

DEPARTMENT OF TRANSPORTATION**Research and Special Programs
Administration****49 CFR Parts 171, 172, 173, 174, 175,
176 and 177****[Docket No. HM-191; Amdt. Nos. 171-82,
172-95, 173-182, 174-46, 175-33, 176-20,
177-64]****Classification of Detonating Cord, and
Packaging of Detonators****AGENCY:** Materials Transportation
Bureau (MTB), Research and Special
Programs Administration, DOT.**ACTION:** Final rule.

SUMMARY: The description and classification of "cordeau detonant fuse, class C explosive" is changed to "detonating cord, class A explosive" and "detonating cord, class C explosive". The revised description is adopted in order to use proper shipping names that are 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. These changes in description and classification are intended to reduce 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 revised to permit the shipment of detonators in an Institute of Makers of Explosives (IME) standard 22 container or compartment without their first being packed in one of the DOT specification wooden or fiberboard boxes currently required. This revision is necessary for

shippers and carriers 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.

EFFECTIVE DATE: October 1, 1985. However, compliance with the regulations as amended herein is authorized as of January 1, 1985.

FOR FURTHER INFORMATION CONTACT: Thomas G. Allan, Office of Hazardous Materials Regulation, Materials Transportation Bureau, Department of Transportation, Washington, D.C. 20590. Telephone (202) 426-2075.

SUPPLEMENTARY INFORMATION:

I. Background

On May 17, 1984, MTB published a notice of proposed rulemaking (Notice 84-4) in the *Federal Register* (49 FR 20873). That notice proposed the reclassification of cordeau detonant fuse from class C explosive to class A explosive, and a change in its proper shipping name to "cord, detonating flexible". In addition, the notice proposed changes to permit carriage of detonators, class A explosive, within an IME standard 22 container under rules which, until now, applied to detonators, class C explosive, only. This final rule contains amendments to the Hazardous Materials Regulations (HMR) based on proposals in Notice 84-4 and the merits of comments filed in response to that notice. Interested persons should refer to Notice 84-4 for detailed background information.

In response to Notice 84-4, MTB received 109 written comments. The respondents represent a variety of interests. There are 97 users of explosives, of which 66 are engaged in the oil well service industry. Seven commenters are dealers of explosive materials and two commenters are manufacturers of explosives. Comments were also received from the IME, the U.S. Army and the International Fire Service Training Association (IFSTA).

Each commenter accepted (though some did so reluctantly) the proposal to reclassify large quantities of detonating cord as a class A explosive. In addition, each commenter, with the exception of IFSTA, favored the proposed classification for small quantities of detonating cord as a class C explosive. However, each commenter, save one, opposed the proposal that would restrict

the transportation of detonating cord classed as a class C explosive to private carriage.

With respect to that part of the proposal addressing the packaging of detonators, the commenters generally favored the proposed rules. However, three commenters requested that detonators packaged for transportation prior to January 1, 1985, be authorized for shipment in accordance with the regulations in effect on October 31, 1979. That authorization is requested to extend through December 31, 1985.

A discussion of significant comments and amendments adopted in this final rule follows.

A. Detonating Cord

1. **Classification.** A majority of commenters took exception to MTB's assumption that most packages of detonating cord will not behave in a manner characteristic of class C explosives. Several commenters suggested MTB develop evidence which supports such speculation before making extensive changes in the regulation of detonating cord.

While MTB does not have hard data to support this reclassification, it notes the petition initiating this rulemaking docket was filed by the IME whose member companies produce a major portion of the commercial explosives materials transported in the United States. Their expertise in this area is unquestioned and it is irresponsible for MTB to ignore or unduly delay that request for reclassification.

Though some commenters do not agree that detonating cord is a class A explosive, they reluctantly accept that classification. However, those commenters qualified their acceptance of the class A explosive hazard class on the condition that transportation of relatively small quantities of detonating cord may continue as class C explosives. This is of particular concern to wireline operators in the oil well service industry who recommended an increase in the proposed maximum permitted gross weight from 50 pounds to 100 pounds.

Upon reconsideration of the limited risk posed by relatively small quantities of detonating cord, and in response to comments received, MTB is raising the maximum permitted gross weight of packages of detonating cord that may be offered for transportation or transported as class C explosives to 100 pounds.

