Federal Aviation Agency

Washington, D.C.

Civil Aeronautics Manual 40

Scheduled Interstate Air Carrier Certification and Operation Rules

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Supplement No. 7, CAM 40 dated Sept. 15, 1959 — Feb. 15, 1962

SUBJECT: Revisions to CAM 40.

This supplement is issued to incorporate into CAM 40 Civil Air Regulations Amendments 40–33, 40–34, 40–35, and 40–36, and Special Civil Air Regulations Nos. SR–392C, SR–432A, and SR–436B.

Amendments 40–33 and 40–34 concern the carriage of cargo in passenger compartments. Amendment 40–33 postponed the effective date of Amendment 40–32, which was incorporated in CAM 40 by Supplement No. 6, to January 20, 1962. Amendment 40–34 rescinded Amendment 40–32 and contained revised requirements concerning the carriage of cargo in passenger compartments.

Amendment 40–35 concerns mechanical reliability reports. It was issued February 6, 1962, to become effective March 12, 1962.

Amendment 40–36 concerns the illumination of passenger emergency exit markings. It was issued February 12, 1962, to become effective March 20, 1962.

Special regulation SR–392C concerns the facilitation of experiments with exterior lighting systems. This regulation was issued January 30, 1962, to become effective February 3, 1962, and supersedes Special Civil Air Regulation No. SR–392B.

Special regulation SR–432A concerns the carriage of persons aboard all-cargo aircraft. This regulation was issued February 5, 1962, to become effective February 9, 1962, and supersedes Special Civil Air Regulations Nos. SR–419 and SR–432.

Special regulation SR–436B concerns airborne weather radar equipment requirements for airplanes carrying passengers. This regulation was issued December 28, 1961, to become effective January 5, 1962, and supersedes Special Civil Air Regulation No. SR–436A.

New or revised material is enclosed in black brackets on the pages submitted with this supplement, except Special Civil Air Regulations Nos. SR–392C, SR–432A, and SR–436B and the pages in the addendum containing the preamble of amendments.

Remove the following pages:	*Insert the following new pages:*
V and VI	V and VI
IX and X	IX and X
41 through 46	41 through 46–1
85 through 87	85 through 87–1
109 and 110	109 and 110
197 through 199	197 through 199
201 through 203	201 through 203
P–33 and P–34	P–33 through P–38

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ATTACHMENTS.

Special Airworthiness Requirements

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bromide or any other toxic extinguishing agent is employed, provisions shall be made to prevent the entrance of harmful concentrations of fluid or fluid vapors into any personnel compartment either due to leakage during normal operation of the airplane or as a result of discharging the fire extinguisher on the ground or in flight when a defect exists in the extinguishing system. If a methyl bromide system is provided, the containers shall be charged with dry agent and shall be sealed by the fire-extinguisher manufacturer or any other party employing satisfactory recharging equipment. If carbon dioxide is used, it shall not be possible to discharge sufficient gas into personnel compartments to constitute a hazard from the standpoint of suffocation of the occupants.

40.138 *Extinguishing agent container pressure relief.* Extinguishing agent containers shall be provided with a pressure relief to prevent bursting of the container due to excessive internal pressures. The discharge line from the relief connection shall terminate outside the airplane in a location convenient for inspection on the ground. An indicator shall be provided at the discharge end of the line to provide a visual indication when the container has discharged.

40.139 *Extinguishing agent container compartment temperature.* Precautions shall be taken to assure that the extinguishing agent containers are installed in locations where reasonable temperatures can be maintained for effective use of the extinguishing system.

40.140 *Fire-extinguishing system materials.* All components of fire-extinguishing systems located in designated fire zones shall be constructed of fireproof materials, except for connections which are subject to relative motion between components of the airplane, in which case they shall be of flexible fire-resistant construction so located as to minimize the possibility of failure.

40.141 *Fire-detector systems.* Quick-acting fire detectors shall be provided in all designated fire zones and shall be sufficient in number and location to assure the detection of fire which may occur in such zones.

40.142. *Fire detectors.* Fire detectors shall be constructed and installed in such a manner as to assure their ability to resist without failure, all vibration, inertia, and other loads to which they may normally be subjected. Detectors shall be unaffected by exposure to oil, water, or other fluids or fumes which may be present.

40.143 *Protection of other airplane components against fire.* All airplane surfaces aft of the nacelles in the region of one nacelle diameter on both sides of the nacelle center line shall be constructed of fire-resistant material. This provision need not be applied to tail surfaces lying behind nacelles unless the dimensional configuration of the airplane is such that the tail surfaces could be affected readily by heat, flames, or sparks emanating from a designated fire zone or engine compartment of any nacelle.

40.150 *Control of engine rotation.* All airplanes shall be provided with means for individually stopping and restarting the rotation of any engine in flight, except that for turbine engine installations means for completely stopping the rotation need be provided only if the Administrator finds that rotation could jeopardize the safety of the airplane.

40.151 *Fuel system independence.* Airplane fuel systems shall be arranged in such manner that the failure of any one component will not result in the irrecoverable loss of power of more than one engine. A separate fuel tank need not be provided for each engine if the Administrator finds that the fuel system incorporates features which provide equivalent safety.

40.152 *Induction system ice prevention.* Means for preventing the malfunctioning of each engine due to ice accumulation in the engine air induction system shall be provided for all airplanes.

[40.153 *Carriage of cargo in passenger compartments.* Cargo shall not be carried in the passenger compartment of an airplane except as provided in either paragraph (a) or (b) of this section.

[(a) Cargo carried aft of the foremost seated passengers shall be carried in an approved cargo bin. Approved cargo bins shall meet the requirements of subparagraphs (1) through (8) of this paragraph.

[(1) The bin shall be capable of withstanding the load factors and emergency landing conditions applicable to the passenger seats of the airplane in which the bin is installed multiplied by a factor of 1.15. The combined weight of the bin and the maximum weight of cargo which may be carried in the bin shall be used to determine this strength.

[(2) The maximum weight of cargo which the bin is approved to carry and any instructions necessary to insure proper weight distribution within the bin shall be conspicuously marked on the bin.

[(3) The bin shall not impose any load on the floor or other structure of the airplane which exceeds the structural load limitations of such components.

[(4) The bin shall be attached to the seat tracks or to the floor structure of the airplane, and its attachments shall withstand the load factors and emergency landing conditions applicable to the passenger seats of the airplane in which the bin is installed multiplied by either the factor 1.15 or the seat attachment factor specified for the airplane, whichever is greater. The combined weight of the bin and the maximum weight of cargo which may be carried in the bin shall be used to determine this strength.

[(5) The bin shall not be installed in a position which restricts access to or use of any required emergency exit, or the use of the aisle in the passenger compartment.

[(6) The bin shall be fully enclosed and constructed of material which is at least flame resistant.

[(7) Suitable safeguards shall be provided within the bin to prevent the cargo from shifting under emergency landing conditions.

[(8) The bin shall not be installed in a position which obscures any passenger's view of the "seat belt" or "no smoking" sign, nor shall any required exit sign be blocked from view, unless an auxiliary sign or other approved means for proper notification of such passenger is provided.

[(b) Cargo carried forward of the foremost seated passengers shall be carried either in approved cargo bins as specified in paragraph (a) of this section, or in accordance with the following requirements:

[(1) It shall be properly secured by means of safety belts or other tiedowns having sufficient strength to eliminate the possibility of shifting under all normally anticipated flight and ground conditions;

[(2) It shall be packaged or covered in a manner to avoid possible injury to passengers;

[(3) It shall not impose any load on seats or the floor structure which exceeds the structural load limitation for those components;

[(4) It shall not be located in a position which restricts the access to or use of any required emergency or regular exit, or the use of the aisle in the passenger compartment; and

[(5) It shall not be located in a position which obscures any passenger's view of the "seat belt" or "no smoking" sign, nor shall any required exit sign be blocked from view, unless an auxiliary sign or other approved means for proper notification of such passenger is provided.]

(Amendment 40-32, published in 26 F.R. 11354, Dec. 1, 1961, effective Jan. 2, 1962; [Amendment 40-33, published in 26 F.R. 12762, Dec. 30, 1961, effective Jan. 2, 1962; Amendment 40-34, published in 27 F.R. 649, Jan. 23, 1962, effective Jan. 20, 1962.])

