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

Civil Air Regulations Amendment 42-6
Effective: November 28, 1955
Adopted: November 28, 1955

IRREGULAR AIR CARRIER AND OFF-ROUTE RULES

EMERGENCY AND EVACUATION EQUIPMENT AND PROCEDURES

Currently effective provisions of Part 42 of the Civil Air Regulations contain certain requirements for emergency and evacuation equipment and procedures. This amendment requires air carriers operating pursuant to Part 42 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 42 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. This amendment requires, in addition to markings, the installation of a light in all passenger-carrying large aircraft to illuminate all emergency exits in such a manner as to attract the attention of the occupants of the airplane at night. The object of this requirement is to ensure that in the case of a crash landing or ditching at night the passengers and crew will be able to identify and operate emergency exits. 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 irregular 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 Adminstrator 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 42 of the Civil Air Regulations (14 CFR Part 42, as amended) effective November 28, 1955:

1. By amending § 42.1 by adding the following definition in alphabetical order:

42.1 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.

2. By amending § 42.24 to read as follows:

42.24 Emergency and safety equipment. After May 31, 1957, the equipment required in §§ 42.24a, 42.24b, and 42.24c shall be approved.

3. By adding new §§ 42.24a, 42.24b, and 42.24c to read as follows:

42.24a 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 operated over routes requiring flights for long distances over uninhabited terrain must carry such additional emergency equipment as appropriate for the particular operation involved.

42.24b 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.