Research and Special Programs Administration

49 CFR Parts 171, 172, 173, 174, 175, 176, and 177

[Docket No. HM-191; Notice No. 84-4]

Classification of Detonating Cord, and Packaging of Detonators

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

ACTION: Notice of proposed rulemaking.

SUMMARY: The description and classification of "cordeau detonant fuse, class C explosive" are proposed to be changed to "detonating cord, class A explosive". The revised description is proposed in order to use a proper shipping name that is recognized internationally. Reclassification of detonating cord from class C explosive to class A explosive is considered necessary since it behaves much the same as other materials and articles in the class A explosive hazard class. The changes in description and classification are expected to result in a reduction of risks associated with the transportation of detonating cord; thereby achieving a more acceptable level of safety.

Requirements for the packaging of detonators, class A explosives are proposed to be revised to permit their shipment in an Institute of Makers of Explosives (IME) standard 22 container or compartment without first being packed in one of the DOT specification wooden or fiberboard boxes presently required. This revision is necessary if shippers and carriers are to maintain currently authorized operating procedures after December 31, 1984. This packaging option is intended to permit use of a container (or compartment) which through its design and construction achieves a level of safety that justifies its continued use as an outside packaging for detonators transported on a motor vehicle also carrying class A explosives, class B explosives, or blasting agents.

DATE: Comments must be received on or before July 17, 1984.

ADDRESSES: Comments should be addressed to the Dockets Branch, Materials Transportation Bureau, U.S. Department of Transportation, Washington, D.C. 20590. Comments should identify the docket number and be submitted, if possible, in five copies. Persons wishing to receive confirmation of receipts of their comments should include a self-addressed stamped post card. The Docket Branch is located in Room 8426 of the Nassif Bldg., 400 Seventh Street, SW., Washington, D.C. 20590. Public dockets may be reviewed between the hours of 8:30 a.m. and 5:00 p.m., Monday through Friday, except public holidays.

FOR FURTHER INFORMATION CONTACT: Thomas G. Allan, Exemptions and Regulations Termination Branch, Office of Hazardous Materials Regulation, Materials Transportation Bureau, Department of Transportation, Washington, D.C. 20590, telephone (202) 472-2726.

SUPPLEMENTARY INFORMATION:

I. BACKGROUND

A. Cordeau Detonant Fuse

1. General

Currently, cordeau detonant fuse (detonating cord) is classed as a class C explosive. This classification includes manufactured articles, like detonating cord, which contain class A explosives, or class B explosives, or both, as components but in restricted quantities. The class C explosive hazard classification of detonating cord takes into account inherent properties, such as its resistance to heat, fire, impact, shock, pressure, and stray electric, currents, which minimize the potential for detonation. The class C exposive hazard class typically addresses materials which, if initiated, will cause little or no explosive destruction beyond the limits of the outside shipping container, and which will not cause similarly packaged materials in close proximity to mass detonate.

Charging with the explosive materials (usually pentaerythrite tetranitrate (PETN) or cyclotrimethylene-trinitramine (RDX)) is currently, limited to 400 grains per linear foot. However, there are no limitations on: (1) The length of cord which may be shipped in a single package, or (2) the aggregate quantity of explosive material contained in a package. This results in potentially hazardous situations during transportation, since it is very predictable that the entire contents of a package of detonating cord will explode, if a detonation occurs inside the package. Detonation of one package of detonating cord is likely also to cause the mass explosion of similar packages in a shipment, as well as that of other class A or class B exlosives or blasting agents which may be included in a shipment.

Although detonating cord has a demonstrated history of no exploding when subjected to normal conditions of transportation, the possible consequences of its exploding are considered by MTB to be so severe as to require shippers and carriers to take additional precautions which serve to minimize risks to life and property. Reclassification of detonating cord as a class A explosive would effectively assure that regulatory requirements applicable to that hazard class are sufficient to provide an adequate level of safety in transportation.

The MTB is not alone in this assessment. Although the type of detonating cord being produced today has been transported with relative safety for nearly 50 years, a petition for rulemaking filed by the IME, the safety association of the commercial explosives industry in the United States and Canada, whose members produce a major portion of the commercial explosives materials transported in the United States, suggests that the present classification of detonating cord as a class C explosive permits an excessive amount of the high explosive ingredient to be transported under rules which are principally concerned with the fire hazard of materials rather than the potential for exploding.