Other commenters believe the classification of detonating cord must be determined on the basis of its performance under test conditions, and not by the assignment of a weight limit. The following comments from the

Department of Army are very specific in that regard.

As pointed out in 49 CFR the most important consideration in determining DOT class is the risk posed to detonation of other similar packages in close contact, if one of the packages is detonated. The Army is presently testing some current packages of detonating cord, in accordance with the requirements of TB 700-2/NAVSEAINST 8020.8/TO 11A-1-47/DLAR 8220.1, to determine their proper DOT class. It is possible that these tests will determine that our current detonating cord should be DOT class B or C. In addition, new packages containing less cord per package have been proposed and will be tested when design is complete. It is our design intention that these new packages will not pose an explosive propagation hazard and will qualify as DOT class C.

DOT classes should be based on the actual hazard that each package (defined as packaging materials and contents per 49 CFR 171.8) poses. Different quantities of the same item packaged in different ways may present different hazards. In the case of detonating cord, a DOT class A assignment could be presumed and assignment of DOT class B or class C specifically permitted for DOD when test results justify such assignment to specific packaged configurations. There is ample precedent for the assignment of different DOT classes based on different hazards for similar items.

MTB is very much interested in the results of this proposed testing and encourages the design of packages that do not pose an explosive propagation hazard. The development of such packages is beneficial to safety in transportation. In addition, shippers and consignees of detonating cord may also benefit by the reduced transportation charges normally assessed for class C explosives, as compared to transportation charges for a comparable quantity of class A explosives. The United Nations (U.N.) Recommendations currently provide for classification of detonating cord in class 1.1D and 1.4D (essentially equivalent to DOT's class A and C explosive hazard classes, respectively) and the design of packages that do not mass explode allows MTB to maintain a consistency with the U.N.

Exception is taken to DOD's suggestion that some packages of detonating cord may be classified as a class B explosive. The class B explosive hazard class is peculiar to materials which, in general, function by rapid combustion rather than detonation. The explosive compounds used in detonating cord will detonate. Thus, the class B explosive hazard class is not appropriate.

Considering some shippers are confident they may design packages of

detonating cord that react to adverse environments in a manner characteristic of the class C explosive hazard class, this final rule adopts a new entry in the Hazardous Materials Table for "Cord, detonating *flexible*, class C explosive". The safety benefits and economic incentives derived from having a set of regulations that permits the class C explosive hazard class as a possible alternative to the class A explosive hazard class will, hopefully, stimulate shippers to further reduce threats to health and property.

2. *Modal restrictions.* MTB proposed that detonating cord not exceeding 100 grains per linear foot, and not exceeding 50 pounds may be transported only by a private carrier, operating in the highway or water mode, under requirements typically applicable to the class C explosive hazard class. In all other cases, the notice proposed that detonating cord shall be offered for transportation and transported as a class A explosive. There was much resistance to that proposal.

For the most part, opposition came from shippers and users of detonating cord. One large shipper states "(b)illions of feet of detonating cord have been transported as a class C explosive by for-hire carriers in the last fifty years and, to our knowledge, there have been no transportation incidents that suggest that the transportation of detonating cord, class C explosive, should be limited to private motor carriers." The commenter went on to recommend " * * * the maximum quantity offered for shipment as a class C explosive be changed to 100 lbs. gross weight. This is consistent with the original IME proposal since, by weight, the explosive content of packaged detonating cord is slightly less than 50 percent." This call for a 100 pound gross weight limitation was echoed by 98 commenters. A single commenter suggested "(a) more realistic approach would be to allow 250 lbs. of detonating cord to be shipped class C by common carrier."

The IME reiterated this good safety record for detonating cord, but then provided MTB with information on a previously unreported transportation incident near Colstrip, Montana in which 100,000 feet of cord detonated during a fire in the cargo compartment of a motor vehicle operated by a private carrier. That incident occurred in 1974. It resulted in a total loss of the vehicle and contents, but there were no deaths or injuries.

Each of the commenters from the oil and gas well perforating industry complained of the difficulty and expense they might incur if suppliers are unable to ship detonating cord as a class C

explosive via common carrier. Tariff restrictions imposed by common carriers are claimed to make the cost of transportation of small quantities of class A explosives prohibitive. Also, the small user is frequently several hundred miles distant from the supplier and the costs associated with private carriage thereby become prohibitive.