Instruments and Equipment for all Operations

40.170 *Aircraft instruments and equipment for all operations.*

(a) Instruments and equipment required by sections 40.171 through 40.232 shall be approved and shall be installed in accordance with the provisions of the airworthiness requirements applicable to the instruments or equipment concerned.

(b) The following provisions apply to air-speed limitations, air-speed indicators, and related information:

(1) Air-speed limitations and related information contained in the Airplane Flight Manual and pertinent placards shall be expressed in the same units as used on the air-speed indicator.

(2) When more than one air-speed indicator is required, all such indicators shall be calibrated to read in the same units.

(3) When an air-speed indicator is calibrated in statute miles per hour, a readily usable means shall be provided for the flight crew to convert statute miles per hour to knots.

(4) On and after April 1, 1956, all air-speed indicators shall be calibrated in knots, and all air-speed limitations and related information contained in the Airplane Flight Manual and pertinent placards shall be expressed in knots.

(c) The following instruments and equipment shall be in operable condition prior to take-off, except as provided in section 40.391(b) for continuance of flight with equipment inoperative:

(1) Instruments and equipment required to comply with airworthiness requirements under which the airplane is type certificated and as required by the provisions of section 40.110 and sections 40.150 through 40.153.

(2) Instruments and equipment specified in sections 40.171 through 40.178 for all operations, and the instruments and equipment specified in sections 40.200 through 40.232 for the type of operation indicated, wherever these items are not already provided in accordance with subparagraph (1) of this paragraph.

40.170–1 *Approval of aircraft instruments and equipment for all operations (FAA interpretations which apply to sec. 40.170(a)).* Instruments and equipment specified in sections 40.171, 40.172, and 40.230 through 40.232 must be approved in accordance with one or more of the following methods:

(a) Instruments and equipment which are accepted as part of the aircraft on original certification.

(b) Instruments and equipment manufactured in accordance with (TSO) Technical Standard Orders and installed in accordance with approved repair and alteration procedures or on original aircraft certification.

(c) Instruments and equipment manufactured in accordance with a (CAATC) Type Certificate and installed on original aircraft certification or subsequent repair and alteration approval.

(d) Instruments and equipment approved by the Administrator in accordance with standard repair and alteration procedure.

(Published in 18 F.R. 8611, December 22, 1953, effective January 1, 1954.)

40.170–2 *Determination of operable condition of radio equipment (FAA interpretations which apply to sec. 40.170(c)).* Radio equipment specified in sections 40.230 through 40.232 which is of such complex nature that it cannot be accurately checked for operable condition prior to takeoff, except by special ramp or shop performance check procedures, may be deemed to have been determined operable if equipment in this category is comprehensively checked for satisfactory operational performance during the last comprehensive performance check specified in the Operations Specifications, Aircraft Maintenance (other than preflight or daily), of the air carrier using such equipment coupled with frequent in-flight checks by pilots during regular operations.

(Published in 18 F.R. 8611, December 22, 1953, effective January 1, 1954.)

40.170–3 *Airspeed limitations and related information contained in the Airplane Flight Manual (FAA policies which apply to sec. 40.170(b)).* The airspeeds shown in the Performance Information Section only, of an Airplane Flight Manual approved prior to April 1, 1956, may continue to be expressed in statute miles per hour, provided that a table converting statute miles to knots is incorporated therein, and a cautionary note is placed on each page and chart where airspeeds are denoted indicating that the statute miles shown must be converted to knots when determining performance information. A similar note should be placed in the Operations Limitations Section, indicating that airspeeds shown in the

Performance Information Section are in statute miles and must be converted to knots when determining performance information.

(Published in 21 F.R. 4311, June 20, 1956, effective July 1, 1956.)

40.171 *Flight and navigational equipment for all operations.* The following flight and navigational instruments and equipment are required for all operations:

(a) An air-speed indicating system with heated pitot tube or equivalent means for preventing malfunctioning due to icing;

(b) Sensitive altimeter;

(c) Clock (sweep-second);

(d) Free-air temperature indicator;

(e) Gyroscopic bank and pitch indicator (artificial horizon);

(f) Gyroscopic rate-of-turn indicator combined with a slip-skid indicator (turn and bank indicator);

(g) Gyroscopic direction indicator (directional gyro or equivalent);

(h) Magnetic compass; and

(i) Vertical speed indicator (rate-of-climb indicator).

40.172 *Engine instruments for all operations.* The following engine instruments are required for all operations, except that the Administrator may permit or require different instrumentation for turbine-powered airplanes to provide equivalent safety:

(a) Carburetor air temperature indicator for each engine;

(b) Cylinder head temperature indicator for each air-cooled engine;

(c) Fuel pressure indicator for each engine;

(d) Fuel flowmeter or fuel mixture indicator for each engine not equipped with automatic altitude mixture control;

(e) Means for indicating fuel quantity in each fuel tank;

(f) Manifold pressure indicator for each engine;

(g) Oil pressure indicator for each engine;

(h) Oil quantity indicator for each oil tank when a transfer or separate oil reserve supply is used;

(i) Oil-in temperature indicator for each engine;

(j) Tachometer for each engine;

(k) An independent fuel pressure warning device for each engine or a master warning device for all engines with means for isolating the individual warning circuits from the master warning device; and

(l) Effective July 1, 1956, a means shall be provided for each reversible propeller on airplanes equipped with reversible propellers, which will indicate to the pilots when the propeller is in reverse pitch. Such means may be actuated at any point in the reversing cycle between the normal low pitch stop position and full reverse pitch. No indication shall be given at or above the normal low pitch stop position. The source of indication shall be actuated by the propeller blade angle or be directly responsive to the propeller blade angle.

40.172-1 *Warning lights for reversible propellers (FAA policies which apply to sec. 40.172(l).* In the interest of cockpit uniformity, when warning lights are used to indicate to the pilot that a reversible propeller is in reverse pitch, such warning lights should be amber in color.

(Published in 21 F.R. 4311, June 20, 1956, effective July 1, 1956.)

40.173. *Emergency equipment for all operations.*

(a) *General.* The emergency equipment specified in paragraphs (b), (c), and (d) of this section is required for all operations. Such equipment shall be readily accessible to the crew, and the method of operation shall be plainly indicated. When such equipment is carried in compartments or containers, the compartments or containers shall be so marked as to be readily identifiable.

(b) *Hand fire extinguishers for crew, passenger, and cargo compartments.* Hand, fire extinguishers of an approved type shall be provided for use in crew, passenger, and cargo compartments in accordance with the following requirements:

(1) The type and quantity of extinguishing agent shall be suitable for the type of fires likely to occur in the compartment where the extinguisher is intended to be used.

(2) At least one hand fire extinguisher shall be provided and conveniently located on the flight deck for use by the flight crew.

(3) At least one hand fire extinguisher shall be conveniently located in the passenger compartment of airplanes accommodating more than six but less than 31 passengers. On airplanes accommodating more than 30 passengers, at least two fire extinguishers shall be provided. None need be provided in passenger compartments of airplanes accommodating six or less persons.

(c) *First-aid equipment.* First-aid equipment suitable for treatment of injuries likely to occur in flight or in minor accidents shall be provided in a quantity appropriate to the number of passengers and crew accommodated in the airplane.

(d) *Crash ax.* All airplanes shall be equipped with at least one crash ax.

(e) *Means for emergency evacuation.* After August 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.

(f) *Interior emergency exit marking.*

(1) After May 31, 1957, all passenger 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) In all passenger-carrying airplanes, a source or sources of light with an energy supply independent of the main lighting system shall be installed to illuminate all passenger 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 arming of the system to function automatically, the system shall be armed prior to each takeoff and landing. When such lights require manual operation to function, they shall be turned on prior to each takeoff and landing.

[(Amendment 40–36, published in 27 F.R. 1452, Feb. 16, 1962, effective Mar. 20, 1962.)]

40.173–1 *Hand fire extinguishers for crew, passenger, and cargo compartments (FAA interpretations which apply to sec. 40.173(b)).* Approved extinguishers are extinguishers which have been approved by the Administrator or by the Underwriters Laboratories (UL), the Factory Mutual Laboratories (FML), or any other agency which may be deemed qualified by the Administrator in accordance with section 4b.18.

