

# **Transportation of Explosives and Other Dangerous Articles**

**FEDERAL AVIATION AGENCY**

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**April 1961**

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## Introductory Note

Civil Aeronautics Manual 49 contains in consolidated form (1) Civil Air Regulations Part 49, Transportation of Explosives and Other Dangerous Articles, effective June 25, 1958, Amendment 49-1, effective October 10, 1958, and the editorial changes required by Special Regulation SR-430 effective December 31, 1958; and (2) any rules, policies, and interpretations issued by the Administrator of the Federal Aviation Agency in application to the various sections of the regulations.

FAA *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.

FAA *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.

FAA *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 Agency 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 supersedes Civil Aeronautics Manual 49, dated August 1959. As amendments and other pertinent materials pertaining to Part 49 are issued, they will be included in this manual.

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# Transportation of Explosives and Other Dangerous Articles

## Applicability and Definitions

### 49.1 *Applicability of this part.*

(a) Explosives and other dangerous articles, as defined and regulated in Parts 72 through 78 of the ICC Regulations (49 CFR Parts 72 through 78) including but not limited to flammable liquids, flammable solids, oxidizing materials, corrosive liquids, compressed gases, and poisonous articles 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 hereinafter provided.

(b) Explosives and other dangerous articles listed in Part 72 of the ICC Regulations (49 CFR Part 72) as articles not accepted for rail express 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.

(c) The provisions of this part shall not be applicable to radioactive materials meeting the requirements of Parts 72 and 73 of the ICC Regulations (49 CFR Parts 72, 73) which exempt them from the prescribed packing, marking, and labeling requirements thereof for shipment by rail express.

(d) The provisions of this part shall not be applicable to aircraft equipment such as signaling devices, aviation fuel and oil carried in tanks complying with the fuel and oil tanks installation provisions of the Civil Air Regulations, and other equipment and materials necessary for the safe operation of the aircraft on which they are carried.

(e) The provisions of this part shall not be applicable to materials while carried in the hoppers or tanks of aircraft certificated for use in aerial seeding, dusting, spraying, fertilizing,

crop improvement, or pest control and which are to be dispensed during such operations.

Note: In addition to other authorized sanctions, section 902 of Title IX of the Federal Aviation Act of 1958, as amended (72 Stat. 784, as amended; 49 U. S. C. 1472), provides that any person who knowingly delivers or causes to be delivered to an air carrier or to the operator of any civil aircraft for transportation in air commerce, or who causes the transportation in air commerce of, any shipment, baggage, or property, the transportation of which would be prohibited by any rule, regulation, or requirement prescribed by the Administrator under Title VI of the Federal Aviation Act of 1958, as amended, relating to the transportation, packing, marking, or description of explosives or other dangerous articles shall, upon conviction thereof for each such offense, be subject to the applicable penalties set forth therein.

### 49.2 *Special authority.*

(a) In emergency situations or where other forms of transportation are impracticable:

(1) Deviation from any of the provisions of this part for a particular flight may be authorized by the Administrator subject to such terms, conditions, and limitations as he finds necessary in the interest of safety in air commerce.

(2) Shipments made by the Atomic Energy Commission shall be exempt from the quantity limitation prescribed for radioactive materials in the ICC Regulations for shipment by rail express provided such shipments are otherwise 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.

(b) Shipments of radioactive materials made by the Atomic Energy Commission or under its direction or supervision, which are escorted by personnel who are especially designated by the

**Atomic Energy Commission, shall be exempt from the provisions of this part where special arrangements are made with and approved by the Administrator.**

**49.2-1 Authority to deviate from the provisions of Part 49 (FAA policies which apply to sec. 49.2 (a)).** The Administrator may grant authority for a particular flight to deviate from the provisions of Part 49 in those cases described in either paragraphs (a) or (b).

(a) An emergency situation in which the issuance of the 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 49.2 (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 23 F. R. 7990, Oct. 16, 1958, effective Oct. 16, 1958.)

**49.2-2 Conditions and limitations (FAA policies which apply to sec. 49.2).** 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 that 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 thoroughly 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 and 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 23 F. R. 7990, Oct. 16, 1958, effective Oct. 16, 1958.)

**49.2-3 Application for authorization to deviate from the provisions of Part 49 (FAA policies which apply to sec. 49.2 (a)).**

(a) Application for authorization to deviate from the provisions of Part 49 will be made on Form FAA-400, Application for Certificate of Waiver, which may be obtained from any Bureau of Flight Standards District Office of the Federal Aviation Agency (see appendix A for sample form). The application will be completed in triplicate and submitted to the nearest Bureau of Flight Standards 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 specifically the explosive and/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 approximate 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 Bureau of Flight Standards inspector 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 Bureau of Flight Standards District Office.

(Published in 23 F. R. 7990, Oct. 16, 1958, effective Oct. 16, 1958.)

**49.5 Definitions.** As used in this part, terms are defined as follows:

**Cargo aircraft.** A cargo aircraft is an aircraft which is not a passenger-carrying air-

craft and which is used for the carriage of goods.

**Explosives and other dangerous articles.** (As defined in Part 73 of the ICC Regulations (49 CFR Part 73)):

Acids and other corrosive liquids.

Compressed gases.

Explosives.

Flammable liquids.

Flammable solids.

Oxidizing materials.

Poisonous articles.

**ICC Regulations.** ICC Regulations are the currently effective "Interstate Commerce Commission's Regulations for Transportation of Explosives and Other Dangerous Articles," as amended or revised from time to time (49 CFR Parts 71-78).

Note: These ICC Regulations may be obtained from the Government Printing Office, Washington 25, D. C., or from the Bureau of Explosives, 30 Vesey Street, New York 7, New York.

**Labeling.** Labeling is the display on a container of the appropriate label specified in the ICC Regulations for the particular class of article.

**Marking.** Marking is the display on the outside of a container of the name of the article inside as required by this part.

**Operator of aircraft.** Operator of aircraft is any person who causes or authorizes the operation of any civil aircraft, whether with or without the right of legal control (in the capacity of owner, lessee, or otherwise) of such aircraft.

**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, or individuals accompanying shipments.

**Person.** Person is any individual, firm, co-partnership, corporation, company, association, joint-stock association, or body politic; and includes any trustee, receiver, assignee, or other similar representative thereof.

**Pilot in command.** The pilot in command is the pilot responsible for the operation and safety of the aircraft during the time defined as flight time.

**Quantity.** Quantity is that net amount specified in United States liquid measure or in avoirdupois weight, unless otherwise provided in this part.

**Unit of radiation.** As defined in Part 73 of the ICC Regulations (49 CFR Part 73).

## Shipping Requirements

**49.11 Packing and marking requirements.** Unless otherwise specifically provided in this part, explosives and other dangerous articles shall be packed and marked in accordance with the requirements prescribed in Parts 72, 73, and 78 of the ICC Regulations (49 CFR Parts 72, 73, 78) as are applicable to rail express.

Note: The marking required by this provision may be followed by additional identification in parentheses.

**49.12 Labeling requirements.** Unless otherwise specifically provided in this part, explosives and other dangerous articles acceptable under the provisions of this part for transportation in air commerce shall be labeled by the shipper with the appropriate label specified in the ICC Regulations even though they may be exempt from ICC labeling requirements by virtue of ICC quantity and packing limitations.

### 49.13 Certification requirements.

(a) No shipper shall offer and no air carrier or other operator of aircraft shall knowingly accept explosives and other dangerous articles for carriage by air unless the package is accompanied by or shows a clear and plainly visible statement signed by the shipper or his duly authorized agent that the shipment complies with the requirements of this part. No such shipment shall be accepted for transportation by passenger-carrying aircraft unless the shipper's certification includes an additional statement that the shipment is within the limits prescribed by this part for passenger-carrying aircraft. Any air carrier or other operator of aircraft may rely on such a certification as prima facie evidence that the shipment so certified complies with the requirements of this part.