One perforating company with operations throughout the world filed the following comments:

Many of these wells are located in parts of the world where storing large quantities of explosives is very difficult and sometimes impossible. It is imperative, therefore, that these locations have the ability to transport small quantities of detonating cord by air. Approximately 90 percent of all our explosives shipments are sent by cargo or passenger aircraft.

The present proposal to classify detonating cord as a class A explosive would prohibit us from transporting it on cargo and passenger aircraft. This proposal, therefore, would greatly impact the well service industry's ability to provide timely service to the oil industry.

The commenters have shipping statistics which show detonating cord may be safely transported by private and for-hire carriers. However, they do not go on to explain fully why a rule less restrictive than proposed should be adopted for each class of for-hire carriers. In the absence of data which shows conclusively that small quantities of detonating cord, when detonated, will not significantly affect transportation safety, MTB believes it must restrict transportation of detonating cord to modes limiting the population at risk to the smallest possible number and, to the extent possible, to those persons who regularly accept the risks inherent with the transportation of hazardous materials.

In consideration of comments received, MTB is adopting amendments which are less restrictive than proposed. Specifically, the gross weight of packages containing detonating cord, class A explosive which may be offered for transportation or transported as class C explosives is raised to 100 pounds. In addition, carriage is permitted via each mode of transportation. However, detonating cord, offered for transportation or transported under provisions of § 173.81(c) may not be carried aboard a passenger-carrying aircraft, except for a passenger-carrying aircraft used during that flight to serve a remote site, like an off-shore drilling unit, by shuttling operating personnel and carrying their necessary supplies and equipment.

3. *Miscellaneous comments.* Several commenters addressed problems

associated with the transportation by vessel of class A explosives to locations such as Alaska, Hawaii and Guam. They correctly indicate that class A explosives are prohibited from many ports, and ports which do handle class A explosives impose charges which greatly exceed the charges currently in effect for class C detonating cord. The problems addressed by these commenters are significantly reduced by MTB's increasing the maximum permitted weight from 50 pounds to 100 pounds, and permitting carriage by common carriers.

A commenter in the oil well service industry complained the reclassification of detonating cord, as a class A explosive, would adversely affect operations which require use of jet perforating guns. The commenter states:

Many oil field applications of detonating cord also involve the use of other class C materials. For example, oil and gas wells are almost universally completed using shaped charges conveyed in a hollow steel cylinder called a perforating gun. These charges are normally ballistically linked using a length of detonating cord. As both materials are currently classified as class C explosives, they can be assembled at a central location and transported together to remote well locations simply and economically. Reclassification of detonating cord as a class A explosive would require separate transportation of these materials with assembly of the perforating gun at the remote wellsite. This would thus substantially increase the cost of providing this service while compounding operational difficulties.

The commenter is mistaken. Since the jet perforating gun is a separately identified explosive article, the shipper must offer it for transportation and transport it under rules applicable to the completed article, and not on the bases of regulations applicable to each of its components. The HMR currently provide for classification of jet perforating guns as a class A explosive or a class C explosive, depending on the total amount of explosive contents of the guns being transported per motor vehicle. Thus, this rule does not affect the classification of a perforating gun.

B. Detonators.

1. *Packaging in IME Standard 22 Container.* Several commenters took exception to current and proposed requirements associated with the transportation of detonators in an IME 22 container. One comment from the Department of Army reads as follows:

The proposal to amend 49 CFR 173.103 to require inside containers of DOT class C detonators to be so marked in order to permit use of the IME Standard 22 container creates an untenable situation because 173.103 and

173.66 combine to base DOT class on the efficiency of the total packaged configuration, including inside, intermediate, and outside packagings. If DOT class C is determined, based on inside, intermediate, and outside packaging, and the intermediate and outside packaging is then removed, there is doubt about the propriety of marking "class C explosive" on what has thereby become a DOT class A package. We would recommend that some other administrative method be selected to achieve the intended result since use of methods such as that proposed are usually reasons for DOT to impose sanctions on shippers.