(Published in 18 F.R. 8612, December 22, 1953, effective January 1, 1954.)

40.174 *Seats and safety belts for all occupants.* A seat and an individual safety belt are required for each passenger and crew member, excluding infants, who are in other than a recumbent position during take-off and landing. One safety belt only is required in a berth for one or two persons in a recumbent position during take-off and landing. During flight between take-off and landing, one safety belt is sufficient for two persons occupying a multiple lounge or divan seat.

40.175 *Miscellaneous equipment for all operations.* All airplanes shall have installed the following equipment:

(a) If protective fuses are used, spare fuses of a number approved for the particular airplane and appropriately described in the air carrier manual.

(b) Windshield wiper or equivalent for each pilot station.

(c) A power supply and distribution system capable of producing and distributing the load for all required instruments and equipment using an external power supply in the event of failure of any one power source or component of the power distribution system: *Provided*, That the Administrator may authorize the use of common elements in the power distribution system when he finds that such elements are so designed as to be reasonably protected against malfunction. Engine-driven sources of energy when used, shall be on separate engines.

(d) Means for indicating the adequacy of the power being supplied to required flight instruments.

(e) Two independent static pressure systems, so vented to the outside atmospheric pressure that they will be least affected by air flow variation, moisture, or other foreign matter, and so installed as to be airtight except for the vent. When a means is provided for transferring an instrument from its primary operating system to an alternate system, such means shall include a positive positioning control and shall be marked to indicate clearly which system is being used.

(f) Means for locking all companionway doors which separate passenger compartments from flight crew compartments. Keys for all doors which separate passenger compartments from other compartments having emergency exit provisions shall be readily available to all crew members. Any door which is the means of access to a required passenger emergency exit shall be placarded to indicate that it must be open during takeoff and landing. All doors which lead to compartments normally accessible to passengers and which are capable of being locked by passengers shall be provided with means for unlocking by the crew in the event of an emergency.

(g) For seaplanes only, anchor light or lights, a warning bell for signaling when not under way during fog conditions, and an anchor adequate for the size of the seaplane.

40.175–1 *Power supply and distribution systems (FAA interpretations which apply to sec. 40.175(c)).*

(a) Aircraft having a power supply and distribution system which meets the requirements of sections 4b.606 (a), (b), and (c); 4b.612(e); 4b.622 (a) and (b); 4b.623; 4b.625; 4b.650(b) of this subchapter are deemed to have met the requirements of section 40.175(c).

(b) The use of common elements in the electrical power distribution system which do not meet the requirements of paragraph (a) of this section will be approved under the provisions of section 40.175(c) if their record of reliability is such that failure is improbable.[6]

(Published in 20 F.R. 4291, June 18, 1955, effective July 1, 1955.)

40.176 *Cockpit check procedure.* The air carrier shall provide for each type of airplane a cockpit check procedure. This procedure shall include all items necessary for flight crew members to check for safety prior to starting engines, prior to taking off, prior to landing, and in engine emergencies. It shall be so designated as to obviate the necessity for a flight crew member to rely upon his memory for items to be checked and shall be readily usable in the cockpit of each airplane.

40.177. *Passenger information for all operations.* All airplanes shall be equipped with signs visible to passengers and cabin attendants to notify such persons when smoking is prohibited and when safety belts should be fastened. These signs shall be capable of on-off operation by the crew.

40.178 *Exterior exit and evacuation markings for all operations.* Effective January 1, 1956, exterior surfaces of the airplane shall be marked to identify clearly all required emergency exits. When such exits are operable from the outside, markings shall consist

[6] As a result of surveys conducted by the CAA during March and July of 1954, it was found that by employing the standards in section 40.175–1, all aircraft in service which were subject to the provisions of this part, with the exception of a limited number of DC–3 aircraft, were acceptable from a compliance viewpoint. The DC–3 aircraft mentioned were not considered to meet the provisions of this section because a common circuit breaker is incorporated in the electric power distribution system to both ADF inverters and did not provide a means, such as individual fuses or circuit breakers, to assure continued operation in the event the common circuit breaker opened as a result of fault in either inverter or ADF system.

of or include information indicating the method of opening.

Instruments and Equipment for Special Operations

40.200 *Instruments and equipment for operations at night.* Each airplane operated at night shall be equipped with the following instruments and equipment in addition to those required by sections 40.171 through 40.178:

(a) Position lights;

(b) An anti-collision light for airplanes having a maximum certificated weight of more than 12,500 pounds;

(c) Two landing lights;

(d) Deleted.

(Paragraph (d) deleted by Amendment 40-30, published in 26 F.R. 8881, Sept. 21, 1961, effective Sept. 21, 1961.)

(e) Instrument lights providing sufficient illumination to make all instruments, switches, etc., easily readable, so installed that their direct rays are shielded from the flight crew members' eyes and that no objectionable reflections are visible to them. A means of controlling the intensity of illumination shall be provided unless it is shown that nondimming instrument lights are satisfactory;

(f) An air-speed indicating system with heated pitot tube or equivalent means for preventing malfunctioning due to icing; and

(9) Check pilot authorization where applicable;

(Published in 18 F.R. 6622, October 17, 1953, effective January 1, 1954.)

40.502 *List of airplanes.* Each air carrier shall maintain a current list of all airplanes being operated by it in scheduled air transportation: *Provided,* That airplanes of another air carrier being operated in accordance with an interchange agreement may be incorporated by reference.

40.503 *Dispatch release form.*

(a) The dispatch release may be in any form but shall contain at least the following information with respect to each flight:

(1) Identification number of the airplane to be used, and the trip number;

(2) Airport of departure, intermediate stops, destination, and alternates therefor;

(3) Minimum fuel supply; and

(4) Type of operation, e.g., IFR, VFR.

(b) The dispatch release shall contain, or have attached thereto, weather reports, available weather forecasts, or a combination thereof, for the destination, intermediate stops, and alternates specified therein which shall be the latest available at the time the dispatch release is signed by the pilot in command and dispatcher. It shall include such additional weather reports and forecasts, as available, considered necessary or desirable by the pilot in command and aircraft dispatcher.

40.503–1 *Dispatch release form (FAA interpretations which apply to sec. 40.503(a)(2)).* The dispatch release form may contain a trip or code number for the clearance of the particular trip instead of specifying each terminal and intermediate airport. This number used in the dispatch release must correspond with the number listed in the air carrier's published schedule or operations manual, which will list all the regular and intermediate stops of the particular trip for which clearance was given. In the event field condition, weather, etc., are such that routine operations are not to be conducted in accordance with the number for the particular trip, the dispatch release will specify the exceptions indicating the reason for the nonroutine operation.

(Published in 19 F.R. 7081, October 30, 1954, effective November 15, 1954.)

40.504 *Load manifest.*

(a) The load manifest shall contain at least the following information with respect to the loading of an airplane at the time of take-off:

(1) The weight of:

(i) Airplane,

(ii) Fuel and oil,

(iii) Cargo, including mail and baggage, and

(iv) Passengers;

(2) The maximum allowable weight applicable for the particular flight;

(3) The total weight computed in accordance with approved procedures; and

(4) Evidence that the airplane is loaded in accordance with an approved schedule which insures that the center of gravity is within approved limits.

(b) The load manifest shall be prepared and signed for each flight by qualified personnel of the air carrier charged with the duty of supervising the loading of the airplane and the preparation of load manifest forms, or by other qualified personnel authorized by the air carrier.

40.505 *Disposition of load manifest, dispatch release form, and flight plans.* Copies of the completed load manifest, or information therefrom except with respect to cargo and passenger distribution, the dispatch release form, and the flight plan shall be in the possession of the pilot in command and shall be carried in the airplane to its destination. Copies also shall be kept for at least 3 months.

40.506 *Maintenance records.*

(a) Each air carrier shall keep at its principal maintenance base current records of the total time in service, the time since last overhaul, and the time since last inspection of all major components of the airframe, engines, propellers, and, where practicable, appliances.

(b) Records of total time in service may be discontinued when it has been shown that the service life of component parts is safely controlled by other means, such as inspection, overhaul, or parts retirement procedures.

The Administrator may require the keeping of total time records for specific parts when it is found that other procedures will not safely limit the service life of such parts.