Note: The following statement signed by the shipper or his duly authorized agent 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, marked, and labeled and are in proper

condition for transportation according to the regulations prescribed by the Interstate Commerce Commission and the Administrator of the Federal Aviation Agency.

For shipment on passenger-carrying aircraft the following must be added to the above: This shipment is within the limitations prescribed for passenger-carrying aircraft.

(b) The shipper's certification of compliance with this part shall be made upon the ICC label affixed to each package containing explosives or other dangerous articles when there is a provision on the face of the label for such certification. When the label used does not so provide, such certification shall be made in duplicate and signed by the shipper or his duly 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 air carrier or other operator of aircraft may also require the shipper to have the shipper's statement certified by an authority approved by the carrier.

**49.14 Quantity equivalents.** Quantities measured by the metric system or the imperial system may be substituted on the basis of one liter or one imperial quart per quart specified, and 500 grams per pound specified, up to one gallon for liquids or 10 pounds for solids.

### 49.15 Containers for liquids.

(a) Liquids shall be packed only in inside containers which are securely closed, sufficient in strength to prevent any leakage or distortion of the containers caused by change in temperature or pressure during transit, and so filled as to provide adequate outage.

(b) When liquids are restricted to quantities of one quart in inside containers, each such inside container shall be packed in a strong outside container with suitable cushioning and absorbent material to prevent breakage or leakage.

(c) When liquids are restricted to quantities of less than one quart in inside containers, each such inside container shall be packed in a strong outside container with suitable cushioning and absorbent material to prevent breakage or leakage: *Provided*, That such inside containers of a total capacity not to exceed one quart may be packed in a strong outside container with suitable cushioning and absorbent material to prevent breakage or leakage.



## Loading and Handling Requirements

### 49.21 *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 a location accessible to a crew member in flight.

(c) Articles shall not be placed in the same cargo pit or bin nor placed side by side in cabins so that yellow label material is mixed with white label material.

### 49.22 *Notification of pilot in command.*

When articles subject to the provisions of this part are carried on aircraft, the operator of the aircraft shall be responsible for informing the pilot in command of the name of the explosive or other dangerous article, the type of label, the quantity, and the location thereof. The cargo load manifest shall be conspicuously marked to indicate articles subject to the provisions of this part.

**49.23 *Damaged articles.*** If any package subject to the provisions of this part, except as otherwise provided in section 49.25, appears to the pilot in command or the operator of the aircraft to be damaged or leaking, the operator of the aircraft shall remove it from the aircraft and it 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. In such instances, the operator of the aircraft shall promptly report the circumstances to a representative of the Administrator.

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

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

### 49.25 *Special requirements for radioactive materials.*

(a) Whenever any shipment of radioactive materials is damaged or appears to the pilot in command or the operator of the aircraft to be damaged, the operator shall remove it from the aircraft and segregate it from human contact. The operator of the aircraft shall immediately contact the shipper for disposal instructions and notify the Administrator or the Board of the incident.

(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 below 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 such table by adding together the number of units shown on the label of each package.

**Table for Personnel Separation<sup>1</sup>**

Total number of units <sup>2</sup>	Minimum distance to crew members and passengers (feet) <sup>3</sup>
0-2	1
3-5	2
6-10	3
11-20	4
21-30	5
31-40	6

<sup>1</sup> 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.

<sup>2</sup> 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.

<sup>3</sup> Distance means the number of feet from the nearest edge of the nearest radioactive container.

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

### Passenger-Carrying Aircraft

49.31 *Articles which may be carried on passenger-carrying aircraft.* No explosive or other dangerous article shall be carried on passenger-carrying aircraft, other than the following:

(a) Explosives and other dangerous articles which are exempt under the ICC Regulations from the specification packing, marking, and labeling requirements of Parts 72, 73, and 78 thereof (49 CFR Parts 72, 73, 78) applicable to rail express.

(b) Class C explosives when packed, marked, and labeled in accordance with the requirements of Parts 72 and 73 of the ICC Regulations (49 CFR Parts 72, 73) for shipment by rail express except that the maximum that may be packed in one outside container is 50 pounds.

(c) Subject to the limitations contained in section 49.24 (a), nonflammable compressed gases when in ICC approved cylinders and at pressures not to exceed those permitted by the ICC Regulations for shipments by rail express except that the following may not be carried: Anhydrous ammonia, boron trifluoride, chlorine, hydrogen bromide, hydrogen chloride, nitrosyl chloride, and sulfur dioxide.

(d) Motion picture film and X-ray film (nitrocellulose base) exposed and unexposed when packed, marked, and labeled in accordance with the requirements of Parts 72 and 73 of the ICC Regulations (49 CFR Parts 72, 73) for shipment by rail express.

(e) Pyroxylin plastics containing nitrocellulose in sheets, rolls, rods, or tubes when packed, marked, and labeled in accordance

with the requirements of Parts 72 and 73 of the ICC Regulations (49 CFR Parts 72, 73) for shipment by rail express.

(f) Subject to the limitations contained in section 49.24 (b), radioactive materials, Groups I, II, and III, may be carried when packed, marked, and labeled in accordance with the requirements of Parts 72 and 73 of the ICC Regulations (49 CFR Parts 72, 73) for shipment by rail express.

### Cargo Aircraft

49.41 *Articles which may be carried on cargo aircraft.* In addition to the articles acceptable for transportation on passenger-carrying aircraft, the following articles may be carried on cargo aircraft:

(a) Any article acceptable under the ICC Regulations for transportation by rail express. The maximum quantity in any one outside package or container shall not exceed that prescribed for rail express in the commodity list of Part 72 of the ICC Regulations (49 CFR Part 72).

(b) (1) Radioactive materials such as ores, residues, etc., of low activity packed in strong, tight containers are exempt from the packing and labeling requirements of this part 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 as appropriate to supervise all loading and unloading operations and to monitor all personnel involved so that the accepted limits of personnel radiation exposure are not exceeded.

# Appendix A

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## Sample Forms

<b>FEDERAL AVIATION AGENCY</b>  <b>APPLICATION FOR</b> <b>CERTIFICATE OF WAIVER</b>				<b>FORM APPROVED</b> <b>BUDGET BUREAU NO. 04-R073</b> <b>APPLICANTS—DO NOT USE THESE SPACES</b>			
<b>To: FEDERAL AVIATION AGENCY.</b>				REGION NO. _____ DATE _____		ACTION <input type="checkbox"/> APPROVED <input type="checkbox"/> DISAPPROVED (Explain under "Remarks")	
<b>INSTRUCTIONS</b>  Submit this application in triplicate (3) to your local FAA General Aviation 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.				SIGNATURE OF AUTHORIZED FAA REPRESENTATIVE _____			
<b>1. NAME (FIRST, MIDDLE, AND LAST)</b>							
<b>2. PERMANENT MAILING ADDRESS</b>		HOUSE NUMBER AND STREET, OR ROUTE NUMBER		POST OFFICE		STATE	
<b>3. TO AUTHORIZE NONOBSERVANCE OF CIVIL AIR REGULATIONS, SECTION (INDICATE SECTIONS WHICH PROHIBIT PROPOSED OPERATION)</b>							
<b>4. IN PERFORMANCE OF (DESCRIBE PROPOSED OPERATION AND PURPOSE THEREOF IN DETAIL)</b>  <div style="text-align: center;">(IF NECESSARY, ATTACH SUPPLEMENT TO CONTINUE)</div>							
<b>5. AREA OF OPERATION</b>							
<b>6. FOR THE PERIOD OF—</b> HOURS   DAYS   WEEKS   MONTHS				BEGINNING (Date) _____		ENDING (Date) _____	
BETWEEN THE HOURS OF—							
<b>7. AIRCRAFT MAKE AND MODEL</b>		IDENTIFICATION MARK		OWNER		ADDRESS (STREET, CITY, STATE)	
<b>WHILE BEING FLOWN BY THE FOLLOWING PILOTS:</b>							
NAME		ADDRESS (STREET, CITY, STATE)				CERTIFICATE NUMBER AND RATING	

