Civil Aeronautics Manual 49

Transportation of Explosives and Other Dangerous Articles

December 15, 1956

408526 O - 56 - 2

Introductory Note

Civil Aeronautics Manual 49 contains in consolidated form (1) Civil Air Regulations Part 49, Transportation of Explosives and Other Dangerous Articles, and Amendments 1 and 2, adopted by the Civil Aeronautics Board; (2) any rules, policies, and interpretations issued by the Administrator of Civil Aeronautics in application to the various sections of the regulations; and (3) Special Civil Air Regulations adopted by the Board which affect Part 49.

CAA *rules* are supplementary regulations issued pursuant to authority expressly conferred on the Administrator in the Civil Air Regulations. Such rules are mandatory and must be complied with.

CAA *policies* provide detailed technical information on recommended methods of complying with the Civil Air Regulations. Such policies are for the guidance of the public and are not mandatory in nature.

CAA *interpretations* define or explain words and phrases of the Civil Air Regulations. Such interpretations are for the guidance of the public and will be followed by the Administration in determining compliance with the regulations.

This manual is arranged to give the number, title, and text of each section of the regulations followed by any rules, policies, or interpretations applicable to that section of the regulations. These rules, policies, or interpretations of the Administrator are identified by consecutive dash numbers appended to the regulation section number.

This manual shall become effective December 15, 1956, unless otherwise indicated and will be revised from time to time in accordance with the changes in Civil Air Regulations Part 49, or as the need for additional explanations are brought to the attention of the Administrator.

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Transportation of Explosives and Other Dangerous Articles

49.0 *Applicability of part.* Explosives or other dangerous articles, including flammable liquids, flammable solids, oxidizing materials, corrosive liquids, compressed gases, and poisonous substances, shall not be loaded in or transported by civil aircraft in the United States, or transported anywhere in air commerce in civil aircraft of United States registry except as provided in this part.

49.1 *Definitions.* (a) As used in this part the words listed below shall be defined as follows:

(1) *Explosives.* Those liquids, gases, or solids specified as "Forbidden Explosives," Class A, Class B, or Class C explosives by the ICC Regulations (49 CFR Parts 71–78).

(2) *Flammable*[1] *liquid.* A flammable liquid is any liquid which gives off flammable vapors (as determined by flash point from Tagliabue's open-cup tester, as used for test of burning oils) at or below a temperature of 80° F.

(3) *Flammable solid.* A flammable solid is a solid substance, other than one classified as an explosive, which is likely under conditions incident to transportation, to cause fires through friction, through absorption of moisture, through spontaneous chemical changes, or as a result of retained heat from the manufacturing or processing.

(4) *Oxidizing material.* An oxidizing material is a substance such as a chlorate, permanganate, peroxide, or a nitrate, that yields oxygen readily to stimulate the combustion of organic matter.

(5) *Corrosive liquids.* Corrosive liquids are those acids, alkaline caustic liquids, and other corrosive liquids which, when in contact with living tissue, will cause severe damage to such tissue by chemical action, or which, in case of leakage, will materially damage the aircraft structure or cargo; or which are likley to cause fire when in contact with organic matter or with certain chemicals.

(6) *Compressed gas.* (i) A compressed gas for the purposes of this part is defined as any material or mixture having in the container either an absolute pressure exceeding 40 pounds per square inch at 70° F., or an absolute pressure exceeding 104 pounds per square inch at 130° F., or both; or any liquid flammable material having a Reid[2] vapor pressure exceeding 40 pounds per square inch absolute at 100° F. (See subparagraph (7) (i) of this paragraph for gases defined and classified as poisonous.)

(ii) Any compressed gas, as defined in this subparagraph, shall be classified as a flammable compressed gas if either (*a*) a mixture of 13 percent or less (by volume) with air forms a flammable mixture or (*b*) the flammable range with air is greater than 12 percent regardless of the lower limit.

(7) *Poisonous articles.* Poisonous articles for the purpose of this part are divided into four classes defined as follows:

(i) *Extremely dangerous poisons; Class A.* Poisonous gases or liquids of such nature that a very small amount of gas, or vapor of the liquid, mixed with air is dangerous to life. This class includes: chlorpicrin, cyanogen, diphosgene, ethyldichlorarsine, hydrocyanic acid, lewisite, methyldichlorarsine, mustard gas, nitrogen peroxide (tetroxide), phenylcar-

[1] Chapter 39, "Explosives and Combustibles," of Title 18 of the U. S. Code, Public Law 772, 80th Congress, 2d Sess.; 18 U. S. C. 831 et seq., enacted June 25, 1948, which supersedes the Transportation of Explosives Act of March 4, 1921, adopts the term "flammable" in place of the currently-used term "inflammable." As used in this part "flammable" has the same meaning as "inflammable" and "nonflammable" the same meaning as "noninflammable" as used by current ICC Regulations.

[2] American Society for Testing Materials Method of Test for Vapor Pressure of Petroleum Products (D-323).

bylamine chloride, phosgene (diphosgene). (Dilute solutions of hydrocyanic acid of not exceeding 5 percent strength are classed as poisonous articles, Class B.)

