DEPARTMENT OF TRANSPORTATION

Research and Special Programs Administration

49 CFR Parts 171 and 173

[Docket No. HM-202; Amdt. Nos. 171-106, 173-218]

RIN 2137-AB36

Standards for Construction of Fireworks and Novelties; Approval for Transportation

AGENCY: Research and Special Programs Administration (RSPA), DOT.

ACTION: Final rule.

SUMMARY: RSPA is revising the requirements in the Hazardous Materials Regulations (HMR) pertaining to the approval of Class B and C fireworks and Class C novelties (a novelty being a device which produces limited visible or audible effects; e.g., toy smoke devices, trick noisemakers). This rule provides an exception from a requirement for the examination of certain fireworks and novelties by the Bureau of Explosives (BOE) or the Bureau of Mines (BOM) prior to their approval for transportation by the Director, Office of Hazardous Materials Transportation (OHMT). In order to qualify for this exception, the devices must be constructed from specific chemicals known to be thermally stable in full conformance with the American Pyrotechnics Association, Inc. (APA) Standard 87-1, and must have satisfactorily passed a thermal stability test performed by the manufacturer or a testing laboratory, such as the BOE or BOM.

The intended effect of this action is to expedite the DOT approval process for the fireworks and novelties, and reduce the cost of processing applications for approval and paperwork. Information collection and recordkeeping requirements contained in § 173.80 herein have been approved by the Office of Management and Budget (OMB) under the provisions of the Paperwork Reduction Act of 1980 and assigned the control number OMB No 2137-0557.

EFFECTIVE DATE: November 24, 1989. However, immediate compliance with the regulations, as amended herein, is authorized.

The incorporation by reference of the publication listed in this amendment is approved by the Director of the Federal Register as of September 25, 1989.

FOR FURTHER INFORMATION CONTACT: Charles W. Schultz, Technical Division, (202) 366-4545; or Jacquelyn F. Smith, Standards Division, (202) 366-4488, Office of Hazardous Materials Transportation, Department of Transportation, Washington, DC 20590.

SUPPLEMENTARY INFORMATION: On February 12, 1988, RSPA published a notice of proposed rulemaking (NPRM) in the Federal Register under Docket HM-202, Notice 88-1 (53 FR 4348) to simplify the procedures for obtaining approval of new fireworks and novelties for transportation. The DOT regulations presently require that all fireworks be examined by the Bureau of Explosives (BOE) or other laboratory acceptable to DOT for the proposed classification. The laboratory reports must then be submitted to DOT for approval and assignment of an EX number. In many cases, firework manufacturers have had to wait for several weeks for their laboratory reports due to a heavy backlog of samples at the BOE. Under procedures adopted in this final rule, paperwork burdens and time delays would be reduced, in most cases, because information required to classify an item would be submitted directly to RSPA.

Within the past five years, RSPA has classed and approved over 5,000 fireworks and novelties, a number of which were identical or similar in chemical composition and construction. Requiring that these standard devices be repeatedly submitted for examination is costly and time-consuming for the fireworks industry. Based on the number of samples examined in past years, estimated savings to the fireworks industry would amount to over $133,000 annually. Furthermore, such examinations offer little or no additional safety benefits to the public. The chemical mixtures that are involved have been in use for more than 50 years and their safety and stability are well known. A laboratory examination is still required for potentially-unstable or new compositions. RSPA believes that this procedure will provide an equivalent level of safety for classifying and approving fireworks and novelties while significantly expediting the DOT approval process for fireworks and novelties, reducing paperwork and costs in processing applications for approval, and providing clarification and better compliance of the regulations through an acceptable industry consensus standard.