2. Reaction of Detonating Cord in a Transportation Incident and Testing for Sensitivity

The MTB has information on one serious incident involving detonating cord. The incident occurred on a pier in Brooklyn, N.Y. in 1956. It resulted in the death of 10 persons, injuries to another 247 persons, and property damage estimated at $10 million. An explosion occurred within 25 minutes of the sounding of the first alarm of a raging fire in a covered pier which reportedly contained 37,000 pounds of detonating cord. The blast destroyed a 10,000 square foot section of the pier, caused major destruction of buildings and equipment in a 1000 foot radius, and caused broken glass damage in a one mile radius.

Destructive testing of detonating cord demonstrates its relative insensitivity. A major test of this material performed at the Aberdeen Proving Grounds, Aberdeen, Md. in the 1950's is said to have demonstrated that detonating cord will burn rather than detonate when subjected to the influence of fire and reasonably confined conditions. Other tests involving a 10-pound weight dropped from a height of 16 feet also

failed to detonate the material upon impact.

When detonating cord is tested against the criteria specified in § 173.53(c) it does demonstrate the characteristics of a class A explosive. The number 8 test blasting cap will consistently detonate samples of detonating cord. While it can be argued that other class C explosives will also detonate under such testing, detonating cord is probably the only material in that class which may pose a risk to detonation of other similar packages in close contact; thereby creating potentially serious threats to life and property.

3. Other Factors Influencing Reclassification

The MTB acknowledges the relatively good history of safe transportation for detonating cord over the nearly 50 years that it has been classified class C explosive. However, a reevaluation of the potential risk of this material resulted in MTB's decision to propose in this notice a change in its hazard class C to class A. Foremost, in this decision, aside from the threat of mass explosion, is the inadequacy of requirements pertaining to the communication of hazard warnings. Operational requirements pertaining to areas like loading and storage, routing, parking, and attendance and surveillance were also influential in this determination.

(a) *Communication of Hazard.* The DOT requirements pertaining to the communication of hazard warnings for detonating cord include: (1) Shipping papers which identify the proper shipping name, hazard class, and total quantity; (2) package markings which display the proper shipping name followed by the notation "Handle Carefully"; (3) labeling of the package with the EXPLOSIVE C label; and (4) placarding of transport vehicles with the "DANGEROUS" placard, under certain conditions. These warnings are intended to benefit the safety of operating personnel employed by shippers and carriers, emergency response personnel who may be called upon in the event of an incident, and the general public. There are, however, instances when the communications may be inadequate.

For one, it should be pointed out that when detonating cord is transported by a motor carrier and there is less than 1000 pounds of the material on the transport vehicle, a hazard warning placard is not required. Consequently, the required warnings are limited to the shipping paper, and packaging markings and labels, all of which may be inaccessible during a serious emergency. This may result in some persons believing that the vehicle does not contain any hazardous material. Others may approach the vehicle using standard emergency response procedures which generally do not consider the threat of mass explosion. In either event personnel would be exposed to a potential danger greater than they would, or should be required to, expect. MTB believes there should be an appropriate hazard warning on the transport vehicle to advise emergency response personnel of the risk presented by any significant quantity of detonating cord.

Secondly, since the DANGEROUS placard is a general purpose instrument to communicate basis hazard warnings, it cannot be solely relied upon to direct emergency service personnel to the most appropriate response for detonating cord. For instance, a motor vehicle carrying detonating cord and another hazardous material such as a poison B, a corrosive material, or a flammable solid, may be placarded DANGEROUS when less than 5000 pounds of either class has been loaded therein at one loading facility. The DANGEROUS placard, however, is not an appropriate hazard warning for materials which may mass explode.

(b) *Operational Requirements.* Since detonating cord is currently included in the class C explosive hazard class it is not subject to many requirements which are designed to assure a level of safety commensurate with the risk presented by class A explosives. While the long history of relatively safe transportation of detonating cord may indicate that operational controls currently applied are sufficient, MTB believes the margin of safety is simply too thin. Controls which apply to materials in the class A explosive hazard class are both reasonable and appropriate for significant quantities of detonating cord.

The following is a listing of some of the more significant requirements which would provide increased safety in transportation, which applied to detonating cord.

(1) Switching rules which prohibit the free movement of cars, and requirements for a buffer car when in a rail yard (§ 174.83).

