DEPARTMENT OF TRANSPORTATION
MATERIALS TRANSPORTATION BUREAU
WASHINGTON, D.C. 20590

[49 CFR Parts 107, 172, 173, and 175]
[Docket No. HM-166B; Notice 79-8]

Shipment of Hazardous Materials by Air; Miscellaneous Proposals

AGENCY: Materials Transportation Bureau, Research and Special Programs Administration, Department of Transportation (DOT).

ACTION: Notice of Proposed Rulemaking.

SUMMARY: The Material Transportation Bureau is proposing to amend certain regulations pertaining to the shipment of hazardous materials by aircraft. This notice involves package orientation markings, package inspection requirements, and proposed changes to allow full or partial exceptions for items such as wheelchairs equipped with nonspillable batteries, escape and evacuation slides, transport incubators, organ preservation units, and dry ice. Also included in this notice is a proposal to allow certain exceptions from the maximum transport index and separation requirements for radioactive materials aboard cargo-only aircraft under a strict radiation control program to be established by the carriers. These proposals are based upon either a petition for rulemaking or on the initiative of the Bureau to clarify, simplify, or eliminate existing regulations relating to air shipments of hazardous materials.

DATE: Comments on or before July 20, 1979.

ADDRESS: Send comments to Dockets Branch, Materials Transportation Bureau, U.S. Department of Transportation, Washington, D.C. 20590. It is requested that five copies be submitted.

FOR FURTHER INFORMATION CONTACT: John C. Allen, Office of Hazardous Materials Regulation, Materials Transportation Bureau, Research and Special Programs Administration, 2100 2nd Street S.W., Washington, D.C. 20590, (202-755-4962).

SUPPLEMENTARY INFORMATION: The Material Transportation Bureau published a Notice of Proposed Rulemaking (Docket HM-166, Notice 78-11) on November 30, 1978 (43 FR 56070) entitled Shipment of Hazardous Materials by Water. It was indicated in the Supplementary Information in that notice that Docket HM-166 would be a docket used to incorporate changes in the hazardous materials regulations based on either petitions for rulemaking or on the Bureau's own initiative. This is the third notice under HM-166 and considers petitions and proposals relating to the shipment of hazardous materials by air. The proposals are categorized as follows:

1. *Wheelchairs with non-spillable batteries (§ 173.250).*

Wet electric storage batteries are forbidden from shipment by passenger-carrying aircraft. However, § 173.250(a) excepts automobiles or other specifically named self-propelled vehicles equipped with wet electric storage batteries from all hazardous materials regulations including shipment by passenger aircraft. Most items meeting this shipping description are too large to be stowed in the smaller compartments on passenger-carrying aircraft and therefore are shipped by cargo-only aircraft. However, a problem arises with respect to the shipment of smaller "self-propelled vehicles, engines, or other mechanical apparatus" which are equipped with wet electric storage batteries. These items are often small enough to be laid sideways in the cargo compartment. Some, for example electric wheelchairs, are even collapsible. This has resulted in incidents where the storage batteries have leaked battery fluid because the vehicle or apparatus to which they are attached is not stowed in an upright position, particularly on passenger-carrying aircraft where cargo compartments may not be very large.

The Bureau proposes to alleviate this problem by generally forbidding the carriage of automobiles and other self-propelled vehicles equipped with electric storage batteries by passenger-carrying aircraft. An exception will be provided in § 173.250 for items such as wheelchairs which are equipped with batteries of the non-spillable type.

2. *Escape and evacuation slides (§§ 172.101, 173.906).*

On March 2, 1978, the Bureau amended the hazardfous materials regulations under Docket HM-139 (43 FR 8519) to provide for the shipment of inflatable liferafts containing small quantities of hazardous materials as an ORM-C. A general packaging section was added in § 173.906 and a new entry was added to § 172.101 to accomplish this.

