FEDERAL AVIATION AGENCY

Washington, D.C.

Civil Aeronautics Manual 49

Transportation of Explosives and Other Dangerous Articles

Supplement No. 3, CAM 49, dated April 1961 **June 15, 1962**

SUBJECT: Revisions to CAM 49.

This supplement is issued to incorporate into CAM 49 Civil Air Regulations Amendments 49–3 and 49–4.

Amendment 49–3 concerns the transportation of magnetized materials. It was issued May 31, 1962, to become effective July 9, 1962.

Amendment 49–4 concerns the use of facsimile signatures. It was issued May 31, 1962, to become effective June 7, 1962.

New or revised material is enclosed in black brackets on the pages submitted with this supplement except the pages in the addendum containing the preambles of amendments.

Remove the following pages:	*Insert the following new pages:*
III	III
1 through 6	1 through 6–1
P–5	P–5 through P–7

GEORGE C. PEILL, *Director,*
Flight Standards Service.

Attachments.

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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 [, or any other articles specifically regulated by the rules of this part,] 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.

(Part 49, 23 F.R. 2790, Apr. 26, 1958, effective June 25, 1958; as amended by Amdt. 49-3, 27 F.R. 5393, June 7, 1962, effective July 9, 1962.)

49.2 *Special authority.*

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

(1) Authority to deviate from any of the provisions of this part for a particular operation, involving one or more flights, may be issued by an authorized representative of 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.

(Part 49, 23 F.R. 2790, Apr. 26, 1958, effective June 25, 1958; as amended by Amdt. 49-2, 26 F.R. 12213, Dec. 21, 1961, effective Dec. 21, 1961.)

49.2-1 Authority to deviate from the provisions of Part 49 (FAA policies which apply to sec. 49.2(a)). Authority to deviate from the provisions of Part 49 for a particular operation may be issued to cover the cases described in paragraph (a) or (b) of this section.

(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; amended 26 F.R. 12213, Dec. 21, 1961, effective Dec. 21, 1961.)

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 authorization is limited to the particular operation and to the articles for which the authorization is requested, and it will specify the point or points of origin where the articles are to be placed aboard the aircraft and the point or points of destination where such articles are to be 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; amended 26 F.R. 12213, Dec. 21, 1961, effective Dec. 21, 1961.)

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 aircraft 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, copartnership, 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).

(Part 49, 23 F.R. 2790, Apr. 26, 1958, effective June 25, 1958.)

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.

(Part 49, 23 F.R. 2790, Apr. 26, 1958, effective June 25, 1958.)

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.

(Part 49, 23 F.R. 2790, Apr. 26, 1958, effective June 25, 1958.)

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 that the shipment complies with the requirements of this part which shall be signed by the shipper or his duly authorized agent. The shipper or his duly authorized agent may use a facsimile stamp of his signature in lieu of his actual signature.] 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 [or stamped with the facsimile signature of] 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 [or stamped with the facsimile signature of] the shipper or his duly authorized agent for each consignment. One signed [or stamped] copy shall accompany the shipment and the other signed [or stamped] 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.

(Part 49, 23 F.R. 2790, Apr. 26, 1958, effective June 25, 1958; as amended by Amdt. 49–4, 27 F.R. 5392, June 7, 1962, effective June 7, 1962.)

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.

(Part 49, 23 F.R. 2790, Apr. 26, 1958, effective June 25, 1958.)

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.

(Part 49, 23 F.R. 2790, Apr. 26, 1958, effective June 25, 1958.)

[*49.16 Packing and marking requirements for magnetized materials.* No shipper shall offer magnetized materials for shipment by air unless:

[(a) The outside of the package has been plainly marked "Magnetized Materials";

[(b) Magnets or magnetized devices such as magnetrons and light meters have been packed so that the polarities of the individual units oppose one another; and

[(c) Permanent magnets have keeper bars installed, or are shielded so as to prevent the magnetic field from affecting the magnetic compass.]

(Added by Amdt. 49–3, 27 F.R. 5393, June 7, 1962, effective July 9, 1962.)

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.

[(d) Magnetized materials shall not be loaded on the aircraft in the vicinity of the magnetic compasses or compass master units which are a part of the instrument equipment of the aircraft so as to affect their operation. If it is not possible to meet this requirement, a special aircraft swing and compass calibration shall be made. Care shall be taken so that warning markers are not obscured upon cargo loading.

[Note: Magnetized material as used herein is that material which is magnetized to the extent that it might affect the magnetic compass and produce an erroneous compass reading.]

(Part 49, 23 F.R. 2790, Apr. 26, 1958, effective June 25, 1958; as amended by Amdt. 49–3, 27 F.R. 5393, June 7, 1962, effective July 9, 1962.)

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.

(Part 49, 23 F.R. 2790, Apr. 26, 1958, effective June 25, 1958.)

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.

(Part 49, 23 F.R. 2790, Apr. 26, 1958, effective June 25, 1958.)

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.

(Part 49, 23 F.R. 2790, Apr. 26, 1958, effective June 25, 1958.)

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 [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 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.

(Part 49, 23 F.R. 2790, Apr. 26, 1958, effective June 25, 1958.)

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.