(ii) *Less dangerous poisons; Class B.* Poisonous liquids and solids, including pastes and semisolids, are substances of such nature that are chiefly dangerous by external contact with the body or by their being taken internally as in contaminated food or feeds.

(iii) *Tear gas or irritating substances; Class C.* Tear gases are liquid or solid substances which upon contact with fire or when exposed to air give off dangerous or intensely irritating fumes, such as brombenzylcyanide, chloracetophenone, diphenlyaminechlorarsine, and diphenylchlorarsine, but not including any poisonous article, Class A.

(iv) *Radio active materials; Class D.* A radioactive material is any material or combination of materials which spontaneously emits ionizing radiation. For the purpose of these rules, radioactive materials are divided into three groups, according to the type of radiation emitted at any time during transportation, as follows:

(*a*) *Group I radioactive materials.* Group I radioactive materials are those materials which emit any gamma radiation, either alone or with electrically charged particles or corpuscles.

(*b*) *Group II radioactive materials.* Group II radioactive materials are those materials which emit neutrons and either or both of the types of radiation characteristic of Group I radioactive materials.

(*c*) *Group III radioactive materials.* Group III radioactive materials are those materials which emit only electrically charged particles or corpuscles (i. e., alpha and or beta radiation).

(8) *"Unit" of gamma radiation.* "Unit" of gamma radiation is one milliroentgen per hour at a meter for "hard gamma" radiation, i. e., that amount of gamma radiation which will have the same effect on sensitive photographic film as one milliroentgen per hour at a meter of "hard gamma" radiation of radium filtered through ½ inch of lead.

(9) *Passenger-carrying aircraft.* A passenger-carrying aircraft is an aircraft carrying any individual other than a flight crew or crew member, company employee, or an authorized government representative.

(10) *Cargo aircraft.* A cargo aircraft is an aircraft other than a passenger-carrying aircraft which is carrying goods or property.

(11) *Marking.* Marking is the display on the container of the name of the articles inside, as listed in the commodity list of the ICC Regulations.

(12) *Labeling.* Labeling is the display on the container of an appropriate label specified for the particular class of articles either by the ICC regulations or by the rules of this part.

(13) *ICC Regulations.* ICC Regulations shall mean the "Interstate Commerce Commission's Regulations for Transportation of Explosives and Other Dangerous Articles," effective January 7, 1941, as amended or revised from time to time [3] (49 CFR Parts 71–78).

(14) *Aircraft operator.* An operator of aircraft shall include the owner, lessee, or any other person who causes or authorizes the operation of the aircraft.

49.3 *Packing, marking, labeling, and shippers' certification requirements.* (a) Unless otherwise specifically provided in this part, explosives and other dangerous articles shall be packed and marked in accordance with such requirements prescribed in Parts 72 and 73 of the ICC regulations as are applicable to rail express, including any instructions that are necessary for safe handling. Liquids shall be packed only in containers which are securely closed, sufficient in strength to prevent any leakage or distortion of the containers caused by change in temperature or altitude during transit, and so filled as to provide adequate outage. All explosives or dangerous articles shall be conspicuously labeled by the shipper even though they may be exempted from ICC labeling requirements by virtue of ICC quantity and packing limitations.

(b) No shipper shall offer and no air carrier or other operator of aircraft shall knowingly accept explosives or dangerous articles for carriage by air unless the shipper or his authorized agent has certified that the ship-

[3] The regulations referred to may be obtained from the Government Printing Office, Washington 25, D. C., or from the Bureau of Explosives 30 Vesey Street, New York 7, N. Y.

ment complies with the requirements of this part. No shipment shall be accepted for transportation by passenger-carrying aircraft unless the package is accompanied by or shows a clear and plainly visible statement that it is within the limitations prescribed for passenger operations. Any operator of aircraft may rely on such a certificate as prima facie evidence that the shipment so certified complies with the requirements of this part.[4]

(c) Explosives or other dangerous articles acceptable under the provisions of this part for transportation in air commerce shall bear the appropriate ICC label, or a label which is a true copy of a label portrayed in IATA Traffic Conference Resolution 608 (as amended) as approved by the Board under Section 412 of the Civil Aeronautics Act of 1938, as amended, on December 27, 1954. When the label used does not bear the shippers' certification, such certification shall be made in duplicate and signed by the shipper or authorized agent for each consignment. One signed copy shall accompany the shipment and the other signed copy shall be retained by the originating carrier. The carrier may also require the shipper to have the shipper's statement certified by an authority approved by the carrier.

Passenger-Carrying Aircraft

49.10 *Acceptable explosives and other dangerous articles on aircraft carrying passengers.* No article listed in Appendices A or B of this part shall be carried on passenger-carrying aircraft, and no other explosive or dangerous article shall be carried in passenger-carrying aircraft except as provided in Sections 49.11 through 49.18.

49.11 *Explosives.* Class C explosives may be carried. Class C explosives shall be packed, marked, and labeled as required by the ICC Regulations (49 CFR Part 72). The maximum quantity that may be packed in one outside container is 50 pounds.

