipped with an integral energy supply system. Since Draft Release No. 55-5 was circulated, the Board has determined that a light designed only for manual operation, if designed to withstand the impact forces of a crash landing and continue operation, will serve as a suitable alternative to an automatic light to provide emergency lighting at those times when it is most likely to be needed. Accordingly, this amendment requires that these lights either (1) be designed to function automatically in the event of a crash landing and to continue to function thereafter and also be operable manually, or (2) be designed only for manual operation and also to continue to function after a crash landing. When such lights require manual operation to function, they must be turned on prior to each night take-off and landing. With respect to the automatic light, any approved system, whether it is designed to operate

as a result of inertia forces or upon failure of the main electrical system, will be satisfactory as long as it meets the two requirements; namely, it will function automatically in the event of a crash landing and continue to function thereafter, and it is also operable manually.

3. Equipment for extended overwater operations. This amendment modifies and expands the current provisions to require scheduled air carriers in extended overwater operations to have on their airplanes suitable equipment in the form of life vests, life rafts, signaling devices, and survival kits. This equipment is required to be installed in conspicuously marked approved locations where it will be easily accessible in the event of ditching.

An intensive investigation of ditching operations, including tests of life-raft capacity, has recently been conducted by the Civil Aeronautics Administration and the United States Navy in cooperation with other government agencies and interested aeronautical organizations. The Board has been advised that analysis of the results of these tests has not yet been accomplished. Consequently, as indicated in Draft Release No. 55-5, pending development of satisfactory criteria of life-raft capacity, the Board is not taking any action at this time to require that such life rafts possess sufficient maximum capacity to accommodate all occupants in the event of a loss of one life raft of the largest capacity on board. In view of the foregoing, this amendment does not change the requirement that airplanes on extended overwater flights carry life rafts sufficient in number and of such rated capacity as to accommodate all occupants of the airplane.

The Board is also concerned by the lack of any current requirement that life jackets and life rafts be equipped with a means of illumination which would materially assist in the rescue of persons from the water at night. Although such a light is not yet available, the Board has recently been informed that progress is being made toward the development of a serviceable, reliable, lightweight, inexpensive light of indefinite shelf life, adaptable to such use. Therefore, the Board will consider further whether a means of illuminating life jackets and life rafts should be required when it has determined that developments are sufficiently mature to warrant such action.

The Board has carefully studied the various proposals submitted with respect to a definition of extended overwater operation as applied to scheduled and irregular operations and considers that the distance of 50 miles is a reasonable measure of such operations. Since there may exist particular operations which would require or permit some flexibility in the administration of the rule, the Administrator is authorized to require the carriage of all of the prescribed equipment, or any item thereof, for any operation over water if he finds that the standards of safety appropriate for air carrier operations so require. The rule also permits the Administrator to determine, upon application of an air carrier, how much, if any, of the equipment will be required for each extended overwater operation. Unless otherwise specified by the Administrator, the equipment required herein will be carried in all extended overwater operations.

4. Assignment of emergency evacuation functions for each crew member. This amendment requires each air carrier to assign emergency functions for each crew member to perform in the event of circumstances requiring emergency evacuation. The objective of this requirement is to assure that each crew member will know, and be able to perform, those basic functions which are necessary in order to accomplish an emergency evacuation. The "emergency" for which this rule requires each crew member to be prepared is that of evacuating the airplane. Although innumerable types of emergencies may arise in flight which may necessitate an emergency evacuation of an airplane, the Board is of the opinion that the procedures to be followed in evacuating an airplane remain limited in number. Therefore, it is considered reasonable, and it is the intent of this rule, to require that each crew member be prepared to perform emergency evacuation functions when necessitated by various general situations; for example, ditching, fire in flight, and landing gear collapse. This rule will not, of course, limit the authority of the pilot in command over crew members with respect to the assignment of duties under the particular conditions of an emergency.

The Board has always based its rules on the premise that wherever possible the air carrier should be responsible for assigning crew duties. It has been brought to the attention of the Board, however, that in certain instances crew duties are not sufficiently delineated and crew training programs are not sufficiently complete to provide proper coordination of the crew in the event of a crash landing or ditching. The Board considers that it is necessary to ensure that assigned crew duties are realistic, and do not, for example, require an individual to be assigned certain tasks which are not probable of accomplishment under the conditions anticipated. Therefore, these functions are required to be listed in the air carrier manual and all crew members must be made thoroughly familiar with them during both initial and recurrent training. In addition, the air carrier must show that the functions so assigned are practicable of accomplishment.

5. Briefing of passengers. This amendment requires each air carrier engaged in extended overwater operations to establish a procedure for orally briefing passengers in order to ensure that they will be familiar with the location and method of operation of life vests and emergency exits, and the location of life rafts. Such briefing must include a demonstration of donning life jackets.