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				
<input type="checkbox"/> PHYSICIAN <input type="checkbox"/> AMBULANCE <input type="checkbox"/> FIRE TRUCK <input type="checkbox"/> CRASH WAGON <input type="checkbox"/> 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 INSPECTOR)				
HOUR	DATE	EVENT	PILOT RATING	
<i>(If sufficient space is not available, the entire schedule of events may be submitted on separate sheets, in the order and manner indicated above.)</i>				
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:				

# **Appendix B**

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**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

The Forest Service of the United States Department of Agriculture uses both public and civil aircraft to carry personnel and equipment to fire areas. The aircraft and pilots are certificated and, where possible, Forest Service operations are conducted in accordance with the Civil Air Regulations. In order to deal effectively with fire control and other Forest Service specialized activities, however, it is often necessary to use uncertificated personnel as parachute riggers during peakload periods, to remove seats and safety belts from aircraft in which firefighters are carried, to drop equipment and supplies from aircraft, and to deviate from other provisions of the Civil Air Regulations such as minimum altitudes and visibility conditions. Due to the exigencies of the particular situation, it is usually impracticable for the Forest Service to seek authority in each particular instance to deviate from the provisions of the Civil Air Regulations. In view of the public service rendered by this organization and the well-organized supervisory control which the Forest Service exercises over its operations, it is considered desirable that the Board authorize the Forest Service to deviate from the Civil Air Regulations and normal practices thereunder when necessary for their operations.

This regulation authorizes the Chief of the Forest Service to permit aircraft and airmen, while engaged in Forest Service operations, to deviate from the Civil Air Regulations to the extent that he finds necessary for the expeditious conduct of such operations. The regulation also provides that the Administrator shall establish a procedure for notification by the Chief of the Forest Service of those deviations which he has authorized.

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. Since this regulation imposes no additional burden on any person, it may be made effective without prior notice.

In consideration of the foregoing the Civil Aeronautics Board hereby makes and promulgates the following Special Civil Air Regulation, effective immediately:

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-443**

Effective: Nov. 14, 1960  
Adopted: Nov. 14, 1960

### **Authority to Deviate from Certain Provisions of Part 49 of the Civil Air Regulations Within the State of Alaska**

The Federal Aviation Agency has recently received requests from various operators in Alaska for authority to transport in cargo aircraft within the State of Alaska flammable liquids, viz., gasoline and fuel oil, in larger quantities than presently permitted by Part 49 of the Civil Air Regulations and Part 72 of the Interstate Commerce Commission Regulations.

These operators state that they have the need to transport gasoline and fuel oil supplies in 55-gallon drums to mining sites, exploration groups, and small villages in relatively remote areas, as well as to the various outlying stations served by scheduled and charter services. Although water transportation to some of these locations is possible at certain times, surface freezing during the major part of the year makes air transportation the only practicable means of resupply. Annual resupply by stockpiling fuel in 55-gallon drums, during the limited time when surface transportation is possible, presents a fuel contamination problem, due to the water and rust accumulation which develops in the drums. This is especially critical where aviation fuel is concerned.

Section 49.41(a) of Part 49 of the Civil Air Regulations permits transportation in cargo aircraft of any article packed, marked, and labeled in accordance with ICC Regulations for transportation by rail express. The ICC Regulations do not permit the carriage by rail express of gasoline and fuel oil in quantities exceeding 10 gallons. They do, however, permit larger quantities to be shipped in an outside container aboard trucks and in freight carriage, and 55-gallon drums have been approved for such shipments. Section 49.2 provides, in emergency situations or where other forms of transportation are impracticable, for deviation from any of the provisions of Part 49 for a particular flight subject to such terms, conditions, and limitations as the Administrator finds necessary in the interest of safety in air commerce.

Certain of the operators in Alaska have previously been granted individual authorizations for the carriage of gasoline and fuel oil in the larger quantities under consideration. The experience gained under these individual authorizations has indicated that such operations can be conducted without an adverse effect upon safety. Since there is a continuing need to transport these flammable liquids and an authorization granted under section 49.2 for a particular flight is not sufficient to meet this need, special authority for a series of flights is required. Therefore, it would be consistent with present procedures to grant special authority to such operators to deviate from the provisions of Part 49 to the extent provided herein.

The provisions of this Special Civil Air Regulation authorize deviations from Part 49 only with respect to the carriage of gasoline and fuel



oil in 55-gallon drums aboard cargo aircraft, and the shipper and operator are required to comply with the requirements of Part 49 in all other respects.

Prior to engaging in operations pursuant to this Special Civil Air Regulation, each operator will be required to furnish the Chief, Flight Standards Field Division, Region 5, with a list showing the type aircraft, registration number, airports to be used, and the area in which the aircraft is to be operated.

This special regulation shall continue in effect until October 31, 1962. Prior to this date, the experience gained under this authorization will be evaluated for the purpose of considering the incorporation of the substance of this rule in the permanent body of the Civil Air Regulations.

Since this special regulation grants relief and imposes no additional burden on any person, notice and public procedure hereon are unnecessary, and good cause exists for making it effective immediately.

In consideration of the foregoing, the following Special Civil Air Regulation is hereby adopted to become effective November 14, 1960:

1. Contrary provisions of section 49.41(a) of Part 49 of the Civil Air Regulations notwithstanding, and subject to the conditions hereinafter set forth, any operator of aircraft while conducting operations entirely within the State of Alaska, may deviate from the provisions of such section to the extent necessary to permit the transportation in cargo aircraft of 55-gallon drums of gasoline or fuel oil.

(a) Prior to engaging in operations pursuant to this Special Civil Air Regulation, each operator furnishes the Chief, Flight Standards Field Division, Region 5, with a list showing the type aircraft, registration number, airports to be used, and the area in which the aircraft is to be operated. All operations must be conducted with the aircraft and at the places listed unless express approval to do otherwise is obtained from the Chief, Flight Standards Field Division.

(b) Gasoline and fuel oil are prepared for shipment in 55-gallon containers which meet Specification 5, 5B, 5C, or 5M prescribed in Part 78 of the Interstate Commerce Commission Regulations.

(c) Each container is inspected prior to and after being loaded aboard the aircraft to determine that it is airtight and leakproof. Any defective container shall be rejected for shipment.

(d) Each container is loaded with the filling hole up, and blocked, braced, and secured so as to prevent change of position by ordinary shocks incident to transportation.

(e) The cargo compartment is ventilated so as to prevent accumulation of fumes from the contents of the containers.

(f) Other cargo carried in the same compartment with flammable liquid containers is blocked, braced, and secured so as to prevent change of position by ordinary shocks incident to transportation.

(g) Each container is conspicuously labeled with a flammable liquids label or plainly marked to indicate its contents. In lieu thereof, "DANGEROUS—FLAMMABLE LIQUID CARGO" may be conspicuously and legibly marked on the outside of the cargo doors.

(h) No smoking, lighting of matches, or carrying of any flame or lighted cigar, pipe, or cigarette is permitted while loading or unloading the aircraft, or during flight.

(i) Loading and unloading of flammable liquids are not to be accomplished while the aircraft engines are running.

(j) The operator or a competent authorized employee of the operator must supervise the loading of the aircraft, inspect each finished load, and certify as to its compliance with the pertinent requirements of this Special Civil Air Regulation. The operator must maintain a record of such inspections, showing the dates, quantities carried, and the results of the inspections made.

(k) Persons other than crewmembers are not carried aboard the aircraft while transporting flammable liquids under this authorization.

This Special Civil Air Regulation shall expire October 31, 1962, unless sooner superseded or rescinded by the Federal Aviation Agency.

# **Appendix C**

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## **Federal Aviation Agency Exemptions Which Affect Part 49**

UNITED STATES OF AMERICA  
FEDERAL AVIATION AGENCY  
WASHINGTON, D.C.