49.12 *Flammable liquids.* Flammable liquids may be carried when packed in quantities of not more than one quart in inside metal containers or in quantities of not more than one pint in inside glass or earthenware containers. Each inside container shall be packed in a strong outside container with cushioning and absorbent material where necessary to prevent breakage and leakage: *Provided,* That viscous flammable liquids, such as cement mastics and sealers, may also be carried in quantities of not more than 8 fluid ounces in collapsible tubes which are packed in quantities of not more than 16 fluid ounces in any one strong outside container.

49.13 *Flammable solids and oxidizing materials.* (a) Except for the items listed in subparagraphs (1) through (6) of this paragraph which shall be specially handled as provided therein, flammable solids and oxidizing materials may be carried in quantities of not more than 16 ounces net weight in inside metal or glass containers, suitably cushioned with nonflammable material where necessary to prevent breakage or leakage, and packed in strong outside containers. The maximum quantity that may be packed in any outside container is 25 pounds.

(1) *Liquid or solid organic peroxides.* Liquid or solid organic peroxides shall be packed in inside containers of not over one pound or one pint capacity. Not more than one such inside container suitably cushioned with nonflammable material shall be packed in a strong outside container. (See corrosive liquids for hydrogen peroxide.)

(2) *Calcium hypochlorite, dry.* Calcium hypochlorite, dry, containing more than 8.80 percent available oxygen (39 percent available chlorine) shall be packed in inside glass or metal containers of not over 5-pound capacity. Each container shall be packed in strong outside containers.

(3) *Matches.* Strike-on-box, book, or card-type matches shall be packed in tightly closed metal inside containers. The maximum quantity of matches that may be packed in any outside container is 25 pounds.

(4) *Picrate of ammonia, picric acid, urea nitrate, trinitrobenzene, and trinitrotoluene.* Picrate of ammonia, picric acid, urea

[4] The following statement signed by a responsible agent of the shipper will be accepted as meeting this requirement: "This is to certify that the contents of this package are properly described by name and are packed and marked and are in proper condition for transportation according to the regulations prescribed by the Interstate Commerce Commission and the Civil Aeronautics Board."

For shipment on passenger-carrying aircraft add the following: "This shipment is within the limitations prescribed for passenger-carrying aircraft."

nitrate, trinitrobenzene, or trinitrotoluene, wet with not less than 10 percent water, may be carried only when shipped as a drug, medicine, or chemical, and shall be packed in a glass container enclosed in a strong fiber carton properly cushioned with nonflammable material in an outside shipping case provided that not more than 16 ounces net content shall be packed in any one outside container.

(5) *Pyroxylin plastics.* Pyroxylin (nitrocellulose) plastics shall be securely enclosed in tight inside metal containers packed in quantities of not more than 25 pounds in strong outside containers.

(6) *Motion picture film.* Motion picture film (nitrocellulose base) shall be packed, marked, and labeled in accordance with the requirements of the ICC Regulations (49 CFR Part 72).

49.14 *Acids and other corrosive liquids.* (a) Acids and other corrosive liquids may be carried when packed in bottles of not more than one pint capacity, suitably cushioned with nonflammable material to prevent breakage or leakage, and packed in a metal can. Each can shall be packed in a strong outside container.

(b) Electric storage batteries containing electrolyte or corrosive battery fluid, of the nonspillable type, protected against short circuits, and completely and securely boxed, may be carried.

49.15 *Nonflammable compressed gases.* Nonflammable compressed gases may be carried. Shipment shall be made in ICC approved cylinders, and pressures shall not exceed those permitted by the ICC.

49.16 *Poisonous liquids.* Class B poisonous liquids may be carried in quantities of not more than one pint in glass containers, suitably cushioned to prevent breakage or leakage, or not more than one quart in inside metal containers. Each inside container shall be packed in a strong outside wooden or fiberboard box.

49.17 *Poisonous solids.* Class B poisonous solids may be carried:

(a) Except for cyanides which shall be packed as set forth below, Class B poisonous solids shall be packed in tightly closed inside containers of glass, earthenware, or metal, or in lock-corner sliding-lid wooden boxes lined to prevent sifting, of not more than 5 pounds capacity each. Inside containers shall be securely packed in outside fiberboard or wooden containers. Not more than 25 pounds of any such article shall be packed in any one outside container.

(b) Cyanides and cyanide mixtures shall be packed in a tightly closed glass, earthenware, or metal inside container, of not over one pound capacity, securely cushioned and packed in quantities of not more than 5 pounds in outside wooden or fiberboard boxes or in wooden barrels.

49.18 *Radioactive materials.* Radioactive materials—Class D, Groups I, II, and III (liquid, solid, or gaseous) may be carried when packed, marked, and labeled in accordance with the provisions of sections 73.391 and 73.394 of the ICC Regulations. (See sec. 49.55 for handling of radioactive materials in aircraft. See also sec. 49.62 where certain other types of radioactive materials are exempted from certain of the requirements of this part.)

Cargo Aircraft

49.41 *Articles which may be carried in cargo aircraft.* In addition to the articles acceptable for transportation on aircraft carrying passengers, any article acceptable for and packed, marked, and labeled in accordance with the ICC Regulations (49 CFR Parts 71–78) for transportation by rail express may be carried in cargo aircraft. *Provided,* That no article listed in Appendix A of this part shall be carried except under the provisions of section 49.71. The maximum quantity in any one outside package or container shall not exceed that prescribed in the commodity list of the ICC Regulations (49 CFR Part 72).

