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**Title 14—Aeronautics and Space**

**CHAPTER I—FEDERAL AVIATION ADMINISTRATION, DEPARTMENT OF TRANSPORTATION**

[Docket No. 13668; Amdt. No. 103-231

**PART 103—TRANSPORTATION OF DANGEROUS ARTICLES AND MAGNETIZED MATERIALS**

**Loading and Carrying Dangerous Articles: Inspection Requirements and Radiation Monitoring**

The purpose of these amendments to Part 103 of the Federal Aviation Regulations is to prohibit the carriage of any dangerous article in an aircraft unless the outside container in which that article is packaged has been inspected to determine that, in all outward respects, it complies with the packaging, marking, and labeling requirements of Part 103. In addition to this inspection, these amendments require that, after June 30, 1975, when radioactive materials are to be carried, the exterior surfaces of the package, and, when appropriate, certain parts of the aircraft, be scanned with a radiation monitoring instrument.

These amendments are based on a Notice of Proposed Rule Making (Notice No. 74-18) published in the *FEDERAL REGISTER* on April 25, 1974 (39 FR 14612). Interested persons have been afforded an opportunity to participate in the making of these amendments and due consideration has been given to all comments received in response to that Notice. Except as discussed hereinafter, these amendments and the reasons therefore are the same as those in Notice 74-18.

More than 65 comments were received in response to Notice 74-18. These range from full support of the proposal to recommendation of revisions to total objection. Several commentators made suggestions that were not within the scope of the Notice, and, accordingly, these comments are not discussed, but will be retained for consideration in future rule making. The most frequent objection was to the requirement that air carriers monitor shipments of hazardous materials and, especially, that they be required to acquire expensive radiation monitoring equipment and have it available at each place where packages containing radioactive materials are loaded or unloaded. The FAA believes, however, that inspection by air carriers to the limited extent required by these amendments is necessary in the interests of safety. This inspection does not require the opening of packages but only the inspection of containers for leaks, holes, dents or other

evidence that the packaging is not intact. With respect to the monitoring of radioactive shipments, the FAA realizes that, in order to fulfill the requirements that are adopted by these amendments, persons who transport radioactive materials by air will be required to obtain radiation monitoring equipment and to have it available wherever packages containing such materials are loaded or unloaded aboard their aircraft.

A number of commentators objected to the scanning of the passenger compartment with a radiation monitoring device prior to departure of the aircraft for a variety of reasons. One commentator noted that such scanning would produce unnecessary apprehension in the passengers and might result in aircraft delays. Another, an air carrier, objected to the requirement since it has instituted procedures to check radioactive shipments with radiation monitoring equipment at acceptance, transfer points and destination stations. Others objected to the fact that standards for maximum acceptable radiation levels in the passenger compartment are vague whereas the standards for individual packages are specific and workable. After further consideration in light of these comments, the proposed requirement for a scan of the passenger compartment prior to takeoff of any aircraft carrying radioactive materials has not been adopted. Instead, the regulations, as adopted, require only a scan of each package containing radioactive materials to be loaded aboard the aircraft.

In addition, proposed § 103.23(c) (1) has been revised to clarify the determination to be made prior to placing any package containing radioactive materials in an aircraft. The FAA believes that these measures will be more effective in detecting any possible conditions that might involve radiation levels in excess of those permitted by the regulations than would scanning the passenger compartment as proposed.

The requirements to be complied with in conducting the scanning of any package of radioactive material, and, when required, any cargo compartment in which it has been carried, are set out in a separate paragraph, new paragraph (d) of § 103.23. The radiation levels that are specified in § 103.23(d) for scanning any package bearing a radioactive yellow II label, any package containing a radioactive yellow III label, any package that contains radioactive materials but that does not bear either of these labels, and

for scanning a compartment from which a package has been unloaded, are those that are currently prescribed in Title 49 Part 173 and in § 103.23(b).

Several commentators objected to the requirement that was proposed in Notice 74-18 that the compartment in which any package containing radioactive materials is carried be scanned for excessive radiation after removal of the package. These commentators pointed out that even though one package has been removed, the cargo compartment might contain other packages of the material for later delivery. The FAA agrees with these comments, and accordingly, new § 103.23(c) (2) has been changed from what was proposed as new § 103.23(c) (3) in Notice 74-18 to require only that each package of radioactive materials that is removed from the aircraft be scanned in accordance with new § 103.23(d). Only in the event that the level of radiation of the package exceeds those levels specified in paragraph (d) will the aircraft operator be required to empty the compartment of all cargo and conduct the scan of the cargo compartment that was proposed in Notice 74-18.

As proposed in Notice 74-18, the scan required by § 103.23 is required to be performed using a radiation monitoring instrument with an accuracy of plus or minus 20 percent. Accordingly, the measurements that are required to be taken by that section are designed to tolerate a 20 percent deviation. However, deviations in the radiation dose rate that are lower than those indicated on any package will not require any action on the part of the aircraft operator.

The requirement that the operator of the aircraft scan any package that contains radioactive materials with an appropriately sensitive radiation monitoring instrument before acceptance of it for carriage by air becomes effective after June 30, 1975, because the FAA believes that aircraft operators that carry radioactive materials should be given time to acquire the necessary radiation monitoring instruments and to train personnel in their use.