<i>In the matter of the petition of the</i> DEPARTMENT OF THE AIR FORCE <i>for exemption from certain provisions of</i> <i>Part 49 of the Civil Air Regulations</i>	}	Regulatory Docket No. 413
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GRANT OF EXEMPTION

By letter dated January 13, 1960, the Department of the Air Force, on behalf of the Department of the Army, requested the Federal Aviation Agency to authorize the transportation of escorted toxic material by Air Force contract airlift service (LOGAIR) between certain military airports of the United States. Such authorization requires exemption authority from certain provisions of Part 49 of the Civil Air Regulations.

The petitioner states that LOGAIR is primarily an all-cargo scheduled airlift service between selected points of Air Force logistic interest within the continental United States, contracted annually among the Military Air Transport Service, Department of the Air Force, and certain commercial air carriers. The Air Force considers the requested exemption authority, to permit the airlift of escorted toxic material via LOGAIR, to be in the national interest and in support of vital Department of Defense functions. Military airlift is not always available or readily obtainable, since there is no military airlift service operation over established routes within the continental United States. Shipments of chemical munitions will be mostly escorted toxic material (Class A poisons) or tear gas (Class C poison), and occasionally other similar items, all of which may be in larger quantities than presently authorized in FAA or ICC regulations, as well as laboratory samples packaged in gas identification sets authorized for movement in limited quantities, without escort, in Campbell's tariff.

The primary hazard of these chemicals, as stated by the petitioner, is toxicity rather than fire or explosion. In view of the special hazards of these toxic materials in air transportation, the U.S. Army Chemical Corps has issued detailed instructions governing the packaging of the toxic materials to be shipped, the handling en route and aboard LOGAIR aircraft, and the criteria for determination as to when an emergency exists which precludes transportation by other means. For transportation of toxic material, escorts will provide sufficient protective clothing for each of the personnel in the airplane and carry sufficient agent (caustic soda) to combat any decontamination problem that may arise. Packaging in all cases will be equal to or better than ICC requirements; carriage of persons not essential to the flight will be prohibited; flights will be restricted to military airfields; and an open certification file will be

maintained at Headquarters, Air Materiel Command, Wright-Patterson Air Force Base, Ohio, for inspection by the Federal Aviation Agency.

Part 49 of the Civil Air Regulations prohibits the transportation by civil aircraft in the United States of dangerous articles, including poisonous articles, listed in Part 72 of the ICC Regulations as articles not accepted for shipment by rail express, except that, in emergency situations or where other forms of transportation are impracticable, carriage of such articles may be authorized by the Administrator for a particular flight.

The petitioner has previously been granted individual authorizations for the shipment of the same or similar dangerous articles as those under consideration. The experience gained under these authorizations has been favorable from a safety viewpoint. Since there is a continuing requirement to transport these materials and an authorization granted under Part 49 for a single flight is not sufficient to meet this need, a general exemption for a series of flights is required. Therefore, it would be consistent with present procedures to authorize the petitioner to deviate from the provisions of Part 49 as requested.

The petitioner has indicated that shipments of these toxic materials will be between military airfields at selected points of Department of the Air Force logistic interest within the continental United States. Therefore, public safety at civil airports will not be involved.

In the interest of safety, responsibility for determination of emergency criteria which will preclude movement by means other than air will not be delegated lower than the Headquarters, U.S. Army Chemical Corps.

In addition, the Director of Transportation, Air Materiel Command, Department of the Air Force, will be required to certify that each shipment by LOGAIR of escorted toxic materials authorized to be transported by this exemption is required in the national interest to meet an emergency situation. He will also certify that movement via other modes of transportation is impractical, and is in accordance with the applicable provisions of the ICC Regulations for shipment of toxic materials with respect to packaging, marking, stowing, and security of cargo.

In consideration of the foregoing, I find that the exemption requested is in the public interest. Therefore, pursuant to the authority contained in sections 313(a) and 601(c) of the Federal Aviation Act of 1958, which has been delegated to me by the Administrator (§ 405.31, 24 F.R. 2196), the Department of the Air Force is hereby granted an exemption from certain provisions of Part 49 of the Civil Air Regulations to the extent necessary to permit the air transportation via LOGAIR of specific Class A poisons, namely GB and VX, and of tear gas and other similar Class C poisons of the U.S. Army Chemical Corps in larger quantities than presently authorized by Interstate Commerce Commission Regulations, subject to the following conditions:

1. No shipment shall be transported via LOGAIR flights unless the Chief Chemical Officer, Department of the Army, has determined that the shipment is being made in response to an emergency situation and

that movement via other modes of transportation is impractical in terms of time, spoilage, or expeditious development of testing data.

2. The Director of Transportation, Air Materiel Command, Department of the Air Force, shall certify that each shipment by air authorized to be transported by this exemption meets the requirements of paragraph 1, is required in the national interest, and is in accordance with the applicable provisions of the Interstate Commerce Commission Regulations for shipment of such materials with respect to packaging, marking, stowing, and security of cargo.

3. Only U.S. Military airfields shall be used by LOGAIR aircraft under the terms of this exemption.

4. GB and VX, Class A poisons, shall be packaged as follows:

(a) GB—105 MM Chemical Shell, M360, or Bomblet, E130R2;

and

(b) VX—155 MM Chemical Shell, M121.

5. Other materials authorized under this exemption shall be packaged in accordance with, or in excess of the requirements of the Interstate Commerce Commission Regulations, and U.S. Army Chemical Corps Technical Escort Unit (1602), Standing Operating Procedures.

6. Prior to packaging for shipment, each container shall be thoroughly tested to the satisfaction of U.S. Army Chemical Corps experts and the Bureau of Safety and Service, Interstate Commerce Commission, to determine susceptibility of leakage. Any container not meeting the leakage test shall be rejected for shipment.

7. A qualified Technical Escort Team of the U.S. Army Chemical Corps Technical Escort Unit (1602) shall accompany each shipment and shall supervise the loading and unloading operations of the aircraft transporting the shipment, assure that the shipment is adequately secured, brief the pilot and crewmembers as to the nature of the cargo and emergency procedures, provide protective equipment, including protective clothing, for each person in the aircraft, and carry sufficient neutralizing agent to combat any decontamination problem.

8. No passenger may be carried without the specific authorization of Headquarters, U.S. Army Chemical Corps: *Provided*, That such authorization is restricted to the movement of the required Technical Escort Team accompanying the shipment.

This exemption and the authorization granted herein shall expire July 1, 1961, unless sooner superseded or rescinded by the Federal Aviation Agency.

/s/ Oscar Bakke

*Director,*

*Bureau of Flight Standards*

Issued in Washington, D.C., on June 1, 1960.

UNITED STATES OF AMERICA  
FEDERAL AVIATION AGENCY  
WASHINGTON, D.C.

<i>In the matter of the petition of</i> MILITARY TRAFFIC MANAGEMENT AGENCY <i>for exemption from the provisions of</i> <i>Part 49 of the Civil Air Regulations</i>	}	Regulatory Docket No. 15
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GRANT OF EXEMPTION

By letter dated April 6, 1960, the Executive Director, Military Traffic Management Agency, U.S. Army, on behalf of the Department of the Navy, requested the Federal Aviation Agency to authorize the transportation of explosives via the Navy contract airlift service (QUICKTRANS) between certain military airports in the United States. Such authorization requires exemption from certain provisions of Part 49 of the Civil Air Regulations.

Petitioner advises that: (1) QUICKTRANS is an all-cargo airlift service between selected points of Navy logistic interest within the continental United States contracted annually between the Bureau of Supplies and Accounts, Department of the Navy, and certain air carriers; (2) the Navy considers the requested exemption authority to permit the transportation of urgently required explosive materials via the QUICKTRANS contract to be in the national interest and in support of vital functions of the Department of the Navy; (3) shipments of explosives by QUICKTRANS will be, for the large part, of a Class B classification whose primary hazard is one of fire rather than of sympathetic detonation; (4) in consideration of the special hazards in air transportation of the materials involved, the Bureau of Supplies and Accounts will issue detailed instructions governing the packaging of the explosives to be moved, the handling of these explosives, and the criteria for determining the emergency nature of the shipment which precludes transportation by other means; (5) carriage of passengers not essential to the flight will be prohibited; and (6) that arrangements can be made to restrict flights to military airfields.