(2) Placement rules for cars in rail yards and sidings (§ 174.85).

(3) Train placement rules (§§ 174.88 and 174.90).

(4) General requirements which prohibit transportation aboard aircraft (§ 172.101).

(5) Detailed requirements for loading and unloading class A explosives on vessels (§ 176.105).

(6) Attendance and surveillance of motor vehicles. (§ 397.5).

(7) Selection of routes (§§ 174.105, 175.320(b)(8), and 397.9).

4. Miscellaneous Proposals

In its petition for rulemaking, the IME suggests that shippers of detonating cord be permitted an exception to classify the material class C explosive whenever the net total explosive weight of detonating cord on a vehicle is less than fifty pounds. MTB believes an adequate level of safety in transportation would be realized when a small quantity of detonating cord is transported under rules applicable to class C explosives. However, the IME petition is considered unnecessarily broad. Consequently, the proposed rule puts certain limitations on the material, carriers, and modes of transportation to which the class C explosives classification would apply.

One variation from the IME petition is to use the gross weight of the package containing detonating cord rather than the net explosive weight. This is being done primarily after considering the release of energy that is possible with 50 pounds of a material like PETN, and to establish a practical basis for determination of compliance. To further provide for an acceptable level of safety, the explosive content of detonating cord shipped under the exception would be limited to 100 grains per linear foot.

Another variation from the IME petition is MTB's decision to limit the exception to shipments being transported by: (1) motor vehicles which are operated by private carriers, and (2) private vessels. All other carriers transporting detonating cord would be required to handle it as a class A explosive.

The IME petition also recommends that detonating cord be restricted from transportation with detonators, with certain exceptions. Specifically, the petition states:

(a) "Explosive A" detonating cord should be restricted from transportation with "Explosive C Detonators" except when the IME 22 Box is utilized.

(b) "Explosive C" detonating cord and "Explosive C Detonators" may be transported without restriction.

(c) Both "Explosive A" and "Explosive C" detonating cord should be restricted from transportation with "Explosive A Detonators."

Except for article (b), MTB agrees that the suggested restrictions are necessary. The presence of any detonators and detonating cord on the same motor vehicle is considered to be unacceptable if the IME Standard 22 container is not used. Appropriate changes are, therefore, proposed in the loading and

storage charts to §§ 174.81, 176.83 and 177.848.

B. Detonators

1. General

Beginning January 1, 1985, all detonators and detonating primers, including those approved prior to January 1, 1980, must be prepared for shipment and transported in accordance with amendments to the Hazardous Materials Regulations (HMR) adopted under Docket HM-161 (44 FR 70721, December 10, 1979). One of the more significant changes adopted under that Docket is the criteria used in determining the hazard class of detonators and detonating primers.

Currently, certain blasting caps (detonators) approved for transportation prior to January 1, 1980 may be classed class A explosive or class C explosive depending on the actual number of devices. If there are 1000 or less, the hazard class is class C explosive. If there are more than 1000, the hazard class is class A explosive. It was determined in HM-161 that classification based on the number of devices is not an appropriate method. The final rule adopted in that Docket, therefore, requires that detonators be evaluated on their ability to undergo limited propagation. If detonators undergo limited propagation in the shipping package, the class is class C explosive. Limited propagation means that if one detonator near the center of the shipping package is exploded, the aggregate weight of explosives, excluding ignition and delay charges, in this and all additional detonators in the outside packaging that explode may not exceed 25 grams.

Detonators which mass detonate in the shipping package may not be classed as a class C explosive. Mass detonate means that more than 90 percent of the devices tested in a package explode practically simultaneously. This method of classification is considered more acceptable from the point of view of safety in transportation.

As shippers and carriers begin to comply voluntarily with the revised regulations prior to the January 1, 1985 mandatory compliance date, they realize that the long-standing authorization for transporting certain blasting caps with high explosives on the same motor vehicle is no longer permitted. This is a consequence of the IME Standard 22 being specifically addressed to the transportation of class C detonators. At the present time 1000 or less detonators may be carried in an IME Standard 22 container to compartment without an outside DOT specification wooden or fiberboard box. This currently permitted under terms of exemption numbers E-5243 and E-6984. However, the exemptions do not include those detonators which are electric blasting caps that are classed class A explosive.