Loading and Handling Requirements

49.51 *Cargo location.* (a) Articles subject to the requirements of this part shall not be carried in the cabins of passenger-carrying aircraft.

(b) Any article acceptable only for cargo aircraft shall be carried in accessible cargo pits or bins or in the cabin.

(c) Articles shall not be placed in the same cargo pit or bin nor placed side by side in cabins so that:

(1) Yellow label material is mixed with either white label or with red label material, or

(2) White label material is mixed with poison label material (red printing on white background).

49.52 *Pilot notification.* When articles subject to the packing, marking, and labeling requirements of this part are carried on aircraft, the operator shall be responsible for notifying the pilot of the proper shipping name of the article as shown in the commodity list of Part 72 of the ICC Regulations, the type of label, quantity, and the location thereof. The pilot notification requirement may be met by entering the required information on the airplane load manifest.

49.53 *Damaged or improperly marked articles.* (a) If any package coming under the provisions of this part appears to be damaged, leaking, or improperly marked and labeled, it shall be removed from the aircraft and shall not be returned to transportation by air until it has been determined that the package and its contents comply with the requirements of this part.

(b) In any instance where it is indicated that the requirements of this part have been violated, a report shall immediately be made to the nearest representative of the Administrator or Board.

49.54 *Quantity limitations.* Except as provided below not more than 50 pounds net weight of any article subject to the packing and labeling provisions of this part may be carried in any one cargo pit or bin on passenger-carrying aircraft, or in any inaccessible cargo pit or bin on any aircraft:

(a) Not more than 150 pounds net weight of compressed nonflammable gas may be carried in any single cargo pit or bin on passenger-carrying aircraft or in any inaccessible cargo pit or bin in any aircraft.

(b) No quantity limit is prescribed for calcium hypochlorite, pyroxylin plastics, motion picture film, or radioactive material Group III.

(c) Not more than 40 units of radioactive material Groups I or II shall be carried on any aircraft.

(d) Except as provided above for inaccessible cargo pits or bins, no quantity limitations apply to the carriage of explosives or other dangerous articles under the provisions of this part in cargo aircraft.

49.55 *Special requirements for radioactive materials.* (a) Whenever any shipment of radioactive materials is damaged or appears to be damaged, it shall be removed from transportation and segregated as far as possible from human contact. The shipper shall immediately be contacted for disposal instructions, and the Administrator or the Board shall also be notified.

(b) Whenever there is any actual spillage of radioactive materials of such nature that the materials are no longer contained within their inner containers, no attempt shall be made to remove or clean up the materials until instructions are received from the shipper or other qualified persons, and then only when necessary protective measures have been taken, and qualified persons are present to supervise the handling.

(c) A container or group of containers of radioactive materials shall not be placed closer than the distance specified in the distance table to any area that may be continuously occupied by crew members or passengers. If more than one such container is present the distance shall be computed from the table below by adding together the number of units shown on the label of each package.

Table for Personnel Separation [1]

Total number of units: [2]	*Minimum distance to crew members and passengers (feet)* [3]
0–2	1
3–5	2
6–10	3
11–20	4
21–30	5
31–40	6

[1] This table is designed to afford maximum protection to human beings from the effects of radiation and will not protect X-ray film from such effects under all conditions of exposure. Distance separation required by this table for Groups I and II (red label) radioactive materials is not required for Group III (blue label) radioactive materials.

[2] Total number of units refers to the number found on the red label of a single package entered on the line reading, "Radiation Units from Package; No. ." For two or more packages stored together, the total of the numbers of all such packages is meant.

[3] Distance means the number of feet from the nearest edge of the nearest radioactive container.

(d) If any aircraft is engaged principally or entirely in the transportation of radioactive materials, it shall be the responsibility jointly of the shipper and the carrier to monitor all personnel involved so that the accepted limits of personnel radiation exposure are not exceeded.

Exempted Articles

49.61 *Aircraft equipment.* Signalling devices, aviation fuel and oil carried in tanks complying with fuel and oil tank installation provisions of this subchapter, and other equipment and materials necessary for the safe operation of the aircraft on which they are carried shall be exempt from the provisions of this part.

49.62 *Radioactive materials.* (a) Radioactive materials which meet all of the following conditions are exempt from packing, marking, and labeling requirements required by this part:

(1) The package shall be such that there can be no leakage of radioactive material under conditions normally incident to transportation.

(2) The package shall contain not more than 0.1 millicuries of radium, or polonium, or that amount of strontium 89, strontium 90, or barium 140 which disintegrates at a rate of more than 5 million atoms per second; or not more than that amount of any other radioactive substance which disintegrates at a rate of more than 50 million atoms per second.

(3) The package shall be such that no significant alpha, beta, or neutron radiation is emitted from the exterior of the package, and the gamma radiation at any surface of the package shall be less than 10 milliroentgens in 24 hours.