Section 49.41 of Part 49 of the Civil Air Regulations permits transportation in cargo aircraft of any article packed, marked, and labeled in accordance with ICC Regulations for transportation by rail express. It is noted that the Interstate Commerce Commission, pursuant to section 71.13 of its regulations, has authorized the various United States military departments to transport Class A explosives by rail whenever critical situations dictated such authorization. In these situations, however, the

ICC has required that certain stringent packing, stowing, and carriage provisions of its regulations be complied with as a condition of such authorization. In addition, it is noted that a number of air carriers were authorized to carry, in recent years during national emergency status, Class A explosives in civil aircraft where it was found necessary in the national defense.

Part 49 of the Civil Air Regulations prohibits the transportation by civil aircraft in the United States of explosives and other dangerous articles, listed in Part 72 of the ICC Regulations as articles not accepted for shipment by rail express, except that in emergency situations or where other forms of transportation are impracticable, carriage of such articles may be authorized by the Administrator for a particular flight.

Since there is a continuing requirement to transport these explosives and an authorization granted under Part 49 for a particular flight is not sufficient to meet this need, a general exemption for a series of flights is required. The petitioner presently holds such an exemption, which expires July 1, 1960, and the experience gained under such exemption has been favorable from a safety standpoint. Therefore, it would be consistent with present procedures to authorize the petitioner to deviate from the provisions of Part 49 as requested.

Petitioner has indicated that arrangements can be made to transport explosives in civil aircraft only between military airfields. In view of the hazards involved and the proprietary interests of local airport management where a terminal point is a civil airport, it is considered to be in the interest of safety to restrict shipment of such explosives to military airfields only.

In addition, the Assistant Chief for Transportation, Bureau of Supplies and Accounts, Department of the Navy, will be required to certify that each shipment by air of the explosives authorized to be transported by this exemption is required in the national interest to meet an emergency situation and is in accordance with the applicable provisions of the ICC Regulations for shipment of explosives with respect to packaging, marking, stowing, and security of cargo. He will also be required to certify that movement via other modes of transportation is impracticable.

In consideration of the foregoing, I find that the exemption requested is in the public interest. Therefore, pursuant to the authority contained in sections 313(a) and 601(c) of the Federal Aviation Act of 1958, which has been delegated to me by the Administrator (§ 405.31, 24 F.R. 2196), the Military Traffic Management Agency, U.S. Army, is hereby granted an exemption from certain provisions of Part 49 of the Civil Air Regulations to the extent necessary to permit the air transportation of explosives via Navy contract airlift service (QUICKTRANS), subject to the following conditions:

(1) No shipment of explosives shall be transported via QUICKTRANS flights unless the Assistant Chief for Transportation, Bureau of Supplies and Accounts, Department of the Navy, has determined that the shipment is being made in response to an emergency situation and that movement via other modes of transportation is impracticable in terms of



time, spoilage, damage, or forfeiture of the normal or intended use of the material at destination.

(2) The Assistant Chief for Transportation, Bureau of Supplies and Accounts, Department of the Navy, shall certify that each shipment by air of the explosives authorized to be transported by this exemption meets the requirements of paragraph 1, is required in the national interest, and is in accordance with applicable provisions of the Interstate Commerce Commission for shipment of explosives with respect to packaging, marking, stowing, and security of cargo;

(3) Only U.S. military airfields shall be utilized by QUICKTRANS aircraft under the terms of this exemption.

(4) Explosives shall be packed in accordance with, or in excess of, the requirements of the Interstate Commerce Commission Regulations, and NAVAER publication 00-85-13 of June 1954;

(5) Explosives classified as "not accepted" for shipment under Interstate Commerce Commission Regulations shall not be carried, except that this restriction shall not prevent the shipment of those explosives which have been approved under special ICC permit although they are not accepted for rail express shipment by Part 72 of the ICC Regulations;

(6) All explosive items shall be thoroughly tested to determine their hazard classification to the satisfaction of Navy ordnance experts and representatives of the Bureau of Explosives and the Bureau of Safety and Service, Interstate Commerce Commission, prior to being tendered for movement;

(7) A qualified Navy ordnance technician shall supervise the loading and unloading operations of aircraft transporting the explosives; and

(8) No passenger may be carried without the specific authorization of the Bureau of Supplies and Accounts: *Provided*, That such authorization is restricted to the movement of Navy couriers while accompanying security, classified, or sensitive cargo, Navy route supervisors in the performance of their duties, or contractor personnel directly involved in the QUICKTRANS operations.

The exemption and authorization granted herein supersedes Exemption No. 15, issued May 22, 1959, and shall expire July 1, 1961, unless sooner superseded or rescinded by the Federal Aviation Agency.

/s/ B. Putnam  
Acting Director,  
Bureau of Flight Standards

Issued in Washington, D.C., on June 6, 1960.

UNITED STATES OF AMERICA  
FEDERAL AVIATION AGENCY  
WASHINGTON, D.C.

*In the matter of the petition of*  
RICHFIELD OIL CORPORATION  
*for exemption from certain provisions of*  
*Part 49 of the Civil Air Regulations* } Regulatory Docket No. 34

GRANT OF EXEMPTION

By letter dated May 2, 1960, Richfield Oil Corporation, Long Beach, California, hereinafter referred to as Richfield Oil, requested permission to transport Class A explosives accompanied by experts trained in the handling and use of such explosives in civil aircraft within the State of Alaska, notwithstanding certain provisions of Part 49 of the Civil Air Regulations.

Richfield Oil uses these explosives and personnel in connection with its geophysical seismic explorations directed toward the development of oil and gas resources in the State of Alaska. The areas in which such explorations are conducted are in many cases inaccessible by any transportation means other than air. In the petitioner's case it is necessary in the furtherance of its explorations to transport Class A explosives and personnel trained in the handling and use of such explosives, to and between seismic shot point locations in light aircraft and in helicopters because of the lack of other means of transportation. Richfield Oil states that in small aircraft, such as Bell helicopters, there would be two experts and a maximum of 150 pounds of material which would include Class A explosives. In larger aircraft, such as the Sikorsky S-55, the maximum load would consist of a crew of three experts and their equipment which would include Class A explosives. The quantity of explosives on normal flights would consist of not more than 50 TNT primers and 50 electric blasting caps. At no time will any personnel other than those in charge of handling explosives be transported with the explosives.

Under the provisions of Part 49 of the Civil Air Regulations no explosives or dangerous articles listed in Part 72 of the Interstate Commerce Commission Regulations as Class A explosives may be carried on civil aircraft. However, individual waivers permitting deviation from the provisions of Part 49 have been issued for particular flights in emergency situations or where other forms of transportation were impracticable, subject to such terms, conditions, and limitations found necessary in the interest of safety in air commerce. Moreover, by Exemption No. 18 the Federal Aviation Agency authorized a similar exemption for the carriage of Class A explosives in civil aircraft within

Alaska without a waiver for each individual flight. Experience under this authority has indicated that such operations can be conducted without an adverse effect upon safety.