(c) An airplane component, engine, propeller, or appliance for which complete records are not available may be placed in service, provided that:

(1) It is of a type for which total time-in-service records are not required under the provisions of paragraph (b) of this section,

(2) Parts which are limited by the Administrator or manufacturer to a specific service time are retired and replaced by new parts, and

(3) It has been properly overhauled or rebuilt, and a record of such overhaul or rebuilding is included in the maintenance records.

40.507 *Maintenance log.* A legible record shall be made in the airplane's maintenance log of the action taken in each case of reported or observed failures or malfunctions of airframes, engines, propellers, and appliances critical to the safety of the flight. The air carrier shall establish an approved procedure for retaining an adequate number of such records in the airplane in a place readily accessible to the flight crew and shall incorporate such procedure in the air carrier manual. The maintenance log shall contain information from which the flight crew may readily determine the time since last overhaul of the airframe and engines.

[40.508 *Mechanical reliability reports.*

[(a) Each air carrier shall report the occurrence or detection of those failures, malfunctions, or defects specified in paragraph (b) of this section. In addition, each air carrier shall report any other failure, malfunction, or defect which occurs or is detected at any time in an airplane or airplane component (including airplane systems, appliances, powerplants, and propellers) used by the air carrier, when, in the carrier's opinion, such failure, malfunction, or defect has endangered or may endanger the safe operation of an airplane used by the air carrier. The report shall be in written form covering a period of 24 hours beginning at 0900 hours local time of each day and ending at 0900 hours local time the next day, and shall be submitted to the Federal Aviation Agency maintenance inspector assigned to the air carrier by 0900 hours local time of the following day: *Provided,* That reports which are due on Saturday or Sunday may be submitted on the following Monday and in case of legal holidays on the following workday.

[NOTE: Failures, malfunctions, or defects reported in accordance with the accident reporting provisions of Part 320 of the Regulations of the Civil Aeronautics Board need not be included.

[(b) The air carrier shall report each occurrence or detection of a failure, malfunction, or defect involving:

[(1) Fires during flight and whether the related fire-warning system functioned properly;

[(2) Fires during flight and whether the related fire-warning system did not function properly;

[(3) Fires during flight not protected by a related fire-warning system;

[(4) False fire warning during flight;

[(5) Engine exhaust systems which result during flight in damage to engine, adjacent structure, equipment, or components;

[(6) An airplane component which results during flight in the accumulation or circulation of smoke, vapor, or toxic or noxious fumes in the crew compartment or cabin;

[(7) Engine shutdown during flight due to engine flameout;

[(8) Engine shutdown during flight when external damage to the engine or to the airplane structure has occurred;

[(9) Engine shutdown during flight due to foreign object ingestion or icing;

[(10) Engine shutdown during flight of more than one engine on an airplane;

[(11) Propeller feathering system or ability of the system to control overspeeding during flight;

[(12) Fuel or fuel-dumping systems affecting fuel flow or causing hazardous leakage during flight;

[(13) Landing gear extension or retraction or opening or closing of landing-gear doors during flight;

[(14) Brake system components which result in loss of brake actuating force while the airplane is in motion on the ground;

[(15) Airplane structure which requires major repair;

[(16) Cracks, permanent deformation, or corrosion of airplane structure which exceed the maximum limits acceptable to the manufacturer or the Federal Aviation Agency; and

[(17) Airplane components or systems which result during flight in the taking of emergency actions; except that action taken to shutdown an engine need not be reported as an emergency under this provision.

[Note: Under the provisions of this paragraph, an airplane is in flight from the moment it leaves the surface of the earth on takeoff until it touches down at a place of landing.

[(c) Reports required by paragraph (a) of this section shall be transmitted in a manner and on a form convenient to the air carrier's system of communication and procedure, and shall include in the first daily report as much of the following information as is available:

[(1) Type and identification number of the airplane, name of the operator, date, flight number, and stage during which the incident occurred; e.g., preflight, takeoff, climb, cruise, descent, landing, inspection;

[(2) Emergency procedure effected; e.g., unscheduled landing, emergency descent;

[(3) Nature of condition; e.g., fire, structural failure;

[(4) Identification of part and system involved, including available information pertaining to type designation of the major component and time since overhaul;

[(5) Apparent cause of trouble; e.g., wear, crack, design deficiency, personnel error;

[(6) Disposition; e.g., repaired, replaced, airplane grounded, part sent to manufacturer; and

[(7) Brief narrative summary of other pertinent information necessary for more complete identification, determination of seriousness, and corrective action.

[(d) Reports required by paragraph (a) shall not be withheld pending accumulation of all information specified in paragraphs (b) and (c) of this section. When additional information is obtained relative to the incident, including any that may be furnished by the manufacturer or other outside agency, it shall be expeditiously submitted as a supplement to the first report, referencing the date and place of submission of such report.

[(Amendment 40-35, published in 27 F.R. 1242, Feb. 10, 1962, effective Mar. 12, 1962.)]

40.509 *Mechanical interruption summary report.* Each air carrier shall submit regularly and promptly to the Administrator a summary report containing information on the following occurrences:

[(a) All interruptions to a scheduled flight, unscheduled changes of airplanes en route, and unscheduled stops and diversions from route which result from known or suspected mechanical difficulties or malfunctions that are not required to be included in mechanical reliability reports.]

(b) The number of engines removed prematurely because of mechanical trouble, listed by make and model of engine and the airplane type in which the engine was installed.

(c) The number of propeller featherings in flight, listed by type of propeller and type of engine and the airplane on which the propeller is installed. Propeller featherings accomplished for training, demonstration, or flight check purposes need not be reported.

[(Amendment 40-35, published in 27 F.R. 1242, Feb. 10, 1962, effective Mar. 12, 1962.)]

40.510 *Alteration and repair reports.* Reports of major alterations or repairs of airframes, engines, propellers, and appliances shall be made available to the Administrator promptly upon completion of such alterations or repairs.

40.511 *Maintenance release.* When an airplane is released by the maintenance organization to flight operations, a maintenance release or appropriate entry into the mainte-

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nance log certifying that the airplane is in an airworthy condition shall be prepared and signed by a maintenance inspector or a person authorized by the inspection organization prior to release of such airplane. If a maintenance release form is prepared, a copy shall be given to the pilot in command. An appropriate record shall be kept for at least 2 months.

40.511-1 *Purpose and form of maintenance release (FAA interpretations which apply to sec. 40.511).*

(a) The purpose of the maintenance release is to assure that when any maintenance and/or inspection is performed or is required to be performed, such maintenance and/or inspection is completed satisfactorily in accordance with the air carrier's instructions and the Civil Air Regulations; and that no known condition exists at the time the release is signed which would render the aircraft unairworthy.

(b) The form of the maintenance release is considered to be optional on the part of the air carrier provided such release fulfills the purpose of section 40.511 of this part.

(Published in 21 F.R. 1697, March 17, 1956, effective March 31, 1956.)

40.512 *Communication records.* Each air carrier shall maintain, and retain for a period of 30 days, records of radio contacts by or with pilots en route.

NOTE: The record-keeping and reporting requirements of this regulation have been approved by the Bureau of the Budget in accordance with the Federal Reports Act of 1942.

SPECIAL CIVIL AIR REGULATION NO. SR-392C

Effective: February 3, 1962
Adopted: January 30, 1962
Published: February 3, 1962
(27 F.R. 1008)

Facilitation of Experiments With Exterior Lighting Systems

Special Civil Air Regulation No. SR-392B, adopted on February 25, 1957, permits experimentation with exterior lighting systems, which do not comply with the standards prescribed in the Civil Air Regulations, on aircraft with standard airworthiness certificates. Several conditions are imposed to insure that the number of aircraft engaged in the experiments is reasonably limited; that the experimental exterior lights are in fact installed for bonafide experimentation; and that the results of such experimentation become generally available. This special regulation expires on February 25, 1962.

In a notice of proposed rule making contained in Draft Release No. 61-27 and published in the Federal Register, December 23, 1961 (26 F.R. 12294), the Agency gave notice that it has under consideration the termination of SR-392B and requested comments from interested persons concerning this matter. In response to such request, the Agency has received numerous reports, arguments and other evidence. However, the volume of the comments received is such that there is not sufficient time remaining to review and evaluate such comments prior to the termination of SR-392B. Therefore, in order to afford the Agency the opportunity to fully consider all the relevant matter presented and to take whatever additional rule making action that may be indicated, it is necessary to extend the termination date of SR-392B to June 25, 1962.