An editorial change has been made to § 103.3(a) to clarify the meaning of the phrase "a facsimile of [the shipper's] signature." Section 103.3(a), as adopted, permits the signature that is required on the shipper certificate to be made by typewriter or other mechanical means.

A phrase, "and the package seal has not been broken," has been added to § 103.4(1) to clarify the fact that the

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seal on any package containing radioactive materials must be intact in order to assure that the package has not been illicitly opened.

A redundancy has been removed from what was proposed for § 103.4 by the exclusion of paragraph (4) of the proposed section since that paragraph merely reiterated what was said in paragraph (3).

These amendments are issued under the authority of sections 313(a) and 601 of the Federal Aviation Act of 1958 (49 U.S.C. 1354(a) and 1421), and sections 105 and 108 of Pub. L. 93-633, as delegated to the Administrator by the Secretary of Transportation (40 FR 2861).

In consideration of the foregoing, and for the reasons stated in Notice 74-18, Part 103 of the Federal Aviation Regulations is amended, effective March 7, 1975, as follows:

1. By amending § 103.3 by revising paragraph (a) and by adding a new paragraph (d) to read as follows:

**§ 103.3 Certification requirements.**

(a) No person may offer any dangerous article for shipment in an aircraft unless there is accompanying the shipment a clear and visible statement that the shipment complies with the content, quantity, packaging, marking, and labeling requirements of this part. The shipper's statement shall include a statement of whether the shipment is eligible under this part for shipment in passenger-carrying aircraft. The shipper or his authorized agent shall sign the statement manually, or by typewriter or other mechanical means.

(d) No person may accept any dangerous article for shipment in an aircraft unless—

(1) It is accompanied by the statement required by paragraph (a) of this section;

(2) The inspection required by § 103.4 discloses that the packaging, marking, and labeling of the hazardous material is in compliance with this Part; and

(3) After June 30, 1975, for radioactive materials, the inspection required by § 103.23(c) discloses that the radiation dose rate does not exceed any requirement set forth in § 103.23(d).

2. By adding a new § 103.4 to read as follows:

**§ 103.4 Inspection requirements.**

(a) No person may carry any dangerous article in an aircraft unless, prior to

placing the article in the aircraft, the operator of the aircraft has inspected the outside container in which that article is packaged and has determined that—

(1) The container has no dents, holes, leakage or other indication that the integrity of the packaging has been compromised and, for radioactive materials, that the package seal has not been broken;

(2) The labeling and marking of the container complies with the requirements of this part; and

(3) The dangerous article is authorized, and is within the quantity limitations specified, by this part for carriage aboard the aircraft.

3. By adding new paragraphs (c) and (d) to § 103.23 to read as follows:

**§ 103.23 Special requirements for radioactive materials.**

(c) In addition to the inspection required by § 103.4, after June 30, 1975, the operator of the aircraft shall—

(1) Before placing any package of radioactive materials in an aircraft, scan it in accordance with paragraph (d) of this section.

(2) After the removal of any package containing radioactive materials from an aircraft and before the next departure of the aircraft—

(i) Examine the package visually for any evidence of leakage, and scan it in accordance with paragraph (d) of this section; and

(ii) When the examination or the scanning required by subparagraph (2)(i) of this paragraph discloses any leakage or indicates that the level of radiation exceeds any of the levels specified in subparagraph (2) of paragraph (d) of this section, immediately empty the compartment from which the package was unloaded and scan the compartment in accordance with paragraph (d) of this section.

(d) In conducting the scanning required by paragraph (c) of this section, the operator shall—

(1) Use a radiation monitoring instrument that is accurate to plus or minus 20 percent;

(2) When scanning a package, scan each exterior surface of the package to determine whether the level of radiation being emitted exceeds any of the following:

(i) Any level of radiation specified for

the package in any shipper's statement required by § 103.3 or 49 CFR Part 173.

(ii) Any level of radiation indicated by any label or marking on the package.

(iii) A transport index of 0.5 for a package bearing a radioactive yellow II label.

(iv) A transport index of 10 for a package bearing a radioactive yellow III label.

(v) A radiation dose rate of zero millirem per hour at 3 feet from all exterior surfaces for a package that does not bear a radioactive yellow II or a radioactive yellow III label.

(3) When scanning a compartment from which the package has been unloaded, scan the compartment to determine the following:

(i) Whether there has been any spillage of radioactive material.

(ii) Whether the radiation dose rate at any surface of the compartment exceeds 0.5 millirem per hour.

(c) No person may operate any aircraft when a scanning in accordance with paragraph (d)(3) of this section indicates any spillage of radioactive materials or a dose rate of 0.5 millirem or more per hour until—

(1) There is no significant removable radioactive surface contamination; and

(2) A new scanning indicates a dose rate of less than 0.5 millirem per hour.

4. By amending § 103.25 to read as follows:

**§ 103.25 Notification of pilot in command.**

(a) Whenever articles subject to the provisions of this Part are carried in an aircraft, the operator of the aircraft shall include in the cargo load manifest, and in a written notice given to the pilot in command before takeoff, the following information:

(1) The shipping name and the classification of each dangerous article as prescribed in 49 CFR 172.5.

(2) The quantity in terms of weight, volume, or as otherwise appropriate.

(3) The location of the dangerous articles in the aircraft.

(4) The results of the inspections required by § 103.23.

Issued in Washington, D.C., on January 28, 1975.

ALEXANDER P. BUTTERFIELD,  
Administrator.