MTB proposes to expand these provisions to include inflatable escape and evacuation slides. These items, similar to inflatable liferafts, are emergency equipment often installed in aircraft for use as lifesaving apparatus. The proposal would provide for the transportation of these slides, which contian small quantities of hazardous materials, aboard aircraft as long as they are adequately protected by a strong outside packaging.

3. *Transport incubators and organ preservation units (§ 175.10).*

The Bureau is proposing under certain conditions to except transport incubators and organ preservation units from the hazardous materials regulations when shipped by air. These life-saving apparatus utilize oxygen or other types of compressed gas in transporting infants or human organs for transplant purposes. The compressed gas would be required to be in an authorized DOT cylinder to qualify for the exception. This equipment has been carried in passenger compartments under DOT exemptions for the past several years with no reported problems.

4. *Package orientation markings (§ 172.312).*

The Bureau is proposing to amend § 172.312 which pertains to orientation markings on packages with inside packagings containing liquid hazardous materials. This section requires such packages to be marked "THIS SIDE UP" or "THIS END UP" and requires the inside containers to be packed with closures up. An exception is allowed for flammable liquids in inside containers of one quart capacity or less. The Bureau believes that in order to qualify for this exception when shipping by air, the shipper should insure that there is ample absorption material in the package to completely absorb the liquid contents. Accordingly, § 172.312 would be revised by adding paragraphs (d) and (e) which would separate the flammable liquid exception pertaining to air shipments from the exception pertaining to other modes.

5. *Exceptions from transport index limits and separation requirements for non-fissile radioactive materials shipped in cargo-only aircraft (§ 175.705).*

It is proposed to add a new section to Part 175 to allow the use of cargo-only aircraft for the carriage of non-fissile radioactive materials under a professionally supervised radiation protection program. Several air carriers have very successfully operated under such a program since 1976 as authorized by DOT Exemption No. 7060.

Essentially air carriers would be allowed to carry radioactive materials whose total transport indices exceed 50 in cargo-only aircraft without meeting the separation distance requirements of § 175.700(a). In order to qualify for these exceptions, the carrier must have established a radiation protection program which must include the following:

Supervision by a competent health physicist meeting certain minimum professional requirements.

Keeping exposure limits within the standards established by the Occupational Safety and health Administration (OSHA) in 29 CFR 1910.96 and otherwise as low as reasonably achievable.

Conducting monthly contamination surveys and submitting results to the local FAA office.

6. *Exceptions for certain flammable liquids (§ 172.100(g)(3)).*

Several petitioners have requested that an exception now located in § 172.100(g)(3) be moved to § 173.118 for clarification. The exception pertains to the net quantity limitations for flammable liquids with flash points above 73°F aboard aircraft. Petitioners argue that this exception should appear in § 173.118 which contains limited quantity exceptions for flammable liquids. The Bureau agrees and it is proposed to re-locate the provisions of § 172.100(g)(3) to § 173.118(b).

7. *Carbon dioxide, solid (Dry Ice) (§§ 173.615, 175.10).*

Solid carbon dioxide, or dry ice, is often used as a refrigerant to preserve perishable items in a package. It is subject to the hazardous materials regulations only when shipped by air or water under the hazard class of ORM-A. The Bureau recently published an amendment to the packaging requirements in § 173.615 which allowed an exception from the shipping paper and certification requirements when dry ice is used a a refrigerant for diagnostic or medical treatment materials (Docket HM-147, 42 FR 5059). This amendment was in response to indications that such medical supplies, often in need of quick and expeditious movement, were being unnecessarily frustrated by documentation requirements.

MTB has now been petitioned to extend this exception to include dry ice used for refrigeration of any material that is not otherwise regulated as a hazardous material as long as there is 5 pounds or less of dry ice in the package and it is packaged and marked as now required. It is argued that dry ice used for preserving such innocuous items as ice cream, fish and chickens are now subject to documentation requirements while medical diagnostic materials are excepted.