As discussed in the NPRM, unless otherwise required by the Director, OHMT, a person who produces a new firework or novelty device in full conformance with APA Standard 87-1 need not submit those devices to the BOE or the BOM for examination. To obtain approval of a device, a manufacturer would submit a written application to the Director, OHMT, containing the information outlined in the APA Standard. This information would include a detailed description of the device, including shape, size, and a diagram showing location of all components; the chemical composition, including a list of formulas; and the results of the thermal stability test for each device or component. Each application would contain copies of all relevant data and drawings required for processing the approval request. If the Director, OHMT, determines that an application contains adequate justification to class the device for transportation, the applicant will be sent a letter containing the EX-number assigned to the approved device. At his discretion, the Director, OHMT, may require that a device be examined by the BOE or BOM. The NPRM also contained a proposal to require that the EX-numbers assigned to the devices be marked on the packages.

In response to the NPRM, RSPA received 28 comments. Eight commenters supported the proposal, citing the need to simplify the approval procedures and to reduce costs. Twelve commenters were in favor of the proposal, but expressed concern about the proposed requirement that packages of fireworks and novelties be marked with the EX-number assigned to the devices. The latter commenters stated that the proposed requirement generally would not impose a burden on manufacturers who normally pack several of the same devices, all with the same EX-number, in one package. However, they asserted, a burden would be imposed on distributors, wholesalers, and retailers who normally pack "custom" orders containing many different devices, all with different EX-numbers, in a package. One commenter stated that a typical order could contain as many as 30 different devices in one package, and the combination of devices would vary with each order. RSPA agrees with the commenters that, in some cases, marking the EX-number of all devices contained in a package may impose a burden on some persons. Accordingly, under this final rule, when more than five different fireworks or novelty devices are packed in the same package, the package need not be marked with more than five EX-numbers. Although all of the applicable EX-numbers will not be marked on the package, RSPA believes an acceptable level of hazard communication will be achieved.

Five commenters expressed other concerns about the proposal. The BOE recommended that the thermal stability

test be conducted by qualified, disinterested laboratories, not by fireworks manufacturers. The use of independent testing laboratories was also supported by two other commenters representing a fire department and an independent testing agency. Two other commenters, also representing fire departments, objected to the proposed rule on the basis of accidents resulting from public use of common fireworks. One of these commenters stated that the lack of testing by recognized laboratories would compromise public safety and perhaps be a disservice to the American people. This same commenter questioned whether a fireworks manufacturer would destroy or dismantle an entire lot of shells if the devices failed the testing.

RSPA shares the commenters' concern that an acceptable level of safety be maintained. Thermal instability is the principal hazard of these devices. Based on repeated testing and many years of safe shipping experience, the formulations identified in APA Standard 87–1 for use in fireworks are known to be thermally stable. Further, any application submitted to RSPA for approval of fireworks and novelties must contain a detailed description of the chemical composition of the device and information on the device's thermal stability when subjected to a test of 167 °F. for 48 hours. Therefore, all fireworks and novelty devices approved for transportation under this rule must have passed this test. When a device contains more than one component which may come into physical contact with another component in the finished device, RSPA is requiring that these components be placed in contact with each other during the thermal stability test in order to further ensure the stability of these devices. Paragraph 8 of APA Standard 87–1 places direct responsibility for providing correct thermal stability test data on the person submitting an application. RSPA believes that permitting manufacturers to perform the thermal stability testing is consistent with many other provisions in the HMR which place responsibility for compliance on the manufacturer or the person offering a hazardous material for transportation.

The National Fire Protection Association (NFPA) expressed its concern that some fireworks would no longer be examined by the BOE and BOM, and stated that it does not support the enhanced availability of fireworks for transportation when the devices' performance is unknown. The NFPA's comments fail to take into consideration that thermal stability testing of fireworks and novelty devices would be conducted and certified by the manufacturer. A manufacturer may choose to have the testing performed by the BOE, BOM, or other test laboratory.