On January 14, 1983, the IME filed a petition for rulemaking to amend the HMR in order to preserve an operation which has a demonstrated record of safety in transportation. In essence, the petition seeks to:

- Continue use of the IME No. 22 container or compartment as a method of transporting detonators with class A or B explosives in the same manner as has been in use since June 30, 1973.
- Apply that same method to the combined transportation of detonators and blasting agents.
- Make certain editorial corrections to the regulations.

2. Performance of IME Standard 22 Container in Tests and Accidents

Fire tests with the IME Standard 22 container demonstrate conclusively that the package remains intact following the detonation of many blasting caps.

In the 12 years since the IME Standard 22 container or compartment was first used, there are only three reported incidents that involve this container. In these three cases, each of which involved total destruction of the motor vehicle, it is believed that the IME Standard 22 container provided the level of protection for which it is designated. A brief description of each incident follows:

On April 5, 1979, the driver of a motor vehicle that was loaded with explosives and traveling on Route 52 in Keystone, West Virginia noticed a fire in the rear of the truck bed. He pulled the truck over to the side of the road and tried to extinguish the fire. When the driver realized the fire was out of control, he began warning people in the surrounding area. An explosion occurred shortly thereafter. The truck was carrying 1,000 pounds of dynamite (high explosive, class A explosive), and 500 blasting caps (class C explosive) in an IME Standard 22 container. A number of unexploded blasting caps, unburnt instruction sheets and pieces of the fiberboard box which held the caps were found in the area of the blast. It is believed that the initial detonation occurred in the dynamite outside the IME Standard 22 container.

On January 29, 1981, the driver of a motor vehicle that was loaded with explosives and traveling on Highway 53 near Shelbyville, Kentucky lost control of the vehicle and it overturned. The gas tank ruptured and the vehicle began to burn. The uninjured driver was able to get out of the vehicle and stop traffic. An explosion occurred shortly thereafter. The truck was carrying 8,500 pounds of ammonium nitrate-fuel oil mixture (blasting agent), seven pounds of explosive boosters (class A explosive), and 2,000 electric blasting caps (class A explosive) in an IME Standard 22 container. A number of unexploded blasting caps were found in the area of the blast. It is believed that the initial detonation occurred in one of the materials outside the IME Standard 22 container.

On June 1, 1981, the driver of a motor vehicle that was loaded with explosives and traveling on Highway 211 north of Cheyenne, Wyoming noticed a fire in the rear of the vehicle. He stopped the vehicle and went for help. By the time emergency personnel arrived the vehicle was engulfed with flames. Because the vehicle was loaded with 1,950 pounds of a high explosive (class A explosive) and 78 electric blasting caps, the area was secured and the fire was allowed to burn itself out. There was no explosion. As a result of the fire, the vehicle and its load were completely destroyed. However, the blasting caps, which were in an IME 22 container did not mass detonate. That IME 22 container, though, fire damaged, was intact following the incident and did provide the protection for which it was designed.

3. Conclusion

Based on its assessment of the IME Standard 22 container, and the history of safe transportation under exemption E-6984, MTB is satisfied that an adequate level of safety would be maintained if the HMR were amended to permit certain blasting caps, class A explosives, to be transported in an IME Standard 22 container on the same motor vehicle with other high explosives. Suggested actions contained in the IME petition for rulemaking are proposed in this notice, though not in the same format.

II. REVIEW BY SECTIONS

General References to IME Standard 22 throughout the HMR address not only the manner of design and construction of the container or compartment but the permitted uses and requirements specified in that publication as well.

Section 171.7 would be revised to incorporate the most recent edition of the IME Standard 22. A copy is available for review in the docket file for this rulemaking action and is filed as part of the original document.

Section 172.101 would be amended by removing the proper shipping name

"cordeau detonant fuse" and adding the proper shipping name "detonating cord."

Section 173.53 would be amended by adding a definition of detonating cord at paragraph (w).

Section 173.66 Paragraph (c) would be revised to permit the carriage of certain detonators (blasting caps) by motor vehicle without first being packed in an outside specification wooden or fiberboard box. Instead, the detonators would have to be transported in an IME Standard 22 container or compartment. The total number of detonators would be limited to 1,000 per motor vehicle. An additional requirement is proposed to prohibit materials from being loaded on top of the IME container or immediately outside the door of an IME compartment so that venting may occur as intended by the design.