Since this regulation continues in effect the provisions of the previous regulation and imposes no additional burden upon any person, compliance with the notice and public procedure provisions of the Administrative Procedure Act is unnecessary and good cause exists for making this regulation effective on less than 30 days' notice.

In consideration of the foregoing, the following Special Civil Air Regulation is adopted to become effective on February 3, 1962:

Contrary provisions of the Civil Air Regulations notwithstanding, experimental exterior lighting equipment which does not comply with the relevant specifications contained in the Civil Air Regulations may, subject to the approval of the Administrator, be installed and used on aircraft for the purpose of experimentation intended to improve exterior lighting for a period not to exceed six months: *Provided*, That

(1) The Administrator may grant approval for additional periods if he finds that the experiments can be reasonably expected to contribute to improvements in exterior lighting;

(2) Not more than 15 aircraft possessing a U.S. certificate of airworthiness may have installed at any one time experimental exterior lighting equipment of one basic type;

(3) The Administrator shall prescribe such conditions and limitations as may be necessary to insure safety and avoid confusion in air navigation;

(4) The person engaged in the operation of the aircraft shall disclose publicly the deviations of the exterior lighting from the relevant specifications contained in the Civil Air Regulations at times and in a manner prescribed by the Administrator; and

(5) Upon application for approval to conduct experimentation with exterior lighting, the applicant shall advise the Administrator of the specific purpose of the experiments to be conducted; and, at the conclusion of the approved period of experimentation, he shall advise the Administrator of the detailed results thereof.

This regulation supersedes Special Civil Air Regulation No. SR-392B and shall terminate June 25, 1962, unless sooner superseded or rescinded.

SPECIAL CIVIL AIR REGULATION NO. SR–432A

Effective: February 9, 1962
Adopted: February 5, 1962
Published: February 9, 1962
(27 F.R. 1208)

Carriage of Persons Aboard All-Cargo Aircraft

Authorization for the carriage of persons abroad all-cargo aircraft is presently contained in Special Civil Air Regulations No. SR–419, effective January 17, 1957 (22 F.R. 423), and No. SR–432, effective May 30, 1959 (24 F.R. 4366).

SR–419 authorizes three LOGAIR contractors, listed in Appendix A thereto, to carry military couriers, route supervisors, and LOGAIR flight crewmembers of other LOGAIR contractors in their cargo aircraft. These air carriers were granted relief from the maximum passenger weight requirements of Special Civil Air Regulation No. SR–406C, as applicable to C–46 aircraft, in addition to certain other passenger-carrying provisions of Part 42 of the Civil Regulations. Special Civil Air Regulation No. SR–419 also provides that other air carriers conducting LOGAIR operations may individually secure this authorization from the Administrator, and be listed accordingly in Appendix A of the regulation. Such authorization was granted in the interest of the efficiency and safety of these essential national defense operations.

SR–432 authorizes the carriage of certain persons in cargo operations when such persons perform specific duties in connection with the safety of flights, the safe carriage of animals, or the carriage of radioactive materials. It also provides for the carriage of security and honor guards in cargo aircraft when authorized by the Federal Government. These authorizations were based on the conclusion that compliance with the passenger operation rules of Parts 40, 41, and 42 by an air carrier when carrying these passengers in all-cargo airplanes placed an unreasonable burden upon the air carriers concerned, since such individuals should not, and were not intended to, fall within the normally accepted category of air carrier passengers.

This regulation incorporates the provisions of both Special Regulations in a single regulation with the following changes:

(1) Recently the Agency has received requests from other air carriers and commercial operators operating flights under LOGAIR or other types of military contracts who wish to take advantage of SR–419. However, as presently written, it would require a revision of the regulation or an exemption thereto each time an operator is given such authorization. The Administrator has determined that there are no special reasons to limit such authorization to LOGAIR operations or air carriers and that this privilege should be extended to all military contract air carriers or commercial operators.

(2) Requests have also been received from air carriers to permit carriage of company employees and their dependents on cargo flights without complying with the passenger-carrying airplane requirements when traveling on company business to and from outlying stations not served by adequate and regular passenger flights. The problem of providing these persons with transportation to and from their duty stations is particularly acute outside the United States. Carriage of these persons on cargo flights is similar to the carriage of the persons authorized by paragraphs 1 (a) and (b) of SR–432 and a provision is included authorizing their transportation on cargo flights without full compliance with the passenger-carrying or passenger-service airplane requirements of Part 40, 41, or 42.

(3) Many of the operators may also wish to conduct the cargo flights in accordance with SR–411A which authorizes airplanes certificated under the transport category requirements in effect prior to March 13, 1956, to be operated in cargo service at certain increased weights. Airplanes used in these cargo flights are subject to inspections in addition to those normally performed and have been operated incident-free for many years. Therefore, as part of this regulatory action the persons authorized herein may also be carried aboard those airplanes specified in SR–411A at the increased weights.

(4) Under SR–419, the operator is responsible for the issuance of instructions to insure that the persons carried will not interfere with the control of the aircraft. This requirement is unnecessary and is being deleted in this regulation. The pilot in command of the aircraft has the authority to approve or deny access to the flight deck of such aircraft and is better qualified to issue such instructions as are necessary under the particular circumstances of the flight to persons authorized to enter the flight deck under this regulation.

(5) SR–419 also requires that the operator furnish the Administrator, prior to the carriage of persons authorized by the regulation, with a list showing the type of aircraft, registration number, and an authorization from the Air Force for the transportation of such persons. Experience has shown that inspection of the records of the operators involved will supply the necessary information. Therefore, submission of this information in advance is no longer required under this regulation.

In view of the foregoing, this regulation combines the provisions of SR–419 and SR–432, insofar as they both relate to the carriage of passengers on cargo aircraft, and, in addition, permits the carriage of certain other persons on such cargo flights. The regulation also permits such flights to be conducted without compliance with the passenger-carrying or passenger-service airplane requirements of Part 40, 41, or 42, or, in the case of C–46 airplanes, the provisions of SR–406C. When such persons are authorized to be carried on airplanes certified under the transport category requirements in effect prior to March 13, 1956, the airplane may be operated in accordance with the increased weight requirements of SR–411A.

With regard to the carriage of company employees and their dependents it was deemed necessary to provide special requirements, since these persons may vary in age and agility, and thus their ability to cope with

unusual situations may be restricted. Therefore, it is being required that operators include in their operations manuals the procedures necessary for the safe carriage of such persons.

Since this regulatory action imposes no additional burden on any person, notice and public procedure hereon are unnecessary, and 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 hereby adopted, effective February 9, 1962:

1. The following persons, when duly authorized by the air carrier or commercial operator operating the airplane may be carried aboard an airplane engaged in the carriage of cargo only, without compliance with the passenger-carrying or passenger-service airplane requirements of Parts 40, 41, and 42, and SR–406C and SR–411A of the Civil Air Regulations:

(a) A person performing a specific duty assignment aboard an airplane in connection with the safety of the flight, or the safe carriage of animals, or radioactive materials within the meaning of and subject to the requirements of section 49.2 of the Civil Air Regulations; or while traveling to or from such duty assignments where the air carrier or commercial operator finds that other means of transportation are not practicable;

(b) A person performing duty as a security or honor guard aboard an airplane for shipments made by or under the authority of the Federal Government;

(c) Military couriers, military route supervisors, and flight crewmembers of any military cargo contract air carrier or commercial operator, when operating under a military cargo contract and specifically authorized by the appropriate military service; and

(d) Company employees of the air carrier or commercial operator and their dependents when traveling on company business to or from outlying stations not served by adequate, regular passenger flights. When such persons are carried, cargo will be loaded in such a manner as not to obstruct access to the pilot compartment, or the appropriate emergency or regular exits. In addition, for extended overwater flights, or for flights over uninhabited terrain, emergency and survival equipment adequate for the particular operation involved shall be carried. Procedures for the safe carriage of company employees and their dependents under this subparagraph shall be incorporated into the air carrier's or comercial operator's operations manual.

2. An approved seat with a safety belt shall be available for the use of each person described in paragraph 1. The location of the seat shall be such that the occupant will not be in a position to interfere with the flight crewmembers in the performance of their duties.

3. Persons described in paragraph 1 may be admitted to the flight deck of the airplane when authorized by the pilot in command.

This Special Civil Air Regulation supersedes Special Civil Air Regulation No. SR–419 and Special Civil Air Regulation No. SR–432, and shall remain in effect until superseded or rescinded.

SPECIAL CIVIL AIR REGULATION NO. SR–436B

Effective: January 5, 1962
Adopted: December 28, 1961
Published: January 5, 1962
(27 F.R. 97)

Airborne Weather Radar Equipment Requirements for Airplanes Carrying Passengers

Special Civil Air Regulation No. SR–436A (25 F.R. 6130), which superseded SR–436 (25 F.R. 167), requires the installation of approved airborne weather radar equipment in certain transport category airplanes used for the carriage of passengers under Part 40, 41, or 42 of the Civil Air Regulations. This requirement is based on the fact that airborne weather radar equipment facilitates the early detection and location by the pilot of certain areas of turbulence and enables him to avoid such areas or to take such other action as may be necessary in the interest of safety.

Section 4 of SR–436A expressly excepts from the provisions of the regulation airplanes used solely within the States of Alaska and Hawaii. These operations were excluded because thunderstorms and other potentially hazardous meterological conditions detectable by weather radar rarely occur in those areas.

Recently, the Federal Aviation Agency received a request from an air carrier operating in the State of Alaska to amend section 4 of SR–436A to expand the exceptions contained in that section to include certain areas of the Dominion of Canada. In support of its request the air carrier points out that because of the physical shape of the State of Alaska, the use of airways which overfly northwest Canada provide a more direct route between northeast Alaska and southeast Alaska. Moreover, when operating over the Canadian Airways Dawson and Whitehorse, Yukon Territory, Canada, are ideally located and suitably equipped to provide refueling service. However, when carrying passengers under the provisions of Part 41 or 42, compliance with the present provisions of SR–436A prevents the use of both the more direct airways over Canada and the Canadian refueling stops unless approved airborne weather radar is installed on the airplane being utilized.

At an industry meeting held in the State of Alaska, subsequently to this request, the feasibility of amending SR–436A was discussed. It was suggested at this meeting that if an amendment is made to section 4 of SR–436A it should include all of the Dominion of Canada west of a north-south line which would encompass the city of Edmonton, Alberta, Canada. This would include all of Canada west of longitude 110° W., between the northern coastline of Canada and the northern boundary of the continental United States. This request was based upon a contention that there is light thunderstorm activity in that part of Canada.

As a result of these requests, the Federal Aviation Agency initiated a study into the feasibility of amending section 4 of SR–436A to except

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airplanes operated in certain parts of Canada from the requirement of installing airborne weather radar. Information was received from the U.S. Weather Bureau that the area of Canada west of longitude 130° W., between latitude 70° N. and latitude 53° N., has meteorological conditions similar to the State of Alaska. This information also shows that thunderstorms and other potentially hazardous meteorological conditions rarely occur in that area. However, in the area of Canada that is east and south of that area and adjacent to the United States northern boundary and which encompasses Edmonton, Alberta, the thunderstorm activity increases considerably and is equal to or greater than that of a large portion of the United States where airborne weather radar is mandatory.

After considering the foregoing, it has been determined that the level of safety in air carrier passenger operations would not be reduced by excluding from the provisions of SR–436A airplanes used for the carriage of passengers within Alaska and that portion of Canada west of longitude 130° W., between latitude 70° N. and latitude 53° N., where thunderstorms and other potentially hazardous weather conditions rarely occur. In addition, such an exclusion would permit the use of more direct routes and refueling stops between northeast and southeast Alaska. Therefore, section 4 of SR–436A is amended to exclude airplanes used within the State of Alaska and that portion of Canada west of longitude 130° W., between latitude 70° N. and latitude 53° N., from the weather radar requirements.

This Special Civil Air Regulation incorporates into one document all of the provisions of SR–436A with amendments to exclude the foregoing portions of Canada. Since it imposes no additional burden on any person and relieves a restriction, I find that notice and public procedure hereon are unnecessary, and that good cause exists for making this regulation effective on less than 30 days' notice.

In consideration of the foregoing, the following Special Civil Air Regulation is hereby adopted:

1. *Airborne weather radar equipment requirement.* After the dates specified, the following transport category airplanes shall not be used for the carriage of passengers under the provisions of Part 40, 41, or 42 of the Civil Air Regulations, unless approved airborne weather radar equipment is installed in such airplanes:

(a) July 1, 1960, for all turbine-powered airplanes certificated under the transport category rules;

(b) January 1, 1961, for the Douglas DC–7 Series, Douglas DC–6 Series, and Lockheed 1049 and 1649 Series type airplanes; and

(c) January 1, 1962, for all airplanes certificated under the transport category rules, except C–46 type airplanes.

NOTE: Airplanes subject to the provisions of paragraph (c) of this section include, but are not limited to, the following types: Boeing 377; Convair 240, 340, and 440; Lockheed 049 and 749; Martin 202 and 404; and Douglas DC–4.

2. *Schedule for installation of equipment.*

(a) Each operator conducting passenger operations under the provisions of Part 40, 41, or 42 of the Civil Air Regulations with transport category airplanes on which airborne weather radar is not installed, shall establish a schedule for the progressive completion of such radar installations, in accordance with the provisions of section 1 of this regula-

tion. The schedule shall provide for the completion of all required radar installations on or before the dates specified in section 1 of this regulation, and the completion of at least 40 percent of the required installations on or before the following dates:

(1) August 1, 1960, for airplanes of the types specified in section 1(b), and

(2) February 1, 1961, for airplanes of the types specified in section 1(c).

(b) On or before July 1, 1960, a copy of the schedule required by paragraph (a) of this section shall be submitted to an authorized representative of the Administrator, together with a list of any airplanes the operator intends to discontinue using in the carriage of passengers prior to the date on which radar equipment must be installed.

3. *Requirement for dispatch and continuance of flight.* After the effective date specified in section 6 of this regulation, all transport category airplanes having approved airborne weather radar installed shall be operated in accordance with the following rules when used in passenger operations under Part 40, 41, or 42:

(a) *Dispatch.* No airplane shall be dispatched (or flight of an airplane started under the provisions of Part 42) under IFR or night VFR conditions when current weather reports indicate thunderstorms, or other potentially hazardous weather conditions which can be detected by airborne weather radar, may reasonably be expected to be encountered along the route to be flown, unless approved airborne weather radar equipment installed in the airplane is in a satisfactory operating condition.

(b) *En route.* In the event the airborne weather radar becomes inoperative en route, the airplane shall be operated in accordance with the instructions and procedures specified in the operations manual for such occurrence. After the date specified by section 1 of this regulation for the mandatory installation of approved airborne weather radar on the type of airplane involved, such instructions and procedures shall meet with the approval of an authorized representative of the Administrator.

4. *Exceptions.* The provisions of this regulation shall not apply to airplanes used (a) solely within the State of Hawaii or within the State of Alaska and that portion of the Dominion of Canada west of longitude 130° West, between latitude 70° North and latitude 53° North, or (b) during all-cargo, training, test, or ferry flights.

5. *Electrical power supply.* Contrary provisions of the Civil Air Regulations notwithstanding, an alternate electrical power supply need not be provided for airborne weather radar equipment.

6. *Effective date.* This Special Civil Air Regulation shall become effective on January 5, 1962, and supersedes Special Civil Air Regulation No. SR-436A.

Section 43.45 of the Civil Air Regulations currently provides that a pilot shall not permit any person to be carried in the aircraft who is obviously under the influence of intoxicating liquor. This provision has also served its purpose well. However, when applied to air carrier operations, this regulation has not been entirely effective to prevent incidents such as those which recently have taken place. Placing the responsibility on the pilot is not satisfactory in the case of air carrier operations since, under most conditions, the pilot is not present to observe the appearance and conduct of passengers as they board the aircraft, but is engaged elsewhere in essential duties regarding the flight.