Intermediate and outside packagings do influence the classification of detonators. However, as indicated in Notice 84-4, more than 12 years experience with the IME-22 container in the transportation of detonators indicates its performance in accident and fire situations is excellent. Furthermore, during that period, use of the IME-22 container was extended to detonators meeting criteria for a class A explosive under recently revised rules. Based on that experience, MTB is confident requirements pertaining to use of the IME-22 container provide an adequate level of safety.

Although the commenter states "(w)e would recommend that some other administrative method be selected to achieve the intended result * * *", MTB notes no such recommendation was provided. The record does not, therefore, support the commenter's suggestion that the regulations be revised to prohibit transportation of detonators which are not packaged in a intermediate or specification outside packaging.

Twenty-five commenters objected to the proposed requirement that an IME-22 box shall be used when detonators and detonating cord are transported on the same motor vehicle. The following comment is representative of this group.

I disagree with DOT's position that * * * restricting the transportation of class C detonating cord and class C detonators from carriage on the same vehicle unless the detonators are packed in an IME-22 box would not cause "significant impact on a substantial number of small entities." My company is definitely a small business entity and this proposal would severely limit my capability to compete in oilfield wireline service industry.

I believe it is very important to small wireline businesses that you continue to allow * * * properly packaged class C detonators (packaged in accordance with 49 CFR 173.103(d)(1) and 173.103(d)(2), to be transported on the same vehicle with class C detonating cord. If you do so, I'll be able to remain competitive in my business and you will have performed your duty to insure the safe transportation of detonating cord and the safety of the general public.

These commenters contend an equivalent level of safety may be achieved by using packages of detonators suitable for transportation aboard passenger-carrying aircraft. Packages conforming to § 173.103(d) may not exceed 50-pounds gross weight. • In addition, those packages must be so designed that if one device near the center of a package is detonated, no other device in the package will detonate and there will be no communication of detonation from one package to another. There is, then, strong bases for the packaging option suggested by these commenters.

In consideration of the above, § 177.835(g) is amended to permit transportation of detonators, class C explosive, packaged to conform with § 173.103(d), on the same motor vehicle with detonating cord, class C explosive.

2. *Detonators packaged prior to January 1, 1985.* Several commenters took note of the impending date for mandatory compliance with requirements promulgated under Docket HM-161 (44 FR 70721, December 10, 1979). The following chronology tracks events which result in a problem for these commenters.

- HM-161 adopted a rule which did away with the classification of blasting caps on the basis of quantity (i.e., more than 1000 are class A and 1000 or less are class C).

- HM-161 adopted a rule which determines hazard class on basis of limited propagation (class C), explosion of more than 25 grams of the aggregate gross weight of explosives, excluding ignition and delay charges, in the outside packaging (class A) and mass detonation (class A).

- HM-161 provides in § 173.66(C) a transition period of 5 years for shippers to have their blasting caps approved as class C explosives. (Jan. 1, 1980-Dec. 31, 1984).

- To the surprise of most shippers, there is difficulty developing packages that meet criteria for class C explosive for a majority of their detonators. Therefore, shippers continue to classify on the basis of quantity.

- A principle reason that shippers continue to mark and label their packages "blasting caps, class C explosive" is the limitation in the 1979 edition of the IME Standard 22 permitting class C blasting caps only.

- IME filed petition for rulemaking P-891 on January 14, 1983. That petition seeks to also permit transportation of class A detonators in an IME Standard 22 container.

The IME submitted the following comment:

In order to preserve an operation which has a demonstrated record of safety in transportation, the explosives industry awaited action on its petitions which are covered in HM-191 to clarify HM-161. Therefore, packaging certain blasting caps as detonators was delayed.

There will be a substantial inventory of blasting caps in the field as of January 1, 1985. In order to deplete this inventory, IME

respectfully requests that material packaged prior to January 1, 1985 continue to be shipped under existing markings and regulations until January 1, 1986 at which time all remaining inventory will be relabeled.

The Department of the Army commented by stating:

The proposal would require reaccomplishing standard emergency resupply packages of munition items, which are configured to support a declared national emergency. Repackaging and reworking present inventories would increase packaging and transportation costs. * * *

Recommend a grandfather clause be incorporated to allow Department of Defense to package, mark, and ship present stocks of this material in accordance with the regulations prior to implementation of this ruling. This will allow Department of Defense to deplete our inventory without costly repackaging and remarking.