Paragraph (e) would be amended by adding subparagraph (3) to permit use of an IME Standard 22 container or compartment as an alternative to the specification wooden and fiberboard boxes ordinarily required for class A detonators which conform to requirements pertaining to their design and limited explosive content.

Section 173.81 would be added to specify packaging requirements for detonating cord. The proposed packaging requirements are similar to those now specified in § 173.104 for cordeau detonant fuse.

Paragraph (c) would permit the classification of 50 pounds or less of detonating cord not exceeding 100 grains of explosive per linear foot as a class C explosive. That classification would be permitted when carriage is performed by a private carrier only.

It is recognized that paragraph (c), as proposed, is more restrictive than the rulechange petitioned by the IME. However, this is in keeping with MTB's desire to limit the population at risk to the smallest possible number, and then further limiting that segment to those persons (i.e., private carrier personnel) who are most aware of the hazards associated with the material, and who are trained to handle such a material. Interested persons who believe this proposal is too restrictive should explain fully in their comments why a less restrictive rule should be adopted. For example, it has been suggested that common carrier service may be essential to small businesses in delivering detonating cord in small lots to their customers. A number of common carriers specialize in transporting explosives while others have little or no experience in transporting explosives other than class C explosives. What distinction, if any, can MTB make by rule that would limit carriage to carriers qualified to handle explosives that have the potential to mass detonate? Data, such as a safety analysis, relevant shipping and accident experience, and cost estimates which may be evaluated by MTB should accompany comments filed in response to this proposed restriction.

Section 173.100(d) would be removed and reserved since detonating cord is proposed to be described in § 173.81.

Section 173.103 would be amended by adding a requirement in paragraph (c)(4) that each inside packaging containing detonators, class C explosives, must be marked "class C explosives". This marking is considered necessary since use of the IME Standard 22 container or compartment, and paragraph (c)(2), otherwise permit their transportation without first being packed in a specification wooden or fiberboard box. Also, since an IME Standard 22 container or compartment that is an integral part of the vehicle body, or is permanently attached to a motor vehicle, is not required to be marked or labeled, there is no communication of this hazard, except through the shipping paper.

Section 173.104 would be amended by removing references to the shipping description cordeau detonant fuse.

Section 174.81 would be amended by adding detonating cord to the list of materials identified in row b of the table (e.g. high explosives and propellant explosives, class A), and by removing cordeau detonant fuse from row 8.

The letter "X" would be added at the intersection of rows d and 10 to prohibit the rail transportation of detonators and blasting agents on the same transport vehicle.

Row 7a, headed "Detonators, detonating primers", would be added to the group of class C explosives. These articles would be prohibited from transportation with other explosives, blasting agents and poisonous gases; the same as class A detonators and detonating primers.

The heading of row 10 would be revised to include ammonium nitrate-fuel oil mixtures.

Footnote 1 and references to it within the table would be removed since class C detonators and detonating primers are proposed to be separately identified in row 7a.

Reference to footnote 2 in row 13 would be added at row e since its applicability is also to ammunition for cannon.

Footnote 5 would be revised to remove references to blasting agents and ammonium nitrate-fuel oil mixtures. These materials were included with oxidizers (row 12) prior to establishment of the blasting agents hazard class. However, as they are now included with blasting agents in row 10 the footnote's reference should be limited to ammonium nitrate, fertilizer grade.

Section 175.320 would be amended by changing a description in the table in paragraph (a) from cordeau detonant fuse to detonating cord.

Section 176.83 would be amended by adding detonating cord, class A explosive to the list of materials identified in row 2 of the table (e.g. high explosives and propellant explosives class A), and by removing cordeau detonant fuse from row 8.

Detonators and detonating primers (class C explosives) would be added to row 14a. These articles would be prohibited from loading and stowage with other explosives and blasting agents; the same as class A detonators and detonating primers.

All detonators would be prohibited from loading and stowage with blasting agents.

Detonating fuses would be prohibited from loading and stowage with blasting agents.

Detonating cord would be prohibited from loading and stowage with initiating explosives, all detonators and detonating primers, detonating fuses, and special fireworks and railway torpedoes.

Section 177.835(g) would be revised to add blasting agents and detonating cord, Class C explosive as other materials that are prohibited from being transported on the same motor vehicle with detonators or detonating primers. The exceptions in paragraphs (g)(1) and (g)(2) would, however, permit blasting agents to be transported on the same motor vehicle with detonators under certain conditions.