(b) Manufactured articles other than liquids, such as instrument or clock dials of which radioactive materials are a component part, and luminous compounds, when securely packed in strong outside containers are exempt from packing, marking, and labeling requirements, provided the gamma radiation at any surface of the package is less than 10 milliroentgens in 24 hours.

(c) (1) Radioactive materials such as ores, residues, etc., packed in strong, tight containers are exempt from packing and labeling requirements for shipment in planeload lots, provided the per planeload radiation intensity at one meter from any outside surface of the load (as loaded in place in the airplane) does not exceed 10 milliroentgens per hour of gamma radiation or equivalent. There shall be no loose radioactive material in the airplane, and the shipment must be braced and lashed so as to prevent leakage or shift of lading under normal conditions of flight.

(2) It is the responsibility of the consignor and/or consignee to supervise, respectively, all loading and unloading operations and to monitor all personnel involved so that the accepted limits of personnel radiation exposure are not exceeded.

(d) Shipments of radioactive materials made by the Atomic Energy Commission or under its direction or supervision, which are escorted by personnel who are specially designated by the Atomic Energy Commission, are exempted from the provisions of this part where special arrangements are made with and approved by the Administrator.

49.63 *Additional exempted articles.* The following articles are exempted from the provisions of this part.

(a) *Small arms ammunition.* Small arms ammunition in small quantities for personal use.

(b) *Matches.* Small quantities of matches, of the strike-on-box, book, or card type, carried on the person.

(c) *Pyroxylin plastics.* Articles manufactured from a pyroxylin plastic base such as hairbrushes, combs, and toothbrushes which are exempted from the requirements of the ICC Regulations (49 CFR Chapter I).

(d) *Safety film.* Film having an acetate base.

49.71 *Special authority.* In emergency situations or where other forms of transportation are impracticable:

(a) Deviations from any of the provisions of this part for a particular flight may be authorized by the Administrator where he finds that the conditions under which the articles are to be carried are such as to permit the safe carriage of persons and cargo.

(b) Deviations from the 2,000-millicurie quantity limitation prescribed for radioactive materials by section 49.18 may be taken by the Atomic Energy Commission for Atomic Energy Commission shipments, provided that such shipments are made in accordance with the requirements approved by the Interstate Commerce Commission for shipment by rail express and prior notification of each shipment is given by the Atomic Energy Commission in the form and manner prescribed by the Administrator.

49.71–1 *Authority to deviate from the provisions of Part 49 (CAA policies which apply to sec. 49.71 (a)).* The Administrator may grant authority to deviate from the provisions of Part 49 in those cases described in either paragraph (a) or (b):

(a) An emergency situation in which the issuance of authority to deviate from the provisions of Part 49 would serve the public interest in connection with any actual or imminent disaster such as flood, fire, storm, earthquake, or other calamitous visitation, or any humanitarian effort such as to save lives or to alleviate distress or suffering. Any situation which is solely a matter of convenience or economic advantage to the shipper, consignee or persons who desire to transport any shipment is not deemed to be an emergency situation for a deviation to be authorized under section 49.71 (a).

(b) When other forms of transportation are found to be impracticable such as when: (1) the transit time by other forms of transportation would result in spoilage, damage or forfeit the normal or intended use of the shipment at destination; (2) the destination is not safely accessible by other means of transportation.

(Published in 21 F. R. 9103, Nov. 22, 1956, effective Dec. 15, 1956.)

49.71–2 *Conditions and limitations (CAA policies which apply to sec. 49.71).* An authorization to deviate from the provisions of Part 49 will be issued only under the following conditions and limitations:

(a) The persons carried aboard the aircraft are limited to the minimum flight crew necessary to the safety of the particular flight and such other persons as are essential to the handling en route of the particular shipment for which deviation authority is requested.

(b) The shipper certifies that the shipment can be handled in air transportation with a reasonable degree of safety to persons and cargo aboard the aircraft and provides full instructions with regard to any special handling procedures and precautions to be observed which are necessary to assure safe transit.

(c) The aircraft can be located on airports for loading and unloading and operated during takeoff, en route, and landing so as to remain a safe distance from all heavily populated areas and, insofar as possible, avoid being in hazardous proximity to any place of human abode or assembly when the shipment of any explosive or other dangerous articles can create destructive forces or have lethal or injurious effect over an appreciable area as a result of accident to the aircraft or shipment.

(d) The deviation for which authorization is issued is limited to the particular flight and articles for which authorization is requested. For the purpose of this paragraph, authorization for a particular flight is issued for the entire flight from the point of origin where the articles, for which deviation authority applies, are placed aboard the aircraft to the point of destination where such articles are removed from the aircraft.

(e) The shipment is loaded, unloaded, packed, marked, stowed, and secured aboard the aircraft in accordance with any rules or special instructions of the Interstate Commerce Commission for the item or items for which deviation authority is requested.

(f) The crew of the aircraft is throughly briefed on the characteristics and proper handling of the cargo and, when any crew change is involved during the flight, the new crew shall be briefed under a hand-to-hand signature service furnished by the carrier.

(g) The holder of the authorization will notify and obtain permission from the operators or managers of the airports used in the operation.