While a five year transition period provided shippers adequate time to reclassify packages of detonators, they were hampered by the restriction in IME Standard 22 which limits use of that container to blasting caps that are class C explosives. With adoption in this final rule of a revised edition of the IME Standard 22 permitting class A detonators also, there is no longer a reason to mark packages of detonators "blasting caps", class C explosive. However, as adoption of that revised edition of IME Standard 22 comes at the eleventh hour, MTB recognizes a considerable number of packages marked and classed under the grandfathered rules are stored in explosives magazines. Considering that blasting caps have been safely transported under that description and class for well over 50 years, MTB believes benefits gained by remarking the packages are disproportionate to costs. Section 173.66(g), therefore, is revised to permit the transportation of detonators, packaged prior to January 1, 1985, in accordance with regulations in effect on October 31, 1979. This provision terminates on December 31, 1985. Each package offered for transportation after December 31, 1985 must conform with rules in effect at the time of shipment.

3. *IME Standard 22.* For consistency with amendments proposed in Notice No. 84-4, the IME submitted a later revision to their Standard Library Publication (SLP) No. 22 which specifies conditions that must be met before detonating cord, class C explosive, may be transported on the same motor vehicle with detonators. Essentially, the revision permits transportation of class

C detonating cord and detonators in a manner already in effect for high explosives and detonators. It is agreed the revision is necessary. Therefore, MTB is incorporating by reference IME SLP No 22 revised as of January 1, 1985.

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 is revised to incorporate the January 1, 1985 edition of IME Standard 22. A copy is available for review in the docket file for this rulemaking action.

Section 172.101 is amended by removing the proper shipping name "cordeau detonant fuse" and adding two entries with the proper shipping name "Cord, detonating flexible" (class A and class C).

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

Section 173.66 Paragraph (c) is revised to permit the carriage by motor vehicle of certain detonators (blasting caps) that are not packed in an outside specification wooden or fiberboard box. Instead, the detonators shall be transported in an IME Standard 22 container or compartment.

Paragraph (e) is amended by adding subparagraph (3) to permit use of an IME Standard 22 container or compartment as an alternative to specification wooden and fiberboard boxes ordinarily required for class A detonators.

Paragraph (g) is amended by extending by one year the period during which detonators may be transported under rules in effect on October 31, 1979.

Section 173.81 is added to specify packaging requirements for detonating cord, class A explosive. The packaging requirements are similar to those specified in § 173.104 for class C detonating cord.

Paragraph (c) permits transportation of 100 pounds or less of detonating cord not exceeding 100 grains of explosive per linear foot as a class C explosive.

Section 173.100(d) is revised to redefine detonating cord. The expanded definition specifies the approving agency shall assure that a detonation in one package will not communicate detonation to adjacent packages.

Section 173.103 is amended by adding a requirement in paragraph (c)(4) that each inside packaging containing detonators, class C explosives, shall be marked "class C explosives". The Department of the Army did not concur

in this proposal. However, the commenter did not provide support for its nonconcurrence.

The requirement that inside packagings for detonators be marked "class C explosive" is essential to safety in transportation. Absent this marking requirement, intermediate and end-use shippers could mistakenly remove unmarked inner packages of class A detonators containing an excessive amount of explosive material and transport them in an IME-22 container as a class C explosive. As safety requirements pertaining to transportation of class A explosives are more stringent, the regulations must consider the worst possible case. Consequently, the shipper may take advantage of the less stringent regulations pertaining to class C explosives, but only upon a positive endorsement that the detonators otherwise qualify as class C explosives.

Twenty-six commenters requested that MTB permit use of packages which conform to requirements of § 173.103(d), as an alternative to the IME-22 container. Thus, paragraph (d) is amended by adding a requirement that each package of detonators suitable for transportation aboard a passenger-carrying aircraft shall have a marking which assures motor carrier personnel those detonators may be transported with hazardous materials normally requiring segregation or separation. The required marking states "This package conforms to conditions and limitations specified in 49 CFR 173.103(d)." Currently, the air carrier's need to know this information is satisfied by the required shipping paper entry "Cargo aircraft only". However, as the package now has special significance in the highway mode, motor carriers must see an endorsement which assures that otherwise incompatible materials are not transported on the same vehicle.