A commenter expressed concern that the prohibition in current § 173.100(r) on the use of plastic components in devices intended to produce audible effects had been broadened in APA Standard 87–1 to include devices designed to produce visible effects. This commenter stated that the use of soft polystyrene plastic actually increases the safety of these devices, and expressed concern that these devices would no longer meet the criteria for class C explosives. RSPA believes this commenter misunderstood the provisions in the APA Standard. Provision 3.6.2 in APA Standard 87–1 states: *"Prohibited Components.* No component of any common firework device or novelty may, upon functioning, project or disperse any metal, glass or brittle plastic fragments." Thus, APA Standard 87–1 prohibits the use of any "brittle plastic components" that may be projected or dispersed upon functioning. The standard contains no restrictions on the use of soft plastics in the construction of common fireworks and novelty devices.

The Air Line Pilots Association (ALPA) stated that they opposed HM–202 as presented. ALPA recommended that the BOE, BOM or RSPA maintain quality control over APA Standard 87–1 to ensure no changes are made to the standard without public notice and comment under the regulatory process system. RSPA notes that documents incorporated by reference in § 171.7 become an extension of the HMR themselves. The Director of the Federal Register must approve the material being incorporated by reference and, as with any rule change, RSPA would publish a notice in the Federal Register stating its intention to incorporate by reference any new document or revision of a publication referenced in § 171.7. Interested persons would be provided a opportunity to comment on the merits of incorporating a new or changed standard.

ALPA requested clarification on how the proposal on fireworks and novelties relates to the requirements for a certificate of competent or appropriate authority in U.S. variation 28 (US28) listed in the International Civil Aviation Organization's Technical Instructions for the Safe Transport of Dangerous Goods by Air (ICAO Technical Instructions). US28 requires approval of explosive articles or substances by the Director, OHMT, and this provision would remain unchanged. Under this final rule, the Director, OHMT, would still approve all new fireworks.

ALPA also expressed concern that the HMR authorize common fireworks for transportation either by passenger aircraft or cargo aircraft, but in the ICAO Technical Instructions, only "Type D" fireworks are authorized for transportation on a passenger aircraft. ALPA stated that, in their opinion, shipments of fireworks should conform to the ICAO Technical Instructions. RSPA believes most common fireworks would probably fall under ICAO class 1.4, which was referred to as Type D in earlier editions of the ICAO Technical Instructions. RSPA is addressing the classification, packaging, and transportation of explosives in general under a separate rulemaking action, Docket-181A. A notice of proposed rulemaking will be published in the near future.

Review by Section

Section 171.7. APA's mailing address is added under paragraph (c)(33), and APA Standard 87–1 is incorporated by reference in paragraph (d)(29).

Section 171.8 A definition of "EX number" is added. The EX number is assigned by the Director, OHMT, and used to provide better identification of explosives.

Section 173.86. Paragraph (b) is revised for clarity and for consistency with other changes made in § 173.86. The latest edition of the Explosives Hazard Classification Procedures contained in DOD TB 700–2 is referenced in paragraph (b).

A new paragraph (j) is added which provides an exception from the requirement for an examination by the BOE or BOM for certain fireworks or novelties produced in conformance with APA Standard 87–1. For a device containing chemicals not addressed by APA Standard 87–1, the applicant must submit a report of examination by the BOE or BOM for each component contained within the device as presently required by § 173.86(b). When offered for transportation, packages containing fireworks or novelty devices must be marked with the EX-number assigned to each device in the package, however, when more than five different types of fireworks or novelties are packed in the same package, the package is required to be marked with at least five EX-numbers.

Sections 173.88 and 173.100. The definitions of Class B special fireworks in § 173.88(d) and of Class C common fireworks in § 173.100(r) are retained for the convenience of users of the HMR, as suggested by a commenter. Paragraphs

(t) and (x) of § 173.100 containing definitions of certain Class C novelties are removed and reserved. Paragraph (j), in § 173.100, is amended by removing the reference to a "toy smoke device" which is a novelty covered in the new standard.

Administrative Notices

Executive Order 12291

RSPA has determined that this final rule (1) is not "major" under Executive Order 12291; (2) is not "significant" under DOT's regulatory policies and procedures (44 FR 11034); (3) will not affect not-for-profit enterprises or small governmental jurisdictions; and (4) does not require an environmental impact statement under the National Environmental Policy Act (40 U.S.C. 4321 *et seq.*). A regulatory evaluation is available for review in the docket.