The Bureau believes that some exceptions should be allowed for small quantities of solid carbon dioxide which is used for refrigeration of other non-hazardous articles. Consequently, it is proposed to except dry ice from shipping paper and certification requirements and from the provisions of part 175 when there is 5 pounds or less of dry ice per package and when the package meets the requirements of § 173.615(a) and is marked with both the name of the contents being refrigerated and "DRY ICE" or "CARBON DIOXIDE, SOLID." Marking the name of the material being refrigerated on the package is being required to allay fears that shippers will try to pack regulated hazardous materials with dry ice and thus avoid other requirements.

It is also being proposed to except packages containing 5 pounds or less of dry ice from the provision in § 173.615(a) which requires advance arrangement between shippers and carriers prior to each air shipment.

8. *Informing passengers of hazardous materials restrictions (§ 175.25).*

It is being proposed to add a new provision in Part 175 to require air carriers to display FAA approved notices at appropriate locations within the airport to inform passengers of restrictions against carrying hazardous materials in personal baggage aboard aircraft and the penalties associated with such practice.

It is contended by the Airline Pilots Association (ALPA) that incidents involving hazardous materials carried in passenger baggage continue to occur. ALPA maintains that such incidents "range from ignition of fuel contained in camp stoves which are inside campers' backpacks to leakage of chemicals such as nitric acid from samples carried by business travelers."

Although it is not clear that such incidents are commonplace, the Bureau believes there is merit to the ALPA proposal. Passengers may often be unaware of the dangers involved in carrying hazardous materials in their baggage. In addition, it is contended that some passengers knowingly violate restrictions on hazardous materials to circumvent the "red tape" which they believe would otherwise be involved. Consequently, MTB proposes to add § 175.25 to require aircraft operators to inform passengers of the hazardous materials restrictions and penalties.

9. *Inspection of hazardous materials packages (§ 175.30).*

The air carrier is required by § 175.30 to inspect a package containing hazardous materials for its integrity prior to placing the package aboard an aircraft. MTB is proposing to "except" certain specifically named items from this requirement where there is no useful purpose to be served from the package inspection.

For example, ORM-D materials packed in freight containers and offered for transportation by one consignor are presently excepted from the package inspection requirements. All other hazardous materials packed in a freight container must be inspected by the air carrier. MTB believes this is an important and necessary requirement for the originating carrier. However, the Bureau questions the usefulness of requiring each succeeding air carrier to open the freight container each time it is transferred from one carrier to another. It is being proposed in this notice to require only the originating carrier to open and inspect the contents of a freight container loaded with packages of hazardous materials as long as written notification of package inspection is transferred to each subsequent air carrier.

In addition, two other specifically identified items should be excepted from package inspection. Packages containing magnetizing materials do not require inspection since these materials need to be identified only for the purpose of proper location aboard the aircraft. Dry ice (carbon dioxide, solid) should be identified as to quantity and cargo location, but actual package inspection serves very little purpose. Consequently, it is proposed to except these materials also from the package inspection requirements.

Two other editorial amendments to § 175.30 are being proposed merely for clarity and to avoid confusion. Paragraph (b) pertains to the actual inspection of the package before it is placed on an aircraft. MTB proposes to add the word "immediately" before the word "prior" to clearly establish that the package should be inspected for integrity just before placing it aboard the aircraft. This is to preclude the possibility where the inspection is conducted several days before actually being placed on the aircraft. Finally, paragraph (a)(1) of § 175.30 would be amended to reference § 175.310 as well as § 172.101 for applicable quantity limitations aboard aircraft.

10. *Explosives carried under § 175.320.*

A proposed change to § 175.320(b)(8) would delete the requirement for obtaining route approval when carrying Class A explosives. The Bureau believes that this requirement is unreasonable and does not contribute to safety since route approval, or clearance, is largely determined by the Federal Airways System. The intent of this requirement was to insure that aircraft carrying Class A explosives avoid flight over highly populated areas whenever possible. This is a responsibility that can be accomplished by the aircraft operator through careful planning of his own route. The approval of every route by an FAA inspector is an unnecessary step and reduces the flexibility which is necessary in a flight plan to consider other important variables. When the

aircraft is operating under radar control, however, the aircraft operator will be required to request appropriate vectors to avoid heavily populated areas.