In consideration of the foregoing, I find that the requested exemption would be in the public interest and may be conducted under the same terms and conditions as Exemption No. 18 without an adverse effect upon safety. Therefore, pursuant to the authority contained in sections 313(a) and 601(c) of the Federal Aviation Act of 1958, which has been delegated to me by the Administrator (§ 405.31, 24 F.R. 2196), Richfield Oil is hereby granted an exemption from the provisions of Part 49 of the Civil Air Regulations to the extent necessary to permit the aircraft operator described in paragraph 6 to carry Class A explosives in civil aircraft within the State of Alaska. Such carriage shall be conducted under the following terms and conditions:

(1) Persons other than crew members and technically trained personnel assigned by Richfield Oil to handle and use the Class A explosives shall not be carried aboard such aircraft while carrying such explosives. The names of such personnel shall be furnished to the Regional Manager, Region 5, by Richfield Oil;

(2) Prior to each flight during which Class A explosives and technical personnel assigned by Richfield Oil to handle such explosives are to be carried, the operator shall furnish the Regional Manager with a list showing the type aircraft, registration number, area in which the aircraft is to be operated, and the names of the technical personnel to be carried. No deviations from this listing shall be made without the express approval of the Regional Manager;

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

(4) 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 Regional Manager, including weather minimum, airport approach and departure routes to avoid flight over congested areas, and notification to the airport air traffic control tower of the nature of the cargo aboard;

(5) The aircraft to be used in the operation shall meet the aircraft performance and weight limitations applicable to passenger-carrying aircraft unless otherwise authorized by the Regional Manager; and

(6) The authorization granted in this exemption shall be restricted to the following named aircraft operator currently under contract to Richfield Oil to conduct geophysical seismic exploration directed toward the development of oil and gas resources in the State of Alaska and to such other operators of aircraft as may conduct the same work under contract with Richfield Oil:

E.R.A. Helicopters, Inc.  
P.O. Box 1850  
Ventura, California

**This exemption and the authorization granted herein supersedes Exemption No. 18, issued June 23, 1959, and shall expire June 23, 1961, unless sooner superseded or rescinded by the Federal Aviation Agency.**

**/s/ B. Putnam  
Acting Director,  
Bureau of Flight Standards**

**Issued in Washington, D.C., on June 6, 1960.**

UNITED STATES OF AMERICA  
FEDERAL AVIATION AGENCY  
WASHINGTON, D.C.

<p><i>In the matter of the petition of</i> DEPARTMENT OF NATURAL RE- SOURCES STATE OF WASHINGTON  <i>for an exemption from the provisions of certain sections of the Civil Air Regulations</i></p>	}	Regulatory Docket No. 473
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GRANT OF EXEMPTION

By letter dated July 29, 1960, the Department of Natural Resources, State of Washington, petitioned for an exemption to deviate from the Civil Air Regulations in order to deal effectively with fire control and other specialized activities in connection with state and privately owned forest land in the State of Washington. The authorization sought through this exemption is similar to that granted to the U.S. Forest Service in Special Civil Air Regulation SR-397.

The Department of Natural Resources of the State of Washington uses both civil and public aircraft to carry personnel and equipment to fire areas. The aircraft and pilots are certificated, and, where possible, operations are conducted in accordance with the Civil Air Regulations. However, to deal effectively with fire control and the other specialized activities incident to the care and maintenance of the forest land in the State of Washington, it is often necessary (1) to use uncertificated personnel as parachute riggers for rigging cargo parachutes during peak-load periods; (2) to transport cargo droppers in aircraft from which approved seats and safety belts have been removed; (3) to carry gasoline or diesel oil packed in quantities up to 5 U.S. gallons in one metal container aboard passenger-carrying aircraft; (4) to carry gasoline or diesel oil packed in quantities up to 55 U.S. gallons in any one drum aboard cargo aircraft; and (5) to deviate from minimum altitude rules in sparsely populated areas. Due to the exigencies of a particular situation, it is usually impracticable for the Department of Natural Resources to seek authority in each of the above-mentioned instances to deviate from the applicable provisions of the Civil Air Regulations.

In view of the service rendered to the public in the preservation of life and property by this organization and the well-organized supervisory control which it exercises over its operations, I find that an exemption from certain provisions of the Civil Air Regulations as more specifically set forth hereinafter is in the public interest. Therefore, pursuant to the authority contained in sections 313(a) and 601(c) of the Federal Aviation Act of 1958, as amended, which has been delegated to me by the Administrator (14 CFR 405.31), the Department of Natural Resources, State of

Washington, is hereby granted an exemption from sections 25.80, 43.30(a)(12), 49.15, 49.24, 54.2(a), and 60.17(c) of the Civil Air Regulations as follows:

Contrary provisions of the above enumerated sections of the Civil Air Regulations notwithstanding, the Department of Natural Resources of the State of Washington is authorized to conduct fire control operations, and other specialized activities in connection with state and privately owned forest land in the State of Washington, which require deviations from the designated provisions of the Civil Air Regulations within the limitations stated in the petition for this exemption to the extent that the Commissioner of Public Lands, Department of Natural Resources, State of Washington, finds necessary for the expeditious conduct of such operations. The Commissioner of Public Lands shall maintain current records of each flight or series of flights for which a deviation is required. These records shall be available for inspection by an authorized representative of the Administrator and shall contain at least the following information, as appropriate:

1. Date, period of time, and location.
2. Deviation required.
3. Names of personnel involved.
4. Certificate number.
5. Aircraft make, model, and registration number.
6. Nature of flight.

This exemption and the authorization granted herein supersedes the telegram of August 5, 1960, to the Department of Natural Resources, State of Washington, and shall remain effective until superseded or rescinded.

/s/ George C. Prill  
*Acting Director,*  
*Bureau of Flight Standards*

Issued in Washington, D.C., on November 22, 1960.

UNITED STATES OF AMERICA  
FEDERAL AVIATION AGENCY  
WASHINGTON, D.C.

<i>In the matter of the petition of</i> <b>ABBOTT LABORATORIES</b> <i>for an exemption from certain provisions</i> <i>of Part 49 of the Civil Air Regulations</i>	}	Regulatory Docket No. 560
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## GRANT OF EXEMPTION

By letter dated September 12, 1960, Abbott Laboratories of Chicago, Illinois, and Oak Ridge, Tennessee, hereinafter referred to as Abbott, has requested permission to transport quantities of radioactive materials exceeding two (2) curies but not more than fifty (50) curies aboard civil aircraft. Carriage of such material aboard civil aircraft in quantities in excess of two curies generally requires an exemption from the provisions of Part 49 of the Civil Air Regulations.

In support of their request Abbott states:

a. The production of certain basic, short-lived radioactive materials (targets) obtained from various reactor sites must be further processed at their Oak Ridge (Knoxville, Tennessee) plant before they can be shipped to institutions primarily concerned with medical diagnosis and therapy.

b. The short-life period during which the targets retain their effectiveness demands fast transportation.

c. These targets consist of stable, solid, organic materials, usually elements which have been subjected to the neutron flux of a nuclear reactor. Economic considerations require that multicurie quantities (more than 2 curies) of radioactivity be produced in each target.

d. The target material is contained within a hermetically sealed aluminum capsule. For shipment, this capsule will be placed within a container providing sufficient shielding to reduce the external radiation to the limits required by regulation; i.e., 200 mr/hr at the surface and 10 mr/hr at 1 meter maximum.

e. Details of the disaster-proof shipping container which we propose to use can be found in the attached drawing. It has been approved by ICC for the shipment of multicurie quantities of solid radioactive material and has been assigned BE Permit 741.

We find that Abbott is a "licensee" of the Atomic Energy Commission and as such has wide experience and knowledge in the handling and processing of radioactive materials.

The materials to be transported are being manufactured by contractors authorized by the Atomic Energy Commission to produce radioactive materials for use by institutions furthering medical diagnosis and therapy. The shipments, however, are made in the name of the Abbott

Laboratories. It appears to be in the public interest that such research should be provided with the fullest use of these short-lived materials insofar as public safety permits. Air shipment will reduce greatly the time lost during transportation and would materially aid the research program.