Paragraph (g) would be revised editorially to clarify that detonators may be transported on the same motor vehicle with detonating primers.

Section 177.848 would be amended by adding detonating cord to the list of material identified in row b of the table (e.g. high explosives and propellant explosives, class A), and by removing cordeau detonant fuse from row 8.

Row 7a, headed "Detonators, detonating primers" would be added to the group of class C explosives. These articles would be prohibited from transportation with other explosives, blasting agents and poisonous gases; the same as class A detonators and detonating primers. An exception is made for shipments transported under provisions of § 177.835.

Row 8a, headed "Detonating cord", would be added to the group of class C

explosives. Detonating cord would be prohibited from transportation with initiating explosives, all detonators and detonating primers, detonating fuzes, and special fireworks and railway torpedoes. An exception is made for shipments transported under provisions of §§ 173.81(c) or 177.835.

The heading of row 10 would be revised to include ammonium nitrate-fuel oil mixtures.

Reference to footnote 1 at coordinates d–9, d–11, d–12, d–13 and d–14 would be removed since its applicability is to class C detonators.

All detonators would be prohibited from transportation with blasting agents. An exception is made for shipments transported under provisions of § 177.835.

Footnote 1 would be revised to apply to class A as well as class C detonators.

Reference to footnote 2 in row 13 would be changed from row d to row e since its applicability is to ammunition for cannon and not detonators.

Footnote 5 would be revised to remove references to blasting agents and ammonium nitrate-fuel oil mixtures. These materials were included with oxidizers (row 12) prior to establishment of the blasting agents hazard class. However, as they are now included with blasting agents in row 10 the footnote's reference should be limited to ammonium nitrate, fertilizer grade.

III. ADMINISTRATIVE NOTICES

A. Executive Order 12291

The MTB had determined that the effect of this regulatory proposal would not meet the criteria specified in § 1(b) of Executive Order 12291 and the proposed rule is, therefore, not a major rule. This is not a significant rule under DOT regulatory procedures (44 FR 11034) and does not require a Regulatory Impact Analysis. A preliminary regulatory evaluation is available for review in the Docket at the address shown above.

B. Impact on Small Entities

Based on limited information concerning size and nature of entities likely to be affected, I certify that this proposal will not, if promulgated, have a significant economic impact on a substantial number of small entities. Small entities potentially affected include manufacturers and distributors of explosives, carriers engaged in the transportation of explosives, and various users of explosives, such as farmers, and mining, construction, and well drilling companies. The total number of these small entities is unknown. The economic impact on these small entities will be nominal. However, this certification is subject to modification as a result of a review of comments received in response to proposed § 173.81(c).

C. List of Subjects in

49 CFR 171

Explosives, Hazardous materials transportation.

49 CFR 172

Explosives, Hazardous materials transportation.

49 CFR 173

Explosives, Packaging and containers.

49 CFR 174

Explosives, Railroad safety.

49 CFR 175

Explosives, Air carriers.

49 CFR 176

Explosives, Maritime carriers.

49 CFR 177

Explosives, Motor carriers.

In consideration of the foregoing Parts 171–177 of Title 49, Code of Federal Regulations would be amended as follows:

PART 171—GENERAL INFORMATION, REGULATIONS, AND DEFINITIONS

1. In § 171.7, paragraph (d)(9) would be revised to read as follows:

§ 171.7 Matter incorporated by reference.

* * * * *

(d) * * *

(9) IME Safety Library Publication No. 22 (IME Standard 22) is titled, "Recommendations for the Safe Transportation of Detonators in a Vehicle With Certain Other Explosive Materials." Revised September 23, 1982.

* * * * *

PART 172—HAZARDOUS MATERIALS TABLES AND HAZARDOUS MATERIALS COMMUNICATIONS REGULATIONS

2. In § 172.101, the Hazardous Materials Table would be amended by removing and adding the following entries:

§ 172.101 Purpose and use of hazardous materials table.

§ 172.101 Hazardous Materials Table.