Impact on Small Businesses

This regulation should result in a minor economic benefit to some small entities that are fireworks manufacturers, however, some retailers and distributors may experience minimal added costs. I certify that this regulation will not have a significant economic impact on a substantial number of small entities under the criteria of the Regulatory Flexibility Act.

Executive Order 12612

I have reviewed this regulation in accordance with Executive Order 12612 ("Federalism") and have determined it has no substantial direct effect on the States, on the Federal-State relationship or the distribution of power and responsibilities among levels of government. Thus, this regulation contains no policies that have Federalism implications, as defined in Executive Order 12612.

Paperwork Reduction Act

The information collection burden remains the same. Information collection requirements contained in the current § 173.86 pertaining to new explosives have been approved by the Office of Management and Budget under the provisions of the Paperwork Reduction Act of 1980 (Pub. L. 96-511) and assigned control number, OMB No. 2137-0557

List of Subjects

49 CFR Part 171

Hazardous materials transportation, Incorporation by reference.

49 CFR Part 173

Hazardous materials transportation, Packaging and containers.

In consideration of the foregoing, 49 CFR parts 171 and 173 are amended to read as follows:

PART 171—GENERAL INFORMATION, REGULATIONS, AND DEFINITIONS

1. The authority citation for part 171 continues to read as follows:

Authority: 49 App. U.S.C. 1802, 1803, 1804, 1808; 49 CFR Part 1, unless otherwise noted.

2. In § 171.7, paragraphs (c)(33) and (d)(29) are added to read as follows:

§ 171.7 Matter incorporated by reference.

* * * * *

(c) * * *

(33) APA: American Pyrotechnics Association, P.O. Box 213, Chestertown, Maryland 21620.

(d) * * *

(29) APA Standard 87-1 is titled, "Standard for Construction and Approval for Transportation of Fireworks and Novelties", September 1987 edition.

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3. In § 171.8, a definition for "EX number" is added, in alphabetical sequence, to read as follows:

§ 171.8 Definitions and abbreviations.

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EX number means a number, preceded by the prefix "EX-" which is assigned by the Director, OHMT, to identify a new explosive.

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PART 173—SHIPPERS—GENERAL REQUIREMENTS FOR SHIPMENTS AND PACKAGINGS

4. The authority citation for part 173 continues to read as follows:

Authority: 49 App. U.S.C. 1803, 1804, 1805, 1806, 1807, 1808; 49 CFR part 1, unless otherwise noted.

5. In § 173.86, paragraph (b) is revised and paragraph (j) is added to read as follows:

§ 173.86 New explosive definitions; approval and notification.

* * * * *

(b) Except as otherwise provided in this section, no person may offer a new explosive for transportation unless:

(1) It has been examined and assigned a recommended shipping description and hazard class by the Bureau of Explosives, Association of American Railroads or the Bureau of Mines, U.S. Department of the Interior and has been classed and approved by the Director, OHMT;

(2) It has been examined, classed, and approved by the U.S. Army Materiel Development and Readiness Command (DRCSF), Naval Sea Systems Command (NAVSEA 06H), or HQUSAF (IGD/SEV) when made by, or under the direction or supervision of, the DOD and tested in accordance with the Explosives Hazard Classification Procedures contained in DOD TB 700-2 (September 1982), (NAVSEAINST 8020.8 AFTO 11A-1-47, DSAR 8220.1) and the approval has been submitted to, and acknowledged by the Director, OHMT; or

(3) It has been examined, classed, and approved by the U.S. Department of Energy (DOE) when made by, or under the direction or supervision of, the DOE and tested in accordance with the Explosives Hazard Classification Procedures contained in DOD TB 700-2 (September 1982) and the approval has been submitted to, and acknowledged in writing by the Director, OHMT.