(h) The authorization is limited to the carriage of the particular articles on civil aircraft within the continental limits of the United States including its Territories or possessions. Aircraft of United States registry engaged in air commerce outside of the United States must obtain the authorization necessary for such flights within foreign countries from the appropriate authority of each such country involved. Extra copies of the authorization should accompany the request for clearance.

(Published in 21 F. R. 9103, Nov. 22, 1956, effective Dec. 15, 1956.)

49.71–3 *Application for authorization to deviate from the provisions of Part 49 (CAA policies which apply to sec. 49.71 (a)).* (a) Application for authorization to deviate from the provisions of Part 49 will be made on Form ACA–400,

Application for Certificate of Waiver, which may be obtained from any Flight Operations and Airworthiness District Office of the Civil Aeronautics Administration (see Appendix C for sample form). The application will be completed in triplicate and submitted to the nearest Flight Operations and Airworthiness District Office. The application should be completed as follows:

(1) Type or print in ink.

(2) Give complete information on items 1 through 7 (if additional space is required, use a separate sheet in triplicate which shall be attached to each copy of the application and made a part thereof).

(3) Under item 3, insert the appropriate section of Part 49 for which deviation authorization is desired.

(4) Item 4, describe the explosives or dangerous articles to be carried.

(5) Item 5, state the airports to be used and describe the routes to be flown.

(6) Item 6, state the date(s) on which the flight will begin and end and apprioxmate duration of elapsed flight time stated in hours.

(7) Item 7, fill in as indicated and in addition give the name, address and purpose of any other person(s) who will be aboard the aircraft during the flight for which deviation is requested.

(8) Sign all copies of the application on the reverse side in the space provided for the applicant's signature.

(b) At the time the application is submitted, the applicant will arrange with the Flight Operations and Airworthiness agent to inspect the aircraft, the loading arrangement, and to ascertain the safety precautions being employed or otherwise necessary for the safe conduct of the flight.

(c) In cases of emergency requiring immediate transportation of the articles for which a deviation is necessary, application may be made by telephone or telegraph to the Flight Operations and Airworthiness District Office.

(Published in 21 F. R. 9103, Nov. 22, 1956, effective Dec. 15, 1956.)

49.81 *Prohibited articles.* No explosive or dangerous article listed in the ICC Regulations (49 CFR Part 72) as an Explosive A, a Poison A, a forbidden article, or as an article not acceptable for rail express (see sec. 49.62 for authorization of the carriage of certain radioactive materials), nor any article listed in Appendix A shall be carried on aircraft subject to the provisions of this part.

Appendix A

Items Prohibited From Transportation by Air

Explosives

Ammunition for cannon.
Blasting caps, including electric blasting caps.
Blasting caps with safety fuse.
Jet thrust units.
Rocket ammunition.

Flammable Liquids

Acrolein.
Carbon bisulfide (disulfide).
Nickel carbonyl.
Zinc ethyl.

Flammable Solids and Oxidizing Materials

Acetyl benzoyl peroxide, solid.
Acetyl peroxide, solid.
Burnt cotton (not repicked).
Burnt fiber.
Carbopropoxide stabilized or unstabilized.
Charcoal, wood, screenings, other than "pinion" wood screenings.
Cotton waste, oily, with more than 5 percent animal or vegetable oil.
Fish scrap or fish meal containing less than 6 percent or more than 12 percent moisture.
Garbage tankage containing less than 8 percent moisture.
Hair, wet.
Iron mass, spent.
Iron sponge not properly oxidized.
Iron sponge, spent.
Matches, strike-anywhere.
Motion picture film scrap (nitrocellulose).
Paper stock, wet.
Rags, oily.
Rags, wet.
Spent oxide.
Tankage, fertilizers.
Tankages, rough ammoniate.
Textile waste, wet.
Waste paper, wet.
X-ray film scrap (nitrocellulose base).

Compressed Flammable Gas

Fluorine.

Appendix B

Items Prohibited From Transportation by Air on Passenger-Carrying Aircraft

Explosives

Chemical Ammunition containing Class B or Class C poisons.
Explosives Class B, all.

Flammable Liquids

Ethyl chloride.
Ethyl trichlorosilane.
Ethylene oxide.
Lithium aluminum hydride etheral.
Spirits of nitroglycerin in excess of one (1) percent by weight.
Trichlorosilane.

Flammable Solids and Oxidizing Materials

Acetyl benzoyl peroxide solution.
Bags, nitrate of soda, empty and unwashed.
Benzoyl peroxide.
Calcium chlorite.
Calcium phosphide.
Calcium resinate.
Calcium resinate, fused.
Chlorobenzoyl peroxide (para).
Cobalt resinate, precipitated.
Lithium hydride.
Lithium metal (unless exempt from ICC Regulations).
Lithium silicon.
Peracetic acid.
Phosphoric anhydride.
Phosphorous, amorphous, red.
Phosphorous pentachloride.
Phosphorous, white or yellow.
Phosphorous sesquisulfide.
Photographic film scrap (processed, positive or, negative nitrocellulose).
Picric acid, wet, exceeding 16 ounces by weight.
Potassium, metallic and potassium metallic liquid alloy.
Potassium peroxide.
Pyroxylin plastic scrap.
Sodium chlorite.
Sodium metallic and sodium metallic liquid alloy.
Sodium peroxide.
Sodium picramate.
Thorium metal, powdered.
Titanium metal, powdered.
Zirconium, metallic, dry, wet or sludge.