The primary responsibility for preventing intoxicated persons from boarding air carrier aircraft must be placed on those who have an adequate opportunity to prevent the occurrence. The air carrier has both ground personnel and cabin attendants who are in a position to detect those persons who appear to be intoxicated and to refuse such persons permission to board the aircraft. The proposed amendments to Parts 40, 41, and 42 of the Civil Air Regulations place on the carrier the responsibility of not permitting any person to board its aircraft if such person appears to be intoxicated. Some air carriers have developed their own procedures and instructions to appropriate personnel in recognition of a responsibility in this area. This regulation underlines that responsibility and requires all carriers to take steps more appropriate to existing conditions. In particular it will prevent exclusive reliance on the pilot as the carrier's sole agent for this purpose. Section 43.45 is not being amended because it is always the responsibility of the pilot in command to refuse permission for the carriage of any person who is under the influence of intoxicating liquor regardless of the action taken by other airline employees if presence of such person is known to him.

Comments received in regard to the 24-hour reporting period point out that due to crew rotations, weekends and periods when the air carriers' general offices are closed, coupled with the minimum time required to process these reports, such a short period would place a serious burden on the carriers. After consideration of these circumstances, it has been decided to lengthen the reporting period to 5 days. It is felt that this allows sufficient period in which to gather the information and make the necessary report.

In response to comments other changes have been made in paragraph (d). One comment received from an air carrier points out that the rule as proposed requires the making of a report even where a passenger who was unaware of the restriction imposed by paragraph (a) complies with it upon request. It has been determined that whatever advantages might be derived by requiring such reports would be outweighed by the embarrassment and possible adverse publicity to the carrier and passenger concerned. Consequently, the paragraph has been revised to require that only those violations of paragraph (a) which persist after the passenger has been informed of its provision must be reported. Also, the phrase "under the influence of alcoholic beverage" has been changed to "appears to be intoxicated". The purpose of this change is to bring the language in paragraph (d) into conformity with that presently found in paragraphs (b) and (c).

In addition to the changes made in response to comments, the Agency has made another change in paragraph (d). The proposed rule required a report of disturbances while boarding an air carrier aircraft. Upon further consideration there does not appear any necessity for requiring a report under these circumstances. If the person is not permitted to board the aircraft there has been no safety threat involved and no necessity for a report of the incident to the Federal Government.

Amendment added new paragraphs (c) and (d) to section 40.371.

Amendment 40–32

Carriage of Cargo in Passenger Compartments

Adopted: November 27, 1961
Effective: January 2, 1962
Published: December 1, 1961 (26 F.R. 11354)

NOTE: The effective date of this amendment was postponed to January 20, 1962, by Amendment 40–33, adopted December 28, 1961. On January 19, 1962, Amendment 40–32 was rescinded by Amendment 40–34. The preamble of Amendment 40–32 is being retained as it contains the basic background leading to the promulgation of rules concerning the carriage of cargo in passenger compartments.

The currently effective provisions of section 40.153 of the Civil Air Regulations govern the carriage of cargo in the passenger compartment of an air carrier airplane. This section provides, in part, that cargo shall not be carried aft of seated passengers. The intent of this provision was to safeguard passengers from any possible injury which could be caused by the shifting forward of cargo in the event the airplane was involved in a survivable crash involving high deceleration forces. The present rule, however, does not recognize that this desired safeguard could be accomplished equally well by the incorporation of suitable methods of cargo stowage designed to prevent the shifting of cargo in accidents of this nature.

As a result of a request from the air carrier industry to permit the carriage of cargo in the passenger compartment in cargo bins specifically designed for this purpose, the Federal Aviation Agency issued a notice of proposed rule making which was published in the Federal Register (24 F.R. 8302) and circulated as Civil Air Regulations Draft Release No. 59–15 dated October 6, 1959, and titled "Carriage of Cargo in Passenger Compartments." This notice proposed to amend Parts 40, 41, and 42 of the Civil Air Regulations to authorize the carriage of cargo in the passenger compartment without regard to its location with respect to seated passengers, provided:

(a) The cargo is carried in approved bins which meet the strength and other safety provisions applicable to cargo and passenger compartments prescribed in Part 4b or other airworthiness part under which the airplane is type certificated, and

(b) The combined weight of the cargo and the approved bin or compartment does not exceed 85 percent of the load used in determining the design conditions for the structure (bin) involved.

It was also proposed in Draft Release 59–15 to continue the authorization to carry cargo forward of seated passengers in the passenger compartment under practically the same provisions as are presently in effect. However, one additional requirement was proposed to be incorporated into the current provision. This requirement was that cargo not carried in approved containers or compartments must be secured by tiedowns possessing sufficient strength to eliminate the possibility of shifting under emergency landing conditions.

The comments received in response to the draft release were for the most part favorable and they reflected endorsement of the principles of the proposal. However, definite opposition was expressed in the comments with regard to the requirement that tiedowns for cargo not carried in approved bins or compartments shall possess sufficient strength to withstand the inertia forces of an emergency landing condition. It was contended that to modify the existing rules by the addition of this requirement would prevent an operational practice which has been utilized for a number of years without adversely affecting safety. Therefore, in view of these comments, and since it was not the intent of the proposal to materially change the existing rule but only to provide additional means of safely carrying cargo in the passenger compartment, the final rule does not contain this requirement.

It will be noted that the final rule sets forth specific minimum requirements which a cargo bin must meet to be "approved" by a representative of the Administrator. Draft Release 59–15 contained notice of the Federal Aviation Agency's intension to require the use of "approved" cargo bins but did not specify the exact requirements for the "approval." The substance of the proposed rule on cargo bin specifications provided that

the cargo bin would be required to meet the strength and other safety provisions of Part 4b or other appropriate part under which the airplane is type certificated, and that the bin would be considered as an item of mass for inertia force computations. After further study of these provisions it has been determined that the incorporation into the rule of specific minimum requirements for cargo bins would provide guidance to the industry and eliminate the need for additional directives by the Federal Aviation Agency on this subject. Accordingly, the final rule specifies the minimum requirements which such cargo bins must meet.

It will also be noted that this amendment deletes section 40.153–1, since the material covered by that section is either incorporated in section 40.153, or is no longer applicable.

Interested persons have been afforded an opportunity to participate in the making of this regulation (24 F.R. 8302), and due consideration has been given to all relevant matter presented.

Amendment revised section 40.153 and deleted section 40.153–1.

Amendment 40–33

Carriage of Cargo in Passenger Compartments

Adopted: December 28, 1961
Effective: January 2, 1962
Published: December 30, 1961 (26 F.R. 12762)

On November 27, 1961, the Federal Aviation Agency issued Amendment 40–32 to Part 40 of the Civil Air Regulations (26 F.R. 11354), to become effective on January 2, 1962.

Subsequent to the issuance of this amendment, certain air carriers requested reconsideration of those provisions of the amendment restricting the height of the cargo bins which may be approved for the carriage of cargo in the passenger compartments. A preliminary reevaluation of this request indicates that the height restriction may be relaxed or eliminated without adversely affecting safety. Accordingly, in order to provide sufficient time for the completion of this reevaluation and to make other required clarifying changes, the effective date of Amendment 40–32 is being postponed from January 2, 1962, until January 20, 1962.

In view of the foregoing, I find that notice and public procedure hereon are impracticable, and good cause exists for making this amendment effective on less than 30 days' notice.

Amendment postponed the effective date of Amendment 40–32 from January 2, 1962, until January 20, 1962.

Amendment 40–34

Carriage of Cargo in Passenger Compartments

Adopted: January 19, 1962
Effective: January 20, 1962
Published: January 23, 1962 (27 F.R. 649)

Section 40.153 of Part 40 was revised by Civil Air Regulations Amendment 40–32 (26 F.R. 11354) issued November 27, 1961, to become effective January 2, 1962. This section provides a means by which cargo may be safely carried in the passenger compartment of an air carrier airplane.

Subsequent to the issuance of Amendment 40–32, certain air carriers requested reconsideration of section 40.153(a)(3) of that amendment which specified that approved cargo bins installed aft of passengers shall not be higher than the height of the passenger seats on the airplane. In addition, comments were received with regard to paragraphs (a)(1) and (a)(4) which indicated a need for a clarification of the strength requirements which a cargo bin and its attachments must meet for approval.

The effective date of Amendment 40–32 was postponed from January 2, 1962, to January 20, 1962, by Amendment 40–33 (26 F.R. 12762). This postponement of the effective date was necessary to provide sufficient time for a complete reevaluation of the provisions of section 40.153(a)(3) and to make other clarifying changes.