The Board considers that it is in the public interest to attain the increased safety sought by these rules at the earliest opportunity. At the same time it recognizes that certain of the requirements involving physical changes to airplane structures and the procurement of additional equipment would be unduly burdensome unless an appropriate period of time for planning, procurement, and installation is allowed. Accordingly, a majority of these rules need not be complied with for approximately 18 months. However, the rules involving procedures only must be complied with in approximately 6 months.

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. Since this amendment contains rules which need not be complied with for at least 6 months, it may be made effective immediately.

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 November 28, 1955:

1. By amending § 41.23 to read as follows:

41.23 Emergency and safety equipment. After May 31, 1957, the equipment required in §§ 41.23b, 41.23c, and 41.23d shall be approved by the Administrator.

2. By adding new §§ 41.23b, 41.23c, and 41.23d to read as follows:

41.23b First-aid kits and emergency equipment. Each airplane shall be equipped with a conveniently accessible first-aid kit adequate for the type of operation involved. Airplanes scheduled over routes requiring flights for long distances over uninhabited terrain must carry such additional emergency equipment as appropriate for the particular operation involved.

41.23c Equipment for overwater operations.

(a) The following equipment shall be required for all extended overwater operations: Provided, That the Administrator, after appropriate investigation, may (1) require the carriage of all of the prescribed equipment, or any item thereof, for any operation over water, or (2) upon application of an air carrier, permit deviation from these requirements for a particular extended overwater operation:

(1) Life vest or other adequate individual flotation device for each occupant of the airplane;

(2) Life rafts sufficient in number and of such rated capacity and buoyancy as to accommodate all occupants of the airplane;

(3) Suitable pyrotechnic signaling devices; and

(4) One portable emergency radio signaling device, capable of transmission on the appropriate emergency frequency or frequencies, which is not dependent upon the airplane power supply and which is self-buoyant and water-resistant.

(b) All required life rafts, life vests, and signaling devices shall be easily accessible in the event of a ditching without appreciable time for preparatory procedures. After May 31, 1957, this equipment shall be installed in conspicuously marked locations approved by the Administrator.

(c) A survival kit, appropriately equipped for the route to be flown, shall be attached to each required life raft.

41.23d Emergency evacuation equipment.

(a) Means for emergency evacuation. After May 31, 1957, on all passenger-carrying airplanes, at all emergency exits which are more than 6 feet from the ground with the airplane on the ground and with the landing gear extended, means shall be provided to assist the occupants in descending from the airplane. At floor level exits approved as emergency exits, such means shall be a chute or equivalent device suitable for the rapid evacuation of passengers. During flight time this means shall be in a position for ready use: Provided, That the requirements of this paragraph do not apply to emergency exits over the wing where the greatest distance from the lower sill of the exit to the wing surface does not exceed 36 inches.

(b) Interior emergency exit markings.

(1) After May 31, 1957, all emergency exits, their means of access, and their means of opening shall be marked conspicuously. The identity and location of emergency exits shall be recognizable from a distance equal to the width of the cabin. The location of the emergency exit operating handle and the instructions for opening shall be marked on or adjacent to the emergency exit and shall be readable from a distance of 30 inches by a person with normal eyesight.

(2) After May 31, 1957, for night operations, a source or sources of light, with an energy supply independent of the main lighting system, shall be installed to illuminate all emergency exit markings. Such lights shall be designed to function automatically in a crash landing and to continue to function thereafter and shall also be operable manually, or shall be designed only for manual operation and also to continue to function following a crash landing. When such lights require manual operation to function, they shall be turned on prior to each night take-off and landing.

3. By amending § 41.126 to read as follows:

41.126 Assignment of emergency evacuation functions for each crew member. After May 31, 1956, each air carrier shall assign all necessary emergency functions for each crew member to perform in the event of circumstances requiring emergency evacuation. The air carrier shall show that functions so assigned are practicable of accomplishment. These functions shall be described in the air carrier manual.

4. By amending § 41.127 to read as follows:

41.127 Briefing of passengers. After May 31, 1956, each air carrier engaged in extended overwater operations shall assure that all passengers are briefed orally concerning the location and method of operation of life vests and emergency exits and the location of life rafts. The procedure to be followed in presenting this briefing shall be described in the air carrier manual. Such a briefing shall include a demonstration of the method of donning and inflating a life vest. Where the airplane does not proceed directly over water after take-off, no part of the briefing need be accomplished prior to take-off but the entire briefing shall be accomplished prior to reaching the overwater portion of the flight.

5. By amending § 41.137 by adding the following definition in alphabetical order:

41.137 Definitions. * * *

Extended overwater operation. An extended overwater operation shall be considered an operation over water conducted at a distance in excess of 50 miles from the nearest shore line.

(Sec. 205 (a), 52 Stat. 984; 49 U.S.C. 425 (a). Interpret or apply secs. 601, 604, 605, 52 Stat. 1007, 1010, as amended; 49 U.S.C. 551, 554, 555)

By the Civil Aeronautics Board:

/s/ M. C. Mulligan
M. C. Mulligan
Secretary

(SEAL)