(Part 49, 23 F.R. 2790, Apr. 26, 1958, effective June 25, 1958; as amended by Amdt. 49–1, 23 F.R. 7943, Oct. 15, 1958, effective Oct. 10, 1958.)

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.

(Part 49, 23 F.R. 2790, Apr. 26, 1958, effective June 25, 1958.)

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 new paragraph (f) to section 49.31.

Amendment 49–2

Special Authority for an Operation Including One or More Flights

Adopted: Dec. 15, 1961
Effective: Dec. 21, 1961
Published: Dec. 21, 1961
(26 F.R. 12213)

Regulations governing the air transportation of explosives were originally promulgated in 1942 and expanded to cover "other dangerous articles" in 1944. These rules have been revised several times since then to permit the carriage of additional articles as the experience gained showed that a greater variety and quantity of these materials could be transported with safety.

Section 49.2 presently authorizes deviations for a particular flight in an emergency situation, or when other forms of transportation are impractical. This requires an individual authorization for each flight and this has proved to be a cumbersome procedure for both the aircraft operators and the Administrator when the total amount of material cannot be carried on one flight. Repeated issuance for each flight can be so time-consuming that it can cause serious delays in an air carrier's operation and may create critical commercial and industrial shortages of material and economic loss to the user. Experience gained under these deviations over the years has proved that repeated individual flights have been operated under the same terms and conditions without adverse effect on safety and it now appears reasonable to apply the deviation to an overall operation rather than to a particular flight.

Adequate control over these operations is provided for in the authorization since each operation must be conducted under such terms, conditions, and limitations as are found necessary in the interest of safety in air commerce.

Since this amendment imposes no additional burden upon any person, notice and public procedure hereon are unnecessary, and it may be made effective on less than 30 days' notice.

Amendment revised paragraph (a)(1) of section 49.2, revised the introductory paragraph of section 49.2–1, and revised paragraph (d) of section 49.2–2.

Amendment 49-3

Transportation of Magnetized Materials

Adopted: May 31, 1962
Effective: July 9, 1962
Published: June 7, 1962 (27 F.R. 5393)

A notice of proposed rule making was published in the Federal Register on February 6, 1962 (27 F.R. 1073), and circulated as Draft Release No. 62-3 dated January 29, 1962, which proposed to amend Part 49 of the Civil Air Regulations to provide for the transportation of magnetic materials.

The comments received were generally in favor of requiring that certain safeguards be taken in the shipment of magnets or magnetic material by air and reflected endorsement of the principles of the proposal. However, there was some concern noted relative to the possible obscuration of warning markers on the packages of magnetized material which might occur during the loading of this cargo. The comments also reflected concern over requiring that keeper bars only be installed on magnets "where possible," and indicated the need to have keepers bars installed on magnets at all times or a need for other means of protection to be provided to prevent the magnetic field from adversely affecting the magnetic compass.

In proposing this amendment, the Agency considered that explosives and other dangerous articles as defined by Part 49 of the Civil Air Regulations do not include magnetic materials. Air shipments of magnets and magnetic devices can adversely influence the accuracy of magnetic compasses unless they are properly packed and kept at a safe distance from the aircraft's compass. In order to safeguard the navigation of the aircraft, it is necessary to require the shippers of magnetic materials to mark clearly any packages containing magnetized materials and to install keeper bars on permanent magnets at all times or provide other protection to prevent the magnetic field from adversely affecting the magnetic compass.

There are a number of magnetic shield materials available which are being used as dust covers on some airborne weather radar units. These dust covers are sufficiently effective as magnetic shielding devices so that compass external compensating magnets are not required.

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.

Amendment made changes in section 49.1(a) and added new sections 49.16 and 49.21(d).

Amendment 49-4

Authorization for Use of Facsimile Signature

Adopted: May 31, 1962
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Section 49.13(a) of the Civil Air Regulations prohibits a shipper from offering, or an air carrier or other operator of civil aircraft from knowingly accepting, 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 Part 49 of the Civil Air Regulations. Section 49.13(b) requires that this certification of compliance be made upon the ICC label affixed to each package when there is a provision on the face of the label for such certification. When the label used does not have such a provision, the certification must be made in duplicate and signed by the shipper or his duly authorized agent for each consignment.

The increase in the manufacture of new chemicals and other restricted materials has resulted in a greater demand for the shipment of these articles by air. Manufacturers who produce and ship by air large quantities of these articles have met with delays in preparing them for shipment because of the necessity of having each label or statement

actually signed by the shipper or a duly authorized agent. It has been recommended that the shipper be permitted to have the label or statement stamped with a facsimile signature of the shipper or his authorized agent as an alternative to the actual signature. This practice is permitted in other forms of transportation which are regulated by the Interstate Commerce Commission. It has been determined that the use of the stamped certificate of compliance is satisfactory and has caused no safety problems.

The authorization for the use of a facsimile signature under Part 49 would conform with the requirements for the shipment of these articles in other forms of transportation and thus facilitate their acceptance for shipment by air. The use of a facsimile signature identifies the shipper as clearly as an actual signature, thus meeting that purpose of the regulation.

Since this amendment relieves a restriction and imposes no additional burden on any person, I find that notice and public procedure hereon are unnecessary, and it may be made effective on less than 30 days' notice.

Amendment made changes in section 49.13.

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