* * * * *

(j) *Fireworks and Novelties.* Notwithstanding the provisions of paragraph (b) of this section, Class B and C fireworks and Class C novelties may be classed and approved by the Director, OHMT, without prior examination and offered for transportation, if—

(1) The fireworks or novelty devices are manufactured in accordance with the applicable requirements in APA Standard 87-1;

(2) A thermal stability test is conducted on the device by the BOE, and BOM, or the manufacturer. The test must be performed by maintaining the device, or a representative prototype of a large device such as a display shell, at a temperature of 167° F. (75° C.) for 48 consecutive hours. When a device contains more than one component, those components which could be in physical contact with each other in the finished device must be placed in contact with each other during the thermal stability test;

(3) The manufacturer applies in writing to the Director, OHMT, following the applicable requirements in APA Standard 87-1, and is notified in writing by the Director, OHMT, that the fireworks or novelty device has been classed, approved, and assigned an EX-number. Each application must be complete, include all relevant background data and copies of all applicable drawings, test results, and any other pertinent information on each device for which approval is being requested. The manufacturer must sign the application and certify that the device for which approval is requested conforms to APA Standard 87-1 and that the descriptions and technical information contained in the application are complete and accurate. If the

application is denied, the manufacturer is notified in writing of the reasons for the denial. The Director, OHMT, may require that the fireworks or novelty be examined by an agency listed in paragraph (b)(1) of this section; and

(4) When offered for transportation, each package containing approved fireworks or novelties is marked with the EX-number for each device therein, except that when more than five different fireworks or novelty devices are packed in the same package, the package need not be marked with more than five of the EX-numbers.

6. In § 173.88, paragraph (d) is revised to read as follows:

§ 173.88 Definitions of Class B explosives.

* * * * *

(d) Special fireworks are devices designed primarily to produce visible or audible effects, or both visible and audible effects by combustion or explosion. Fireworks must be in a finished state, exclusive of mere ornamentation, and must be so constructed and packed that loose pyrotechnic composition will not be present in packages in transportation. Examples of special fireworks are toy torpedoes, railway torpedoes, some firecrackers and salutes (depending on pyrotechnic composition or quantity), exhibition display pieces, aeroplane flares, illuminating projectiles, incendiary projectiles, incendiary bombs or incendiary grenades and smoke projectiles or smoke bombs fuzed or unfuzed containing expelling charges, but without bursting charges, flash powders in inner units not exceeding 2 ounces each, flash sheets in interior packages, flash power or spreader cartridges containing not over 72 grains of flash powder each (see § 173.60 for shipments made as low explosives), and flash cartridges consisting of a paper cartridge shell, small-arms primer, and flash composition, not exceeding 180 grains all assembled in one piece. See also definitions and standards found in APA Standard 87–1. (See § 173.100(r) for common fireworks.)

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7. In § 173.100, paragraphs (t) and (x) are removed and reserved and paragraphs (r) and (u) are revised to read as follows:

§ 173.100 Definition of Class C explosives.

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(r) Common fireworks are devices suitable for use by the public and designed primarily to produce visible or audible effects, or both visible and audible effects, by combustion. No component of the device which produces or is intended to produce an audible effect (other than a whistle) shall contain pyrotechnic composition in excess of 2 grains in weight; nor shall such device or component, upon functioning, project or disperse any dangerous fragments such as metal, glass, or brittle plastic. See also definitions and standards found in APA Standard 87–1.

* * * * *

(t) [Reserved]

(u) Toy propellant devices consist of small paper or composition tubes or containers containing a small charge of slow burning propellant powder. These devices must be so designed that they will neither burst nor produce external flame except through the nozzle on functioning. Ignition elements, if attached, must be of a design examined by the Bureau of Explosives or the Bureau of Mines, and approved by the Director, OHMT.

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(x) [Reserved]

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Issued in Washington, DC, on September 15, 1989, under the authority delegated in 49 CFR part 1.

Travis P. Dungan,

Administrator, Research and Special Programs Administration.

[FR Doc. 89–22498 Filed 9–22–89; 8:45 am]

BILLING CODE 4910–60–M