Section 173.104 is revised to give formal notice that each outstanding approval for cordeau detonant fuse, class C explosive is amended by changing the hazard class from class C explosive to class A explosive, and by changing the proper shipping name from cordeau detonant fuse to cord, detonating flexible. To facilitate an orderly transition, a period of approximately 18 months is granted during which detonating cord, for which an approval was issued prior to January 1, 1985, may be transported subject to conditions of the approval and in accordance with requirements of the HMR in effect on December 31, 1984.

Section 174.81 is 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), removing cordeau detonant fuze from row 8, and adding detonating cord at row 8a. Detonating cord (class A and C) is prohibited from transportation in the same transport vehicle with initiating explosives, all detonators and detonating primers, detonating fuzes, and special fireworks and railway torpedoes.

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

Row 7a, headed "Detonators, detonating primers", is added to the group of class C explosives. These articles are prohibited from transportation with certain other explosives, blasting agents and poisonous gases.

Row 8a, headed "Detonating cord", is added to the group of class C explosives. Detonating cord is prohibited from transportation with initiating explosives, detonators and detonating primers, detonating fuzes, and special fireworks and railway torpedoes.

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

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

Reference to footnote 2 is added at the intersection of rows 13 and e since its applicability is also to ammunition for cannon.

Footnote 5 is revised to remove references to blasting agents and ammonium nitrate-fuel oil mixtures. Those 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 is limited to ammonium nitrate, fertilizer grade.

Section 175.320 is amended by changing a description in the table in paragraph (a) from cordeau detonant fuse to detonating cord. This specific authorization to transport detonating cord aboard a cargo only aircraft supersedes the general restriction in column (6)(b) of the Hazardous Materials Table.

Section 176.83 is amended at Table I 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); removing cordeau detonant fuze from row 15; and adding detonating cord at row 15a. Detonating cord (class

A and C) is prohibited from transportation in the same hold or compartment with initiating explosives, all detonators and detonating primers, detonating fuzes, and special fireworks and railway torpedoes.

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

All detonators are prohibited from loading and stowage with blasting agents.

Detonating fuzes are prohibited from loading and stowage with blasting agents.

Section 177.835(g) is revised to add blasting agents and detonating cord, Class C explosive as materials that may not be transported on the same motor vehicle with detonators or detonating primers. However, exceptions in paragraph (g) permit transportation of detonators and blasting agents on the same motor vehicle. Paragraph (g) is revised to permit transportation of detonators packaged to conform with requirements specified in § 173.103(d) with detonating cord, class C explosives.

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

Section 177.848 is 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 fuze from row 8.

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

Row 8a, headed "Detonating cord", is added to the group of class C explosives. Detonating cord is 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(g).

The heading of row 10 is 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 is removed since requirements applicable to class C detonators are now specified in row 7a.

Footnote 1 is revised to apply to class A detonators, and class C detonators transported with class C detonating cord.

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

Footnote 5 is 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 is limited to ammonium nitrate, fertilizer grade.

III. Administrative Notices

A. Executive Order 12291

The MTB determined the affect of this final rule will not meet the criteria specified in section 1(b) of Executive Order 12291 and is, therefore, not a major rule. This is not a significant rule under DOT regulatory procedures (44 FR 11034) and requires neither a Regulatory Impact Analysis, nor an environmental impact statement under the National Environmental Policy Act (49 U.S.C. 4321 *et. seq.*). A regulatory evaluation is available for review in the Docket.

B. Impact on Small Entities

Based on limited information concerning size and nature of entities likely affected, I certify this final rule will not, as promulgated, have a significant economic impact on a substantial number of small entities under criteria of the Regulatory Flexibility Act.

C. List of Subjects

49 CFR Part 171

Explosives, Hazardous materials transportation.

49 CFR Part 172

Explosives, Hazardous materials transportation.

49 CFR Part 173

Explosives, Packaging and containers.

49 CFR Part 174

Explosives, Railroad safety.

49 CFR Part 175

Explosives, Air carriers.

49 CFR Part 176

Explosives, Maritime carriers.

49 CFR Part 177

Explosives, Motor carriers.