As a result of this reevaluation it has been concluded that, regardless of its height, a properly loaded cargo bin which has been constructed and installed in the airplane to meet specific strength requirements will not adversely affect safety if it does not obscure any passenger's view of the "seat belt" or "no smoking" sign. Therefore, this amendment eliminates the height restriction for cargo bins and in lieu thereof adds provisions which (1) require proper distribution of the weight of the cargo within the bin, (2) prohibit use of bins which exceed the structural load limitation on components of the airplane, and (3) prohibit installing the bin in a location which will obscure any passenger's view of the "seat belt" or "no smoking" sign, unless an auxiliary sign, or some other approved means for notification of the passenger is provided.

The provisions of paragraphs (a)(1) and (a)(4) of this amendment specify the strength which a cargo bin and its attachments must meet for approval. It was intended, in Amendment 40–32, that this strength be such that in the event the airplane was involved in a survivable crash involving high deceleration forces, the cargo bin would not shift forward or be dislodged and injure the passengers. To provide this safeguard, the strength of the bin and its attachments must be able to withstand at least the load factors and emergency landing conditions applicable to the passenger seats installed on the airplane. The combined weight of the cargo bin and its contents must be used to determine this strength. However, in view of the comments received, it appears that the wording of paragraphs (a)(1) and (a)(4) of Amendment 40–32 did not make this strength requirement completely clear. Accordingly, this amendment rewords these paragraphs to specify more clearly the strength requirements which a cargo bin and its attachments must meet for approval.

In addition to the aforementioned changes, other editorial changes were made in this amendment for the purpose of clarification.

Since this amendment relaxes the height requirement of a previous rule which becomes effective January 20, 1962, and imposes no additional burden on any person, I find that notice and public procedure hereon are impractical and unnecessary, and good cause exists for making this amendment effective on less than 30 days' notice.

Amendment rescinded Amendment 40–32, revised section 40.153, and deleted section 40.153–1.

Amendment 40–35

Mechanical Reliability Reports

Adopted: February 6, 1962
Effective: March 12, 1962
Published: February 10, 1962 (27 F.R. 1242)

The Federal Aviation Agency published as a notice of proposed rule making (26 F.R. 1410) and circulated as Civil Air Regulations Draft Release No. 61–2 dated February 8, 1961, a proposal to amend Parts 40, 41, 42, and 46 of the Civil Air Regulations to establish requirements for the reporting of specific types of malfunctions failures, and defects occurring to airplanes.

With the adoption of this amendment, it should be noted that the title, Daily Mechanical Report (DMR), is changed and will hereafter be known as the Mechanical Reliability Report (MRR). The Federal Aviation Agency believes the name to be appropriate in that it is more descriptive of the concept of the report.

The currently effective provisions of Part 40 require operators to submit daily a report known as a daily mechanical report (DMR) which contains information concerning each failure, malfunctioning, or other defect, regardless of where detected, which may

reasonably be expected by the air carrier to cause a serious hazard in the operation of an airplane.

The lack of specific reporting requirements and the fact that each air carrier reported only those items which, in the opinion of the air carrier, constitute a hazard, heretofore resulted in inadequate and nonuniform reporting. Various attempts were made to correct these inadequacies, such as joint industry-government meetings and the use of a trial reporting guide for a six-month period. Some improvement in reporting was accomplished; however, satisfactory reporting was not achieved. In accordance with the proposal contained in Draft Release 61-2, this amendment specifies certain airplane and airplane component failures, malfunctions, or defects which must be reported by air carriers in mechanical reliability reports. In addition, an air carrier is required to report other airplane and airplane component failures, malfunctions, or defects, even though they are not specified in the rule, when the air carrier is of the opinion that they may seriously endanger the safe operation of its airplanes.

In Draft Release 61-2 it was proposed to require air carriers to report engine shutdowns during flight necessitated or caused by airplane component failure, malfunction, or defect. Although the Agency evaluates the significance of every engine shutdown, regardless of cause or effect, it has been determined that it is presently not necessary to require all engine shutdowns to be included in mechanical reliability reports. Accordingly, in this amendment, the proposed rule has been changed to require mandatory reporting of engine shutdowns only when they involve engine flameout, foreign object ingestion or icing, external damage to the engine or airplane structure, or when more than one engine is shutdown during flight. Paragraph (b)(17) of section 40.508 has been worded to make it clear that action taken to shutdown an engine in flight need not be reported as an emergency action under the requirements of that provision.

Draft Release 61-2 contained a proposal to require reports of failures of the landing gear to extend or retract properly during flight. To avoid any misunderstanding of our intention that landing-gear doors be included in this reporting requirement, this final rule expressly provides for reporting the occurrence of a failure, malfunction, or defect which involves the extension or retraction of the landing gear, or the opening or closing of the landing-gear doors during flight.

Also, it will be noted that paragraph (b)(15) of section 40.508 has been changed from the original proposal so that failures, malfunctions, or defects in airplane structures are required to be reported only if a major repair is necessary.

Many failures, malfunctions, or defects are required to be included in the mechanical reliability report only if they occur during "flight." A note has been added to the rule to explain that in complying with the reporting requirements of section 40.508 an airplane is to be considered in "flight" from the moment it leaves the surface of the earth on takeoff until it touches down at a place of landing.

Attention is directed to the fact that Draft Release 61-2 proposed 13 specific reporting items while this amendment contains 17 reportable items. This increase in the number of items is the result of rewording and expanding the previous items to facilitate administrative handling of the reports within the Agency with automatic data processing equipment.

Another change has been made in this amendment which differs from the original proposal. This change provides that the report shall cover a 24-hour period beginning at 0900 hours local time each day and is to be submitted by 0900 hours of the following day rather than the midnight to midnight report period proposed. In this respect, local time is considered to be the time at each air carrier's main maintenance base. This revision does not alter the 24-hour interval made in the proposal, but is incorporated so that the reports can be handled more expeditiously by the Agency under its new automatic data processing system for evaluating individual reports and for distributing mechanical reliability report summaries.

Each air carrier is presently required by paragraph (a) of section 40.509 (Mechanical interruption summary report) to regularly file a summary report of "All interruptions to a scheduled flight, unscheduled changes of airplanes en route, and unscheduled stops and diversions from route which result from known or suspected mechanical difficulties or malfunctions." In response to comment received, paragraph (a) of section 40.509 is being amended to avoid duplicate reporting under paragraph (a) of those malfunctions or mechanical difficulties required to be reported under section 40.508.

The Federal Aviation Agency believes that reports of the failures, malfunctions, and defects required under this amendment, plus additional reports received from the air carriers regarding other occurrences of failures, malfunctions, and defects they consider hazardous, will provide complete, accurate, and uniform reporting. Safety will be served better by this amended reporting procedure as the Agency will be able to disseminate to industry improved reports of hazardous conditions pertaining to airplane systems, components, and equipment. In addition, through analysis of information developed from reports received, the Agency will be able to detect deteriorating conditions in airplane systems, components, and equipment, and issue Airworthiness Directives and Alert Notices before such conditions reach hazardous proportions.

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.

Amendment revised section 40.508 and paragraph (a) of section 40.509.

Amendment 40–36

Illumination of Passenger Emergency Exit Markings

Adopted: February 12, 1962
Effective: March 20, 1962
Published: February 16, 1962 (27 F.R. 1452)

The Federal Aviation Agency published as a notice of proposed rule making (26 F.R. 9241) and circulated as Civil Air Regulations Draft Release No. 61–20 dated September 21, 1961, a proposal to amend Parts 40, 41, 42, and 46 of the Civil Air Regulations to require the illumination of passenger emergency exit markings during all takeoffs and landings, day and night.

In proposing these amendments, the Agency considered several recent accidents and incidents where illumination of the emergency exits during daylight hours may have resulted in a more effective evacuation of the passengers and crew. The Civil Air Regulations as originally adopted did not require daytime use of the emergency exit lighting system. It is now considered that this additional lighting during daylight hours is necessary to provide maximum safety where the evacuation of large numbers of passengers is concerned.

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. In general, all comments received from interested persons as a result of the Agency's notice of proposed rule making were favorable to the proposal.

Amendment revised subparagraph (2) of section 40.173(f).

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