EAW	Hazardous materials descriptions and proper shipping names	Hazard class	Identification number	Label(s) required (if not excepted)	Packaging		Maximum net quantity in one package		Water shipments		
					Exceptions	Specific requirements	Passenger carrying aircraft or railcar	Cargo aircraft only	Cargo vessel	Passenger vessel	Other requirements
(1)	(2)	(3)	3(a)	(4)	5(a)	5(b)	6(a)	6(b)	7(a)	7(b)	7(c)
	REMOVE										
	Cordeau detonant fuse	Class C explosive		Explosive C	None	173.104	50 pounds	300 pounds	1, 2	1, 2	
	ADD										
	Cord, detonating flexible	Class A explosive		Explosive A	None	173.81	Forbidden	Forbidden	6	5	

PART 173—SHIPPERS—GENERAL REQUIREMENTS FOR SHIPMENTS AND PACKAGINGS

3. In § 173.53, paragraph (w) would be added to read as follows:

§ 173.53 Definition of class A explosives.

* * * * *

(w) Detonating cord is a device consisting of a core of pentaerythrite tetranitrate, cyclotrimethylene-trinitramine or similar explosive overspun with tapes, yarns and plastics or waterproofing compounds without wire countering.

* * * * *

4. In § 173.66, paragraph (c)(2) would be redesignated (c)(3), and paragraphs

(c)(2) and (e)(3) would be added to read as follows:

§ 173.66 Detonators.

* * * * *

(c) * * *

(2) Devices that are electric blasting caps with leg wires 4 feet long or longer, delay connectors in plastic sheaths, or blasting caps with empty plastic tubing 12 feet long or longer, and contain no more than 1 gram of explosive (excluding ignition and delay charges) may be offered for transportation and transported in an IME Standard 22 container or compartment without the outside packaging specified in paragraph (e)(1) or (e)(2) of this section if—

(i) The devices are packed as specified in paragraph (a)(1) and (a)(3)(i) of this section;

(ii) There are no more than 1000 detonators in the IME Standard 22 container or compartment;

(iii) No material is loaded on top of the IME Standarad 22 container, or no material is loaded against the outside of the door of the IME Standard 22 compartment.

* * * * *

(e) * * *

(3) IME Standard 22 container or compartment when the detonators conform with conditions and limitations specified in paragraph (c)(2) of this section.

* * * * *

5. Section 173.81 would be added to read as follows:

§ 173.81 Detonating cord.

(a) Detonating cord must be packed in wooden or fiberboard boxes.

(b) Each outside container must be plainly marked "DETONATING CORD HANDLE CAREFULLY".

(c) Detonating cord having an explosive content not exceeding 100 grains per linear foot may be classes class C explosive and transported by highway or vessel under rules applicable to the class C explosive hazard class if—

(1) The material is packed as prescribed in paragraphs (a) and (b) of this section;

(2) The material is described on package markings, shipping papers and dangerous cargo minifests with the basic description "cord, detonating *flexible*, class C explosive";

(3) The material is labeled "class C explosive";

(4) Transportation is performed by a private carrier;

(5) The gross weight of all packages of detonating cord exceeds neither—

(i) 50 pounds per motor vehicle.

(ii) 50 pounds per offshore down hole tool pallet, nor

(iii) 50 pounds per cargo compartment of a vessel; and

(6) A minimum horizontal separation distance of 10 feet is maintained between each motor vehicle and pallet that is loaded with detonating cord and stowed "on deck" aboard a vessel.

§ 173.100 [Amended]

6. In § 173.100, paragraph (d) would be removed and reserved.

§ 173.103 [Amended]

7. In § 173.103, paragraph (c)(2) would be amended by removing the word "and" at the end of the clause; paragraph (c)(3) would be amended by removing the period and inserting, in its place, a semicolon followed by the word "and"; and paragraph (c)(4) and notes 1 and 2 to paragraph (c) would be added to read as follows:

§ 173.103 Detonators, class C explosives, and detonating primers, class C explosives.

* * * * *

(c) * * *

(4) Each inside packaging must be marked "class C explosives".

Note 1: The "class C explosives" marking is the shippers certification that the contents of the IME Standard 22 container or compartment are class C explosives.

Note 2: Any detonator packed in an inside packaging that is not marked "class C explosives" must be offered for transportation as a class A explosive.

* * * * *

8. In § 173.104, the section heading and paragraphs (a), (b), and (c) would be amended by removing the words "Cordeau detonant fuse" and "CORDEAU DETONANT FUSE-HANDLE CAREFULLY", as appropriate.