11. *Miscellaneous changes.*

MTB proposes to amend the introductory wording of Appendix B to Part 107 pertaining to the additional requirements placed on air carriers operating under exemptions. The second part of Appendix B is entitled "Flights of Civil Aircraft." This part of Appendix B should be applicable only to cargo-only aircraft. For example, if condition number one were applicable to passenger aircraft, then no passenger would be allowed on any flight which carried a hazardous material under a DOT exemption. In addition, Docket HM-168 (43 FR 57928) has proposed that the word "civil" be deleted from this title. Consequently the title of this portion of Appendix B would be amended to read "Flights of Cargo-only Aircraft" and the first sentence would be changed to reflect this.

Sections 175.305(a)(4) and 175.310(c)(4)(iii) now require air carriers to maintain a certain "ventilation rate" in compartments loaded with self-propelled vehicles and with containers of flammable liquids respectively. The Bureau believes this to be an impractical burden on aircraft operators. Means for determining ventilation rates are not readily available except to some manufacturers of aircraft or perhaps to large and sophisticated maintenance facilities. These requirements would be re-worded to simply require air carriers to prevent the dangerous accumulation of fuel vapors.

Section 172.100(g)(2) would be amended by deleting the word "outside" in the first sentence. This would eliminate some existing confusion since the word "outside" is not used in Column (6)(b) of the Hazardous Materials Table in § 172.101 to which this regulation refers. Also, the term "package" is clearly defined in § 171.8 and the descriptive word "outside" is not necessary in this particular instance.

Another proposed amendment to eliminate confusion and provide clarity is to re-word § 172.100(f) which explains the nature of Column 5 of the Hazardous Materials Table in § 172.101. It is stated that Column 5(a) contains references to "exceptions" from the packaging references given in Column 5(b). However, these are not the only exceptions from the packaging requirements. There are other exceptions relating to the specific mode of transportation in Parts 174, 175, 176 and 177 and this fact would be reflected in § 172.100(f).

The Bureau has also been petitioned to amend the requirements in § 173.307(a)(2) and § 175.10 pertaining to the shipment by air of inflated tires. The regulations now require the tires to be inflated to not more than 100 psig at 70° F in order to qualify for exceptions. The Bureau is proposing to allow tires to be inflated to their rated service pressure.

Finally, an editorial change is being proposed to § 175.33 relating to notification of the pilot of hazardous materials aboard the aircraft. The last word in the introductory paragraph which is "takeoff" would be changed to "departure." This is merely for consistency since the term departure is used in a similar manner in § 175.35.

The principal drafters of this document are John C. Allen, Office of Hazardous Materials Regulation, and George W. Tenley of the Office of Chief Counsel, Research and Special Programs Administration.

In consideration of the foregoing, Parts 107, 172, 173, and 175 of Title 49 Code of Federal Regulations, would be amended as follows:

PART 107—HAZARDOUS MATERIALS PROGRAM PROCEDURES

1. In Appendix B following Subpart B of Part 107, the title to the second section and the introductory sentence preceding paragraph (1) would be amended to read as follows:

Appendix B—Standard Conditions Applicable to Exemptions

* * * * *

Flights of Cargo-only Aircraft

Exemptions from the regulations governing the transportation of hazardous materials on cargo-only aircraft are subject to the following conditions:

* * * * *

PART 172—HAZARDOUS MATERIALS TABLE AND HAZARDOUS MATERIALS COMMUNICATIONS REGULATIONS

2. In § 172.100, paragraph (f), the introductory text of paragraph (g), and paragraph (g)(2) would be revised; paragraph (g)(3) would be deleted as follows:

§ 172.100 Purpose and use of the table.