Presently, the safety standards prescribed by the Civil Air Regulations limit the quantity of radioactive materials to 2 curies, or, in some instances, 2.7 curies with respect to the materials which Abbott seeks to transport by air. The present limitations do not distinguish between those materials which are "short-lived" and those which are "long-lived" and may retain hazardous effects for long periods of time. By comparison, the carriage of multicurie quantities of *short-lived* materials do not present the continuing hazard that might be encountered by a 2-curie shipment of *long-lived* materials in the event of crash emergency conditions. The principal safety items that require careful consideration involve adequate shielding within the container to prevent external radiation and the strength of the container to withstand fire and crash forces. In this respect Abbott has developed a shipping container which has been fully tested and is regarded as disaster proof. The container has been approved by the Bureau of Explosives (BE), a technical arm of the Interstate Commerce Commission, and BE Permit 741 authorizes this container to be used for shipment of quantities of radioactive materials not exceeding 50 curies in rail express.

The specifications submitted by Abbott in support of their petition conform to the specification of BE Permit 741. The container is steel-clad, leakproof, and fireproof, and of such strength that it would resist impact and fire under all the forces and fire conditions attendant upon airplane total crash conditions. The radioactive material is enclosed in a hermetically sealed aluminum capsule so shielded within the steel-clad container that the external radiation is within the limits prescribed for the 2 curie shipment, i.e., 10 milliroentgens per hour at a distance of 1 meter or 200 milliroentgens per hour at the surface. This external radiation limit would not be increased by fire or crash forces. The reliability of the container data described above has been confirmed by the Bureau of Explosives.

Additionally, we have discussed with representatives of the Atomic Energy Commission the safety considerations involved in the shipments of radioactive materials by air which exceed the quantity limitations. They have advised us that they have made numerous excess quantity shipments during the past several years under exemption authority given AEC by the regulations and they were completed with an excellent safety record.

In consideration of the foregoing and pursuant to the authority contained in sections 313(a) and 601(c) of the Federal Aviation Act of 1958, which has been delegated to me by the Administrator (14 CFR 405.31), I find that an exemption to Abbott Laboratories from the provisions of sections 49.31(f) and 49.41 of the Civil Air Regulations as more specifically set forth hereinafter would not adversely affect safety and is in the public interest since the transportation of these materials by air would permit the continuation of medical research and therapy work performed by institutions serving a public need. Therefore, Abbott Laboratories is hereby



granted an exemption from sections 49.31(f) and 49.41 of the Civil Air Regulations to the extent necessary to transport quantities of radioactive materials exceeding two (2) curies but not more than fifty (50) curies aboard civil aircraft when packed in the BE Permit 741 container. All such shipments are subject to the conditions hereinafter set forth.

a. Abbott shall furnish to each contractor making such shipments the container specifications and requirements prescribed by BE Permit 741. A record shall be retained by Abbott listing the contractors to whom such specifications have been furnished. A list of the contractors shall be furnished to the Director, Bureau of Flight Standards, Federal Aviation Agency, Washington 25, D.C.

b. All shipments exceeding the quantities as prescribed by section 73.391(b) and (c) of the Interstate Commerce Commission regulations shall be made only in the approved containers and shall show the assigned BE Permit number (741) on the outer shipping container.

c. The shipper's certificate required by Part 49 shall include the certification that the shipment is being made in accordance with the container specifications and conditions prescribed by BE Permit 741. The certification shall be made by a duly authorized representative of the shipper who has determined that the shipment has been thoroughly checked and has been found to meet the packaging and labeling requirements prescribed by Part 49 of the Civil Air Regulations except with respect to the quantity limitations prescribed by sections 49.31(f) and 49.41.

d. This authorization shall expire January 1, 1962, unless sooner superseded or rescinded by the Federal Aviation Agency.

/s/ Oscar Bakke  
*Director,*  
*Bureau of Flight Standards*

Issued in Washington, D.C., on November 4, 1960.

UNITED STATES OF AMERICA  
FEDERAL AVIATION AGENCY  
WASHINGTON, D.C.

*In the matter of the petition of*  
ALASKA COASTAL AIRLINES  
*for an exemption from certain provisions of*  
*Part 49 of the Civil Air Regulations* } Regulatory Docket No. 261

GRANT OF EXEMPTION

Since August 29, 1958, Alaska Coastal Airlines has been authorized, under specified conditions, to carry up to 20 gallons of gasoline in metal containers of greater capacity than one quart in the cabin of small civil aircraft operated entirely within Alaska. This authorization was originally granted by Civil Aeronautics Board Order No. S-917, and more recently by Federal Aviation Agency Exemption No. 57 which expires on December 31, 1960.

Current provisions of Part 49 of the Civil Air Regulations permit the carriage in passenger-carrying aircraft of not more than 50 pounds net weight of gasoline in any cargo pit or bin when packed in one quart inside containers which are packed in a strong outside container with suitable cushioning and absorbent material to prevent breakage or leakage. Exemption from the foregoing provisions of Part 49 is necessary to alleviate the problem associated with transporting sufficient quantities of gasoline to remote areas in the State of Alaska to meet the needs of the passengers utilizing the services of Alaska Coastal, since access to these areas by any transportation means other than air is impracticable. Many of these passengers desiring to hunt, fish, conduct logging operations, etc., require gasoline for their outboard motors, chain saws, lanterns, and related equipment. However, to transport sufficient quantities of gasoline for such equipment under the provisions of Part 49 would require that a separate cargo-only flight be chartered. Such a requirement places an undue burden on the passengers and does not permit full utilization of the service otherwise made available by the carrier.

The petitioner states that the circumstances which justified the granting of the original waiver by Civil Aeronautics Board Order No. S-917 on August 29, 1958, and of Exemption No. 57 by the FAA on January 25, 1960, still exist. In consideration of the foregoing, I find that an exemption from the provisions of Part 49 of the Civil Air Regulations, as more specifically set forth hereinafter, would permit better utilization of air carrier service in the remote areas of Alaska without compromising safety and would be in the public interest. Therefore, pursuant to the authority contained in sections 313(a) and 601(c) of the Federal Aviation Act of 1958, which has been delegated to me by the Administrator (14 CFR 405.31), Alaska Coastal Airlines is hereby granted

an exemption from sections 49.15 and 49.24 of Part 49 of the Civil Air Regulations as follows:

(a) Contrary provisions of the above enumerated sections of the Civil Air Regulations notwithstanding, Alaska Coastal Airlines is authorized to transport not more than 20 gallons of gasoline in other than one quart containers in any small civil aircraft operated entirely within the State of Alaska in charter operations, provided that:

(1) Such gasoline is packed in airtight and leakproof inside metal cans of at least 28 gauge of not more than 10 gallons capacity each, and each such inside metal can is packed in an outside wooden box of at least one-half inch thickness; and

(2) Each such container of gasoline is placed in the aircraft in a location which is ventilated so as to prevent the accumulation of gasoline fumes within the aircraft; and

(3) Prior to each flight on which gasoline is to be carried pursuant to this exemption, the pilot in command orally informs all passengers as to the location of the gasoline, the hazards involved, and prohibits smoking, the lighting of matches, or the carrying of any lighted cigar, pipe, or cigarette, or the use of any object that might cause an open flame or spark; and

(4) Prior to each flight on which gasoline is to be carried pursuant to this exemption, Alaska Coastal Airlines furnishes the FAA Air Carrier District Office, Juneau, Alaska, with a list showing the type of aircraft, registration number, and the area in which the aircraft is to be operated, and indicates that such carriage is necessary to meet the needs of its passengers, and that air is the only practicable form of transportation.

(b) This exemption and the authorization granted herein supersedes Exemption No. 57, issued January 25, 1960, and shall expire February 15, 1963, unless sooner superseded or rescinded.

/s/ Oscar Bakke  
*Director,*  
*Bureau of Flight Standards*

Issued in Washington, D.C., on December 31, 1960.