IV. Rules and Regulations

In consideration of the foregoing, Parts 171 through 177 of Title 49, Code of Federal Regulations are amended as follows:

PART 171—GENERAL INFORMATION, REGULATIONS, AND DEFINITIONS

1. In § 171.7 paragraph (d)(9) is 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 January 1, 1985.
* * * * *

PART 172—HAZARDOUS MATERIALS TABLES AND HAZARDOUS MATERIALS COMMUNICATIONS REGULATIONS

2. § 172.101, the Hazardous Materials Table is 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		
					Excep-tions	Specific require-ments	Passenger carrying aircraft or railcar	Cargo aircraft only	Cargo ves-sel	Pass-enger vessel	Other require-ments
(1)	(2)	(3)	3(a)	(4)	5(a)	5(b)	6(a)	6(b)	7(a)	7(b)	7(c)
	REMOVE Cordeau detonant fuse..... ADD Cord, detonating flexible..... Cord, detonating flexible.....	Class C explosive..... Class A explosive..... Class C explosive.....		Explosive C..... Explosive A..... Explosive C.....	None 173.81 None	173.104 173.81 173.104	50 pounds..... Forbidden..... Forbidden.....	300 pounds..... Forbidden..... 150 pounds.....	1,2 6 1,3	1,2 5 1,3	

PART 173—SHIPPERS—GENERAL REQUIREMENTS FOR SHIPMENTS AND PACKAGINGS

3. In § 173.53 paragraph (w) is 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) is redesignated (c)(3); paragraph (g) is revised; and paragraphs (c)(2) and (e)(3) are 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; and

(iii) No material is loaded on top of the IME Standard 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.

(g) Devices subject to this section and approved by an agency listed in § 173.86(b) before January 1, 1980, may be transported subject to conditions of the approval and in accordance with regulations in effect on October 31, 1979, until December 31, 1985. Applicability of this paragraph is further limited to detonators packaged for transportation prior to January 1, 1985.

5. Section 173.81 is added to read as follows:

§ 173.81 Detonating cord.

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

(b) Each outside packaging shall be plainly marked "DETONATING CORD—HANDLE CAREFULLY".

(c) Detonating cord having an explosive content not exceeding 100 grains per linear foot may be offered for transportation and transported as a class C explosive if the gross weight of all packages of detonating cord does not exceed 100 pounds per—

(1) transport vehicle, freight container or cargo only aircraft.

(2) offshore down hole tool pallet carried on a cargo vessel.

(e) cargo compartment of a cargo vessel.

(4) passenger-carrying aircraft used to transport personnel to remote work sites, such as offshore drilling units.

6. In § 173.100, paragraph (d) is revised to read as follows:

§ 173.100 Definition of class C explosives.

(d) Cord, detonating flexible 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.

Approval of detonating cord as a class C explosive is contingent upon:

(1) examination by an agency listed in § 173.86(b); and

(2) a demonstrated ability to confine blast effects of a detonation to the package as prepared for transportation, and without propagation of detonation to similar packages which surround it.

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

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

(c) * * *

(4) Each inside packaging shall 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" shall be offered for transportation as a class A explosive.

(d) * * *

(3) The shipper certifies conformance with requirements of this paragraph by marking the outside of the package with the statement: "This package conforms to conditions and limitations specified in 49 CFR 173.103(d)".

8. Section 173.104 is revised to read as follows:

§ 173.104 Cord, detonating flexible; mild detonating fuse, metal clad or flexible; or flexible linear shaped charges, metal clad.

(a) Cord, detonating flexible which was properly examined, and classed and described "cordeau detonant fuse,

class C explosive" prior to January 1, 1985 by an agency listed in § 173.86(b) is reclassified class A explosive and assigned the proper shipping name "cord, detonating *flexible*". However, until June 30, 1986, cord detonating *flexible* which was properly examined, and classed and described "cordeau detonant fuse, class C explosive" may be offered for transportation and transported subject to conditions of the approval and in accordance with requirements of this subchapter in effect on December 31, 1984.

(b) Cord, detonating *flexible*; mild detonating fuse, metal clad or flexible; and flexible linear shaped charges, metal clad may not be packed in the same package with detonators or with any high explosive.