* * * * *

(f) Column 5 references the applicable packaging section of Part 173. Exceptions from some of the requirements of this subchapter are noted in column 5(a). Other exceptions relating to the specific mode of transportation are contained in Parts 174, 175, 176 and 177 of this subchapter. Reference to specific packaging requirements are certain additional exceptions are noted in column 5(b).

(g) Column 6 specifies the maximum net quantity in one package for air transportation or passenger railcar. An exception for certain flammable liquids is provided in § 173.118 of this subchapter.

(1) * * *

(2) Column 6(b) specifies the maximum net quantity for one package on cargo-only aircraft. Packaging must bear the CARGO AIRCRAFT ONLY label when the quantity of hazardous material exceeds that authorized on passenger-carrying aircraft, or is forbidden on passenger-carrying aircraft.

(3) [Deleted]

* * * * *

3. In § 172.101 the Hazardous Materials Table would be amended as follows:

(1)	(2)	(3)	(4)	(5)		(6)		(7)		
	Hazardous materials descriptions and proper shipping names	Hazard class	Labels(s) required (if not excepted)	Packaging		Maximum net quantity in one package		Water shipments		
				(a) Exceptions	(b) Specific requirements	(a) Passenger carrying aircraft or railcar	(b) Cargo only aircraft	(a) Cargo vessel	(b) Passenger vessel	(c) Other requirements
	(Change) *		*			*		*		*
	Battery electric storage, wet, with automobile, auto parts, engine (or other specifically named mechanical apparatus)	Corrosive material	Corrosive	173.250	173.260	Forbidden	No limit	1,2	1,2	Keep dry
	*		*			*		*		*

4. In § 172.312 the introductory text of paragraph (a) would be revised, paragraphs (d) and (e) would be added to read as follows:

§ 172.312 Liquid hazardous materials.

(a) Except as provided in this section, each package having an inside packaging containing liquid hazardous materials must be—

* * * * *

(d) Except when offered for transportation by air, limited quantities of flammable liquids packed in inside packagings of one quart or less are excepted from the orientation marking requirements of this section.

(e) When offered for transportation by air, limited quantities of flammable liquid are excepted from the orientation marking requirements of this section when packed in inside packagings of one quart or less with sufficient absorption material between the inner and outer packagings to completely absorb the liquid contents.

PART 173—SHIPPERS—GENERAL REQUIREMENTS FOR SHIPMENTS AND PACKAGING

5. In § 173.118 paragraph (b) would be amended by adding the following sentence at the end of the paragraph:

§ 173.118 Limited quantities of flammable liquids.

* * * * *

(b) * * * Notwithstanding § 172.101 of this subchapter, the net quantity limitation for flammable liquids meeting the conditions of this paragraph is one-gallon per package for carriage aboard passenger-carrying aircraft or railcar, and 55 gallons per package for carriage aboard cargo-only aircraft.

* * * * *

6. In § 173.250 a new sentence would be added at the end of paragraph (a) to read as follows:

§ 173.250 Automobiles, other self-propelled vehicles, engines or other mechanical apparatus.

(a) * * * This exception does not apply for shipment by passenger-carrying aircraft unless batteries installed in the vehicles are of the non-spillable type.

* * * * *

7. In § 173.307 paragraph (a)(2) would be revised to read as follows:

§ 173.307 Exceptions for compressed gases.

(a) * * *

(2) Tires when inflated to a pressure not greater than the rated service pressure of tire.

* * * * *

8. In § 173.615 paragraph (a) would be revised to read as follows:

§ 173.615 Carbon dioxide, solid (dry ice).

(a) Solid carbon dioxide, when offered for transportation by aircraft or water, must be packed in packaging designed and constructed to permit the release of carbon dioxide gas to prevent a build-up of pressure that could rupture the packaging. For each shipment by air exceeding five pounds per package, advance arrangements between the shipper and each carrier must be made.