# **Addendum**

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Preambles of Amendments to Civil Air Regulations Part 49

## **NOTE**

**Part 49 of the Civil Air Regulations was last revised by the Civil Aeronautics Board on April 21, 1958, to become effective on June 25, 1958. The preamble of the revised part, and the preambles of any amendments thereto, are given in the attached pages.**

## General Revision Part 49

### Transportation of Explosives and Other Dangerous Articles

Adopted: April 21, 1958  
Effective: June 25, 1958  
Published: April 26, 1958  
(23 F.R. 2790)

Regulations governing the air transportation of explosives were originally promulgated in 1942 and expanded to cover "other dangerous articles" in 1944. These rules were amended in 1949 by the promulgation of a revised Part 49 to permit the carriage of additional articles as the experience gained by operators had shown that they were capable of handling a greater variety of these materials with safety. The safety standards used were the then current Interstate Commerce Commission Regulations applicable to shipments by rail express since this type of shipment closely approximated conditions met in air transportation. These requirements were more conservative and provided a greater margin of safety than were required for other means of transportation.

In 1949, Appendices A and B were added which listed those articles prohibited from transportation by air and those articles prohibited from transportation on passenger-carrying aircraft, respectively. The articles listed in Appendix A were derived from those which were not acceptable under the ICC Regulations for shipment by rail express. The articles listed in Appendix B were derived from those which were not exempt from the packing, marking, and labeling requirements of the ICC Regulations for shipment by rail express. In promulgating Part 49, the Board envisioned that the commodities listed in the appendices would be examined periodically on the basis of information furnished by the Bureau of Explosives, changes in the ICC Regulations, and such other data as became available. On the basis of information furnished by the Bureau of Explosives, the ICC Regulations have been amended quarterly. However, the appendices of Part 49 have not been amended since they were adopted in 1949. In order to insure that Part 49, without further amendment, will be continuously in accord with the ICC Regulations as they are amended from time to time, this revision contains references to the appropriate ICC Regulations and the appendices have been deleted. However, it should be emphasized that the Board's close working relationship with the Bureau of Explosives, the Interstate Commerce Commission, the Civil Aeronautics Administration, and other organizations expert in this field will be continued.

The special authority provisions of present Part 49 authorize the Administrator to permit deviations from this part for a particular flight in emergency situations, or where other forms of transportation are impracticable, where he finds that the conditions under which the articles are to be carried are such as to permit the safe carriage of persons or cargo. This revision is similar except that the Administrator may impose such terms, conditions, and limitations as he finds necessary in the interest of safety in air commerce. This change gives discretion to the Administrator to impose conditions, such as prior approval of the management of the airport of intended landing, as are necessary to insure a safe operation.

Present Part 49, as amended by Amendment 49-2, refers to Board action on December 27, 1954, approving, under Section 412 of the Civil Aeronautics Act, International Air Transport Association Traffic Conference Resolution 608 (as amended) with respect to shippers' certification and labeling requirements. Subsequent action was taken by the Board on June 15 and December 16, 1955, approving the IATA Resolutions which contain "IATA Regulations Relating to the Carriage of Restricted Articles." Labels approved by this subsequent Board action have been accepted by the ICC and are presently approved for use by the ICC Regulations. Accordingly, reference to the IATA labels has been deleted. While either the pictorial or nonpictorial label as contained in the ICC Regulations is acceptable to the United States, Canada, and Mexico for both domestic and international air shipments, only the pictorial label is acceptable to other countries as a result of the IATA Resolution. Therefore, while this part continues to permit the use of either label, it may facilitate the international air movement of commodities covered under Part 49 if the pictorial label is initially affixed to such commodities.

This part, by referencing the ICC Regulations, automatically requires the marking of proper shipping names as shown in Part 72 of the ICC Regulations. The names of restricted articles listed in the IATA Tariff are not always identical with the proper shipping names in the ICC Regulations. Therefore, to facilitate international air move-

ment of these articles, a note has been added to § 49.11 which permits additional parenthetical identification of such articles.

Technically, some of the materials carried to be dispensed during aerial application operations are not permitted to be carried in air transportation under current Part 49. In order to correct this situation, a new section is being added which will exempt these materials when carried during actual aerial application operations.

Under present Part 49 notification to the pilot of the loading of dangerous goods on board his aircraft may be made by entering the required information on the load manifest. It has been brought to our attention that in many instances this procedure is not adequate, as often the pilot is not aware that articles subject to the provisions of Part 49 have been loaded aboard his aircraft. Accordingly, the appropriate section has been reworded in this revision to assure that the pilot in command is cognizant of such shipments and their location aboard the aircraft.

The carriage of nitrocellulose base film and pyroxylin plastics in passenger and cargo operations is permitted under currently effective Part 49. The carriage of this film is predicated upon its being packed, marked, and labeled in accordance with the requirements of the ICC Regulations. In Civil Air Regulations Draft Release No. 56-23 it was proposed that such articles be prohibited from shipment in air commerce. The comments received indicate that there is a continuing need to permit the shipment of this film in air transportation, and that it has been carried for many years under the present provisions without incident. Information received from the Bureau of Explosives indicates that there have been no incidents of a fire of this film other than old and worn-out or scrap material. In view of the above, certain film will continue to be permitted to be shipped in both passenger-carrying and cargo aircraft subject to the packing, marking, and labeling requirements contained in the ICC Regulations for such film. With respect to pyroxylin plastics in sheets, rolls, rods, or tubes, experience in the shipment of these products over the past years has indicated that these articles may be shipped safely in passenger-carrying and cargo aircraft in accordance with the specifications in the ICC Regulations. Additionally, the Bureau of Explosives has advised that these materials will not heat spontaneously under conditions normal to transportation. Accordingly, the shipment of these articles will continue to be permitted in air commerce.

Present Part 49 permits flammable liquids to be carried 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, and permits acids and other corrosive liquids in bottles of not more than one pint and Class B poisonous liquids in quantities of not more than one pint in glass containers or not more than one quart in metal containers. By referencing the ICC Regulations, this revision eliminates the present requirements in Part 49 which prescribe the type of inside container so that other adequate containers may be used as provided in the ICC Regulations. Provision is also made so that quantities up to a total net capacity of one quart may be packed in any one strong outside container. While no provision is made in the part, multiple outside containers meeting the requirements of this part may be consolidated in a suitable manner for ease of handling and shipping. If this is accomplished in an additional container, this container or package would not be interpreted to be "an outside container."

Part 49 presently permits the carriage of most nonflammable compressed gases. However, there are seven such gases which, according to expert opinion, should continue to be prohibited in passenger-carrying operations. This revision continues such a prohibition.

While safety matches (strike-on-the-box type) are presently listed by Part 49 as flammable solids and are required to be packed in tightly closed metal containers in quantities of not more than 25 pounds in strong outside containers, these articles are not presently subject to ICC regulation and, accordingly, are not regulated under this revision.

In addition to the comments received in response to Draft Release 56-23 (21 F. R. 6574), extensive discussions have been held with representatives of the Civil Aeronautics Administration, the Interstate Commerce Commission, the Bureau of Explosives, industry associations, and other interested persons, and due consideration has been given to all relevant matter presented.

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Amendment 49-1  
Passenger-Carrying Aircraft

Adopted: Oct. 10, 1958  
Effective: Oct. 10, 1958  
Published: Oct. 15, 1958  
(23 F.R. 7943)

Effective June 25, 1958, the Civil Aeronautics Board revised Part 49 of the Civil Air Regulations. Prior to this revision, Part 49 permitted the carriage on passenger-carrying aircraft of certain radioactive materials when packed, marked, and labeled in accordance with the requirements for shipment by rail express. However, in the revised Part 49 such a provision was inadvertently omitted. It was not intended that the revised part should be more restrictive with respect to radioactive materials than was the previous part. The Board has found through experience, that radioactive materials when packed, marked, and labeled in accordance with requirements of Parts 72 and 73 of the ICC Regulations may be transported without any adverse effect on the safety of passengers aboard the aircraft. This amendment therefore will permit the carriage of radioactive materials as before.

Since this amendment corrects an error and imposes no additional burden on any person, notice and public procedure hereon are unnecessary, and it may be made effective immediately.

Amendment added a new paragraph (f) to section 49.31.

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