Acids and Other Corrosive Liquids

Acid sludge.
Allyl chloroformate.
Amil trichlorosilane.
Antimony pentafluoride.
Benzoyl bromide.
Benzoyl chloroformate.
Bromine.
Bromine trifluoride.
Bromo toluene.
Chloracetyl chloridge.
Chlorine trifluoride.
Diethyl dichlorosilane.
Difluorophosphoric acid, anhydrous.
Dimethyl sulphate.
Diphenyl dichlorosilane.
Electrolyte or alkaline battery fluid packed with storage batteries, battery chargers, or radio current supply devices.
Ethyl chloroformate.
Ethyl formate.
Ethylphenyl dichlorosilane.
Fluosulfonic acid.
Hexafluorophosphoric acid.
Hexyl trichlorosilane.
Hydrazine, anhydrous.

Hydrazine solution containing 50% or less of water.
Hydrofluoric acid, anhydrous.
Hypochlorite solution more than 7% chlorine by weight.
Methyl chloroformate.
Mixtures of hydrofluoric and sulphuric acids.
Monofluorophosphoric acid, anhydrous.
Nitrating (mixed) acid.
Nitric acid.
Nitrohydrochloric acid.
Nitrohydrochloric acid, and dilute.
Octyl trichlorosilane.
Phenylphosphorous oxychloride.
Phosphorous tribromide.
Phosphorous trichloride.
Propyl trichlorosilane.
Spent acid, sulfuric or mixed.
Sulfur chloride.
Thionyl chloride.
Thiophosphoryl chloride.

Compressed Gases

All flammable gases.
Nonflammable gases as follows:
Anhydrous ammonia.
Boron trifluoride.
Chlorine.
Hydrogen bromide.
Hydrogen chloride.
Nitrosyl chloride.
Sulfur dioxide.

Poisonous Articles

Aniline oil.
Chemical ammunition.
Hydrocyanic acid solutions.
Methyl bromide.
Motor fuel antiknock compound.
Phenyldichlorarsine.
Tetraethyl lead.

Appendix C

Form ACA-400
(1-48)

DEPARTMENT OF COMMERCE
CIVIL AERONAUTICS ADMINISTRATION

APPLICATION FOR CERTIFICATE OF WAIVER

FORM APPROVED
BUDGET BUREAU NO. 41-R076.4.

APPLICANTS—DO NOT USE THESE SPACES

REGION NO.	DATE

ACTION

☐ APPROVED ☐ DISAPPROVED *(Explain under "Remarks")*

SIGNATURE OF AGENT

To: CIVIL AERONAUTICS ADMINISTRATION.

INSTRUCTIONS

Submit this application in triplicate (3) to your local CAA District Office.

Applicants requesting a Certificate of Waiver for an air meet will complete all items and certification on this form and will attach a properly marked map or diagram of the operations area. This map or diagram must be to scale, and distances must be shown. It must include race courses, obstructions, grandstands; congested areas, parking areas, dead lines, police stations; ambulance, fire-truck, crash-wagon, and control stations.

Applicants requesting a Certificate of Waiver, for activities other than an air meet, will complete items 1 through 7 only and the certification on the reverse.

1. NAME (FIRST, MIDDLE, AND LAST)

2. PERMANENT MAILING ADDRESS	HOUSE NUMBER AND STREET, OR ROUTE NUMBER	POST OFFICE	STATE	TELEPHONE

3. TO AUTHORIZE NONOBSERVANCE OF CIVIL AIR REGULATIONS, SECTION (INDICATE SECTIONS WHICH PROHIBIT PROPOSED OPERATION)

4. IN PERFORMANCE OF (DESCRIBE PROPOSED OPERATION AND PURPOSE THEREOF IN DETAIL)

(IF NECESSARY, ATTACH SUPPLEMENT TO CONTINUE)

5. AREA OF OPERATION

6. FOR THE PERIOD OF—				BEGINNING *(Date)*	ENDING *(Date)*	BETWEEN THE HOURS OF—
HOURS	DAYS	WEEKS	MONTHS			

7. AIRCRAFT MAKE AND MODEL	IDENTIFICATION MARK	OWNER	ADDRESS (STREET, CITY, STATE)

WHILE BEING FLOWN BY THE FOLLOWING PILOTS:

NAME	ADDRESS (STREET, CITY, STATE)	CERTIFICATE NUMBER AND RATING

Application for Certificate of Waiver.