* * * * *

9. § 173.906 would be revised to read as follows:

§ 173.906 Inflatable life-rafts and evacuation slides.

An inflatable life-raft, escape or evacuation slide, serviced and ready for use as a life-saving appliance aboard a vessel or aircraft, containing small quantities of hazardous materials which are required as part of the life-saving appliance, (e.g., non-flammable compressed gas packaged in cylinders in accordance with this subchapter, Class explosives that are pyrotechnic signal devices, and flammable liquids in repair kits) must be packed in a strong outside packaging.

PART 175—CARRIAGE BY AIRCRAFT

10. In § 175.10 paragraph (a)(2)(x) would be revised; paragraphs (a)(13) and (a)(14) would be added to read as follows:

§ 175.10 Exceptions.

(a) * * *

(2) * * *

(x) Items of replacement therefor, except that batteries, aerosol dispensers, and signaling devices must be packed in strong outside containers, and tires may not be inflated beyond their rated service pressure.

* * * * *

(13) Carbon dioxide, solid (dry ice) in quantities not exceeding 5 pounds per package when packed as required by § 173.615(a) of this subchapter, used as a refrigerant for the contents of the package, marked with the name of the contents being refrigerated, and also marked "CARBON DIOXIDE, SOLID" or "DRY ICE."

(14) A transport incubator unit necessary to protect life or an organ preservation unit necessary to protect human organs provided—

(i) The unit is secured in a "no smoking" area,

(ii) The compressed gas used to operate the unit is in an authorized DOT specification cylinder prescribed by this subchapter,

(iii) Each battery used in the operation of the unit is of the non-spillable type, and

(iv) The unit is accompanied by a person qualified to operate the unit.

11. § 175.25 would be added to read as follows:

§ 175.25 Informing passengers about hazardous materials.

Each aircraft operator who engages in the transportation of passengers shall display notices to passengers concerning the requirements and penalties associated with the carriage of hazardous materials in baggage aboard aircraft. Such warnings shall be prominently displayed in locations at airports where passengers obtain tickets, check baggage, and check-in prior to boarding aircraft. A sample notice meeting the requirements of this section may be obtained from FAA certificate holding offices.

12. In § 175.30 the introductory text of paragraph (a), paragraphs (a)(1), (b) and (c) would be revised to read as follows:

§ 175.30 Accepting shipments.

(a) Except as provided in this section, no person may accept a hazardous material for transportation aboard an aircraft unless the hazardous material is—

(1) Authorized, and is within the quantity limitations specified for carriage aboard aircraft according to § 172.101 of this subchapter or as otherwise specifically provided by this subchapter.

* * * * *

(b) Except as provided in paragraph (c) of this section, no person may carry any hazardous material aboard an aircraft unless, immediately prior to placing the material aboard the aircraft, the operator of the aircraft has inspected the package, or the outside container prepared in accordance with § 173.25 of this subchapter which contains the material, and has determined that it has no holes, leakage or other indication that its integrity has been compromised, and for radioactive materials that the package seal has not been broken.

(c) The requirements of paragraph (b) of this section do not apply to—

(1) An ORM-D material packed in a freight container and offered for transportation by one consignor;

(2) A hazardous material in a freight container transferred to a subsequent air carrier provided a written notification is transferred with the freight container to each subsequent air carrier indicating that the inspection required by paragraph (b) of this section has been accomplished by the originating carrier;

(3) Dry ice (carbon dioxide, solid); or

(4) Magnetized materials.

13. In § 175.33 the introductory paragraph would be revised to read as follows:

§ 175.33 Notification of pilot-in-command.

When materials subject to the provisions of this subchapter are carried in an aircraft, the operator of the aircraft shall give the pilot-in-command the following information in writing before departure:

* * * * *

14. In § 175.85 paragraph (f) would be added to read as follow:

§ 175.85 Cargo location.