(c) Cord, detonating *flexible*; mild detonating fuse, metal clad or flexible; and flexible linear shaped charges, metal clad shall be packed in wooden or fiberboard boxes. Each package shall be marked "CORD, DETONATING *FLEXIBLE*—HANDLE CAREFULLY", "MILD DETONATING FUSE, METAL

CLAD or *FLEXIBLE*—HANDLE CAREFULLY" or "FLEXIBLE LINEAR SHAPED CHARGES, METAL CLAD—HANDLE CAREFULLY", as appropriate.

PART 174—CARRIAGE BY RAIL

9. In § 174.81, the table is revised to read as follows:

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

(a) * * *

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PART 175—CARRIAGE BY AIRCRAFT

§ 175.320 [Amended]

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

PART 176—CARRIAGE BY VESSEL

11. In § 176.83, Table I is revised to read as follows:

§ 176.83 Segregation requirements for cargo vessels and passenger vessels.

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Segregation and Separation Chart of Hazardous Materials — Table I

Footnotes

- Explosives, class A and explosives, class B, must not be loaded or stowed with chemical ammunition containing incendiary charges or with phosphorus either with or without bursting charges. Chemical ammunition of the same classification containing incendiary of white phosphorus may be loaded and stowed together.
- Bursting (explosive), boosters (explosive), or supplementary charges (explosive) without detonators when shipped by, to, or for the Department of the Army, Navy, and Air Force of the United States Government may be stowed with any of the article named, except those in columns 3, 4, 10 and 16.
- Detonating cord transported as class C explosive under provisions of §173.81(c) of this subchapter shall, as a minimum, be stowed "separated from" other consignments or detonating cord.

Instructions

The letter X, at an intersection of horizontal rows and vertical columns shows that those materials must not be loaded or stowed together.

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	14a	15	15a	16	17	18	
CLASS C EXPLOSIVES																					
Detonating cord.																					
Fireworks, common.																					
Blasting agents, n.o.s.																					
Ammonium nitrate-fuel oil mixtures																					
CLASS B EXPLOSIVES																					
Fireworks, special or railway torpedoes.																					
Propellant explosives, jet thrust units (jato), igniters, jet thrust, rocket motors, rocket engines (liquid), igniters, rocket motor, starter cartridges, jet engine.																					
Ammunition for cannon with empty, inert-loaded or solid projectiles, or without projectiles; rocket ammunition with empty, inert-loaded or solid projectiles.																					
CLASS A EXPLOSIVES																					
Explosive projectiles; bombs; torpedoes; mines; rifle or hand grenades (explosive); jet thrust units (jato), igniters, jet thrust, rocket motors, igniters rocket motor.																					
Detonating fuzes, class A explosives, with or without radioactive components.																					
Ammunition for cannon, with explosive projectiles; gas projecting projectiles; smoke projectiles; incendiary projectiles; illuminating projectiles; ammunition for small-arms with incendiary projectiles; rocket ammunition with explosive projectiles; gas projectiles; rocket projectiles; incendiary projectiles; illuminating projectiles; boosters (explosive); bursters (explosive); and supplementary charges (explosive) without detonators. ^{3/}																					
Detonators, detonating primers.																					
Low explosives or black powder																					
High explosives, propellant explosives or detonating cord. ^{3/}																					
Initiating or priming explosives, wet: Diazodinitrophenol, luminite of mercury, guanil nitrosamino guanilydene hydrazine, lead azide, lead styphnate, nitro mannie, nitrosoguanidine, pentaerythrite tetranitrate, tetrazene, lead mononitrosocinnate																					

PART 177—CARRIAGE BY PUBLIC HIGHWAY

12. In § 177.835, paragraph (g)(2) is redesignated (g)(3), the introductory text of paragraph (g) is revised, and a new paragraph (g)(2) is added 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 explosive unless—

(2) The package conforms with requirements prescribed in § 173.103(d) of this subchapter, and its use is restricted to instances when—

- (i) There is no class A or class B explosive or blasting agent loaded on the motor vehicle; and
- (ii) A separation of 24 inches is maintained between each package of detonators and each package of detonating cord; or

13. In § 177.848(f), the Loading and Storage Chart of Hazardous Materials is revised to read as follows:

§ 177.848 Loading and storage chart of hazardous materials.

(f) * * *

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