PART 174—CARRIAGE BY RAIL

9. In § 174.81, the table would be amended by: revising the heading of row b to read "High explosives, propellant explosives or detonating cord"; adding a row 7a headed "Detonators, detonating primers"; removing the words "Cordeau detonant fuze" from the heading of row 8; revising the heading of row 10 to read " Blasting agents, n.o.s., or ammonium nitrate-fuel oil mixture; blasting agent label"; adding the letter "X" at coordinates d–10, 7a–b, 7a–c, 7a–e, 7a–f, 7a–3, 7a–9, 7a–10, and 7a–15; removing the superscript "1" from the letter "X" at coordinates d–b, d–3, d–9, d–11, d–12, d–13, and d–14; removing and reserving footnote 1; adding the superscript "2" to the letter "X" at coordinate e–13; and revising footnote 5 to read as follows:

§ 174.81 Segregation and separation requirements for hazardous materials in rail cars.

* * * * *

(f) * * *

1. [Reserved]

* * * * *

5. Does not include ammonium nitrate, fertilizer which may be loaded, transported, or stored with high explosives, or with detonators containing no more than 1 gram of explosive each, excluding ignition and delay charges.

* * * * *

PART 175—CARRIAGE BY AIRCRAFT

§ 175.320 [Amended]

10. In § 175.320, the table in paragraph (a) would be amended by removing the words "Cordeau detonant fuse" and inserting, in their place, the words, "Detonating cord".

PART 176—CARRIAGE BY VESSEL

§ 176.83 [Amended]

11. In § 176.83, Table I would be amended by: revising the heading of row 2 to read "High explosives, propellant explosives or detonating cord"; adding a row 14a headed "Detonators, detonating primers"; removing the words "Cordeau detonant fuze" from row 15; adding a row 15a headed "Detonating cord"; adding the letter "X" at coordinates 4–17 and 4–18; adding the letter "X" at coordinates 7–17 and 7–18; adding the letter "X" at coordinates 14a–2, 14a–3, 14a–5, 14a–6, 14a–10, 14a–15a; 14a–17 and 14a–18; and adding the letter "X" at coordinates 15a–3, 15a–4, 15a–7 and 15a–10.

PART 177—CARRIAGE BY PUBLIC HIGHWAY

12. In § 177.835, the introductory text of paragraph (g) would be revised to read as follows:

§ 177.835 Explosives.

* * * * *

(g) No detonating primer may be transported on the same motor vehicle with any class A or class B explosive (except other detonating primers or detonators), blasting agent or detonating cord, class C explosive. No detonator may be transported on the same motor vehicle with any class A or class B explosive (except other detonators or detonating primers), blasting agent or detonating cord, class C explosives unless—

* * * * *

13. In § 177.848, the Loading and Storage Chart of Hazardous Materials would be amended by: revising the

heading of row b to read "High explosives, propellant explosives, or detonating cord"; adding a row 7a headed "Detonators, detonating primers"; removing the words "Cordeau detonant fuze" from the heading of row 8; adding a row 8a headed "Detonating cord"; revising the heading of row 10 to read "Blasting agents, n.o.s., or ammonium nitrate-fuel oil mixture; blasting agent label"; adding the notation "X" at coordinates 7a–b, 7a–c, 7a–e, 7a–f, 7a–3, 7a–8a and 7a–10, and at coordinates d–8a and d–10; removing the superscript "1" or "2", as appropriate, from the letter "X" at coordinates d–9, d–11, d–12, d–13 and d–14; adding the superscript "1" to the letter "X" at coordinates d–c, d–e and d–f; adding the letter "X" at coordinates 8a–c, 8a–g and 8a–3; adding the superscript "2" to the letter "X" at coordinate e–13; and revising footnotes 1 and 5 to read as follows:

§ 177.848 Loading and storage chart of hazardous materials.

* * * * *

(f) * * *

1. Except as prescribed in §§ 173.81(c) or 177.835(g), loading and transportation of detonators or detonating primers with materials named in rows b, c, e, f, 3, 8a or 10 is prohibited.

* * * * *

5. Does not include ammonium nitrate, fertilizer grade, which may be loaded, transported or stored with high explosives, or with detonators containing no more than 1 gram of explosive each, excluding ignition and delay charges.

* * * * *

(49 U.S.C. 1803, 1804, 1808; 49 CFR 1.53, App. A to Part 1 and paragraph (a)(3) of App. A to Part 106)

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