Form ACA-400 (1-48)

8. THE AIR MEET WILL BE SPONSORED BY—

9. PERMANENT MAILING ADDRESS	HOUSE NUMBER AND STREET OR ROUTE NUMBER	POST OFFICE	CITY	STATE

10. POLICING (WHAT PROVISION WILL BE MADE FOR POLICING THE MEET?)

11. EMERGENCY FACILITIES

☐ PHYSICIAN ☐ AMBULANCE ☐ FIRE TRUCK ☐ CRASH WAGON

☐ OTHER (*Specify*) _____

12. AIR TRAFFIC CONTROL (DESCRIBE METHOD OF CONTROLLING TRAFFIC, INCLUDING PROVISION FOR ARRIVAL AND DEPARTURE OF SCHEDULED AIRCRAFT)

13. SCHEDULE OF EVENTS (INCLUDE ARRIVAL AND DEPARTURE OF SCHEDULED AIRCRAFT AND OTHER OPEN PORT PERIODS; UNFORESEEN CHANGES AND REVISIONS TO BE SUBJECT TO APPROVAL OF LOCAL AGENT)

HOUR	DATE	EVENT	PILOT RATING

(If sufficient space is not available, the entire schedule of events may be submitted on separate sheets, in the order and manner indicated above.)

The undersigned applicant accepts full responsibility for the strict observance of the terms of the Certificate of Waiver, and understands that the authorization contained in such certificate will be strictly limited to the above-described operations.

I CERTIFY that the foregoing statements are true.

(DATE) (SIGNATURE OF APPLICANT)

REMARKS:

Application for Certificate of Waiver (reverse).

Appendix D

Special Civil Air Regulations Which Affect Part 49

SPECIAL CIVIL AIR REGULATION NO. SR-397

Effective: June 30, 1953
Adopted: June 30, 1953

Authorization for the United States Forest Service to Deviate From the Civil Air Regulations

Contrary provisions of the Civil Air Regulations notwithstanding, the Chief, Forest Service, United States Department of Agriculture, is authorized to permit aircraft and airmen, while engaged in operations conducted for the United States Forest Service, to deviate from the provisions of the Civil Air Regulations to the extent that he finds necessary for the expeditious conduct of such operations. The Chief, Forest Service, shall notify the Administrator of any deviation which he has authorized and the reasons therefor in accordance with a procedure established by the Administrator.

SPECIAL CIVIL AIR REGULATION NO. SR-417

Effective: May 28, 1956
Adopted: May 28, 1956

Authority to Deviate from Certain Provisions of Part 49 of the Civil Air Regulations Within the Territory of Alaska

(1) Contrary provisions of Part 49 of the Civil Air Regulations notwithstanding, and subject to conditions hereinafter set forth, the operators listed in the following List of Operators and Areas of Operation, and any other operator authorized by the Administrator to be added to such list pursuant to this Regulation, may deviate from those provisions of Part 49 which prohibit the carriage of Class A explosives in aircraft, to the extent necessary to transport Class A explosives in civil aircraft to and from certain areas within Alaska as listed in the following List of Operators and Areas of Operation, provided that:

(a) Shipment of such explosives, by civil aircraft, shall be made only by operators authorized by Morrison-Knudsen Co., Inc., or other contractors acting under a military defense project known as ALCOM, DEWLINE, or White Alice and identified as contract AF-33 (600-29717);

(b) Each operator shall furnish the Administrator, prior to carriage of such explosives, with a list showing the type aircraft, registration number, and area in which the aircraft is to be operated, and no deviation from this listing shall be made without the express approval of the Administrator;

(c) Each shipper and operator shall comply with all pertinent provisions of Part 49 and the ICC Regulations including packing, marking, labeling, and loading requirements and with any special instructions issued by the ICC for the handling of Class A explosives;

(d) The crew of the aircraft shall be thoroughly briefed on the characteristics and proper handling of the cargo;

(e) Shipments may be made to and from a civil airport only if prior arrangements have been made between the operator of the aircraft and local civil airport management;

(f) The operations on and in the vicinity of civil airports shall be conducted in accordance with such special traffic rules as may be prescribed by the Administrator including weather minimums, airport approach and departure routes to avoid flight over congested areas, and notification to the airport control tower of the nature of the cargo aboard;

(g) The aircraft shall not be used to carry persons other than crew members and shall be operated in accordance with the aircraft performance and weight limitations applicable to passenger-carrying aircraft unless otherwise authorized by the Administrator; and

(h) Single-engine aircraft shall be operated in accordance with operation specifications approved by the Administrator.

(2) That, upon notification by Morrison-Knudsen Co., Inc., or other *bona fide* contractors acting pursuant to the above-specified contract that certain other operators of aircraft have been put under contract to engage in the same work, the Administrator of Civil Aeronautics is authorized to add to the following List of Operators and Areas of Operation any such operator who to him meets the requirements of this Special Civil Air Regulation.

This Special Civil Air Regulation shall expire June 1, 1957, unless sooner superseded or rescinded by the Board.

List of Operators and Areas of Operation

Operator	*Area*
Morrison-Knudsen Co., Inc., Dist.	All of Alaska except Southeastern section.
Cordova Airlines.	All of Alaska except Southeastern section.
Safeway Airways.	Upper Yukon, Kuskokwim, Bristol Bay, Iliamna.
Safeway Airways.	Seward Peninsula.
Circle Air Trails.	Bristol Bay and Iliamna area.
Alaska Sportsmen.	Kuskokwim Bay area which includes Bethel and Platinum.
Bernard Blanchard.	Galena, McGrath and Fairbanks area.
Foster Air Service.	Seward Peninsula.