* * * * *

(f) Paragraph (a) or (e) of this section does not apply to a person operating an aircraft under § 175.310 which, because of its size and configuration, makes it impossible for that person to comply.

15. In § 175.305 paragraph (a)(4) would be revised to read as follows:

§ 175.305 Self-propelled vehicles.

(a) * * *

(4) Each area or compartment in which a self-propelled vehicle in being transported in suitably ventilated to prevent the presence of fuel vapors.

* * * * *

16. In § 175.310 paragraph (c)(4)(iii) would be deleted; paragraph (e) would be revised to read as follows:

§ 175.310 Transportation of flammable liquid fuel in small, passenger-carrying aircraft.

* * * * *

(c) * * *

(4) * * *

(iii) [Deleted].

* * * * *

(e) Each area or compartment in which the fuel is loaded is suitably ventilated to prevent the presence of fuel vapors.

* * * * *

17. In § 175.320(b)(8) would be revised to read as follows:

§ 175.320 Cargo-only aircraft; only means of transportation.

* * * * *

(b) * * *

(8) When Class A explosives are carried aboard cargo-only aircraft under the provisions of this section, the

aircraft operator shall take all possible action to insure that routes over heavily populated areas are avoided commensurate with the safety of flight considerations. During the approach and landing phase, the aircraft operator shall request appropriate vectors when under radar control to avoid heavily populated areas.

* * * * *

17. § 175.705 would be added to read as follows:

§ 175.705 Special requirements for radioactive materials in cargo-only aircraft.

(a) Radioactive materials, except fissile radioactive materials, may be carried on cargo-only aircraft operated by holders of FAA Certificates and Operations Specifications issued under 14 CFR without meeting the requirements of §§ 175.75(a)(3) or 175.700(a) of this subchapter only under the following conditions.

(b) The carrier must establish and maintain a radiation protection program that will assure maximum exposure limits as follows:

(1) Exposure shall not exceed that established for employees who work in restricted areas where individuals may be exposed to radiation as prescribed in 29 CFR 1910.96. Notwithstanding these maximum exposure limits, the carrier shall make every effort to maintain exposure limits as low as reasonably achievable.

(2) For those persons not covered by 29 CFR 1910.96(d)(2), but who may be in the vicinity of the aircraft, the radiation dose rate shall not exceed 2 millirem per hour.

(c) The carrier must establish radiation control procedures to include the following:

(1) Conduct contamination surveys of the inside of the aircraft after each use for transporting radioactive materials to assure that there is no significant removable radioactive surface contamination as defined in § 173.397 of this subchapter,

(2) Assess radiation exposure on a monthly basis and submit the results of contamination surveys and the records required by 29 CFR 1910.96(n) to the FAA certificate holding office each month,

(3) Obtain written assurance from the shipper that packages of radioactive materials offered for shipment do not include fissile radioactive materials.

(d) The carrier must have available the services of a competent health physicist to supervise its radiation protection program. This person must have at least six years of professional experience in health physics. At least three of these six years must have been in applied radiation protection work, including experience in the kind of radiation protection problems likely to arise in the carrier's operation.

(e) The carrier must instruct its personnel concerning the requirements of this section and the nonapplicability of this section to the placing of radioactive materials in a transport vehicle for surface transportation.

(1) Aircraft operator personnel may not participate in the loading of any motor vehicle in a manner that would cause a violation of § 177.842 of this subchapter.

(49 U.S.C. 1804; 49 CFR 1.53, App. A to Part 1, and paragraph (a)(4) of App. A, Part 106.)

Note.—The Materials Transportation Bureau has determined that this proposed regulation will not have a major economic impact under the terms of Executive Order 12044 and DOT implementing procedures (43 FR 9582). A regulatory evaluation is available for review in the Docket.

Issued in Washington, D.C. on May 10, 1979.

Alan I. Roberts,

Associate Director for Hazardous Materials Regulation, Materials Transportation Bure

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