The Administrator of the Wage and Hour and Public Contracts Divisions shall prepare an economic report for the committee, containing such data as he is able to assemble pertinent to the matters referred to the committee. Copies of the report may be obtained at the National and Puerto Rican offices of the U.S. Department of Labor as soon as they are completed and prior to the hearing. The committee shall take official notice of the facts stated in the economic report. Parties, however, shall be afforded an opportunity to refute such facts by evidence received at the hearing.

The procedure for Review Committee No. 12 shall be governed by 29 CFR Part 512, as amended on October 17, 1967 (32 F.R. 14324). Part 512 makes 29 CFR Part 511 applicable to the procedure of review committees and the general method for issuance of wage orders pursuant to their recommendations, except insofar as Part 511 may be inconsistent with Part 512 or the Fair Labor Standards Amendments of 1966. As a prerequisite to participation in the hearing of Review Committee No. 12 interested persons shall file prehearing statements containing the data specified in 29 CFR 511.8 not later than March 8, 1968.

Signed at Washington, D.C., this 21st day of February 1968.

W. WILLARD WIRTZ,
Secretary of Labor.

[F.R. Doc. 68-2379; Filed, Feb. 26, 1968; 8:50 a.m.]

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

[14 CFR Part 39]

[Docket No. 8572]

AIRWORTHINESS DIRECTIVES

British Aircraft Corp. Model BAC 1-11 200 and 400 Series Airplanes Having Flight Recorders Installed on Right Shear Deck at Station 855; Withdrawal of Notice of Proposed Rule Making

A proposal to amend Part 39 of the Federal Aviation Regulations to include an airworthiness directive (AD) applicable to BAC 1-11 200 and 400 Series airplanes having flight recorders installed on the right shear deck at Station 855 was published in the FEDERAL REGISTER (32 F.R. 17672) on December 12, 1967. The proposed AD would have required the installation of a shield to protect the hydraulic pipes routed on the underside of the front fin sloping frame at Station 855 from damage.

The subject AD was proposed in the belief that the design of the mounting of the flight recorder required a modification to protect against its improper installation. However, service experience accumulated with the type of mounting used with the flight recorder has shown that the proposed modification incorporating a shield to protect the hydraulic pipes is unnecessary.

Withdrawal of this notice of proposed rule making constitutes only such action, and does not preclude the agency from issuing notice in the future, or commit the agency to any course of action in the future.

In consideration of the foregoing, and pursuant to the authority delegated to me by the Administrator (14 CFR 11.89), the proposed airworthiness directive published in the FEDERAL REGISTER on December 12, 1967 (32 F.R. 17672), is hereby withdrawn.

Issued in Washington, D.C., on February 19, 1968.

R. S. SLIFF,
Acting Director,
Flight Standards Service.

[F.R. Doc. 68-2340; Filed, Feb. 26, 1968; 8:47 a.m.]

Hazardous Materials Regulations Board

[49 CFR Parts 171, 172, 173, 174, 177, 178, 179]

[Docket No. HM-3; Notice No. 68-2]

EXPLOSIVES AND OTHER DANGEROUS ARTICLES

Notice of Proposed Rule Making

The purpose of this notice is to request public comment on several miscellaneous amendments proposed by industry and Government agencies for the transportation of hazardous materials. Interested persons are invited to participate in the making of proposed rules by submitting written data, views, or arguments as they may desire. Communications should identify the regulatory docket and notice number and be submitted in duplicate to the Secretary, Hazardous Materials Regulations Board, Department of Transportation, 400 Sixth Street SW., Washington, D.C. 20590.

Communications received before May 1, 1968, will be considered by the Board before taking final action on the notice. All comments will be available for examination by interested persons at the Office of the Secretary of the Board, both before and after the closing date for comments. The proposals contained in this notice may be changed in light of comments received.

The amendment to § 171.8 would redefine the terms "cargo tank," "portable tank," "tank motor vehicle," and add definitions for "tank car tank," "transport vehicles," and "hazardous materials." The amendment to § 172.4 removes the "grandfather" provision for use of the marking "Inflammable" which is obsolete and no longer needed. Additions and changes are proposed for § 172.5 to update descriptions and keep the commodity list current. The amendment to § 173.21 would make more specific the terms of prohibited packaging and would require Departmental approval of items previously approved by the Bureau of Explosives (AAR). The amendment to § 173.30 would expand the application of the requirements pertaining to shipments loaded into motor vehicles by the shipper or unloaded by the consignee. The amendments to §§ 173.31, 173.32, 173.33, and 173.34 would provide for the continued use of existing non-DOT specification tank cars, portable tanks, cargo tanks, and cylinders for the transportation of certain cryogenic, compressed gases. The amendment to § 173.51(q) would make it coincide with the requirement of Bureau of Explosives' approval. Section 173.53 would be amended to make corrections in the names of military offices that may approve conditions for certain shipments. Sections 173.79, 173.92, and 173.95 would be rearranged and editorially adjusted for clarification; Departmental approval would be required for other packaging not provided for. Section 173.86(a) would be amended to exempt new military explosives and chemical ammunition from Bureau of Explosives' approval when tested and approved by established Department of Defense instructions. Section 173.88 would be amended to correct references to Department of Army and Navy approving offices.

Section 173.100 would be amended and a new § 173.101a would be added to define and provide packaging for "Practice cartridge ammunition, class C explosives." Section 173.102 would be amended to require the word "explosive" to be shown in the container marking for starter cartridges for jet engines. The amendment to § 173.115 would redefine the term "flammable liquid" more comparable to national and international industry standards, and to more readily recognize conditions normally incident to transportation. The amendment to § 173.188 would increase the net weight of phosphoric anhydride in Specification 6K metal drums. The amendment to § 173.220 would authorize fiber drums to be used for shipping zirconium or magnesium scrap. The amendment to § 173.245 would provide for the use of Specification 33A polystyrene cases each having one inside glass bottle for corrosive liquids, n.o.s. The amendment to § 173.271 would authorize the use of Specification 5B metal barrels or drums for thiophosphoryl chloride. The amendment to § 173.276 would provide an alternate discharge pressure setting of safety relief valves on Specifications 103C-W and 103A-AL-W tank car tanks. The amendment to § 173.300 would redefine and clarify the term "compressed gas" by putting into a more proper perspective the category of gases and liquids, including cryogenic materials, that present hazards in transportation channels. The amendments to § 173.304 would remove an obsolete filling density proviso for nitrous oxide, specify pressure limitations for liquid hydrogen in Specification 4L cylinders, and provide for the continued use of existing non-DOT specification cylinders for

transportation of certain cryogenic compressed gases. The amendments to §§ 173.314 and 173.315 would provide for the continued use of existing non-DOT specification tank cars and cargo tanks for the transportation of certain cryogenic compressed gases. The amendment to § 173.316 would prescribe Specification 4L cylinders for shipping liquid hydrogen. The amendment to § 173.333 would correct a section cross-reference. The amendment to § 173.368 would clarify the use, markings, and cleaning requirements for rail cars and motor vehicles in arsenical compounds service. The amendment to § 173.370 would make editorial changes only. The amendment to § 173.377 would increase the net weight of certain class B poisonous mixtures that can be shipped in Specification 21C fiber drums from 225 pounds to 250 pounds. The amendment to § 173.384 would provide for the use of an alternate type of closure on inside metal cans of monochloracetone, stabilized. The amendment to § 173.385 would authorize an increased number of grenades and functioning devices that can be shipped in one outside container.

The addition of footnote "f" to § 174.538 and 177.848 would authorize the loading and transporting of normal uranium, depleted uranium, and thorium metal with class A explosives. The amendment to § 174.566 would make the cleaning requirements for cars in potassium permanganate or arsenical compounds service consistent with §§ 173.194 and 173.368. The amendment to § 174.589 would clarify the requirement concerning the placing of loaded tank cars placarded "Dangerous" next to TOFC cars or containers placarded "Explosives."

The amendment to §§ 177.800 and 177.801 would include references to private carriers consistent with the scope and application of the regulations. The amendment to § 177.840 would provide special loading requirements for Specification 4L cylinders containing liquid hydrogen. The amendment to § 177.841 would provide for the marking and cleaning of motor vehicles used for arsenical materials.

The amendments to §§ 178.37–5 through 178.67–5 would clarify the types of steels authorized for cylinders by reinserting the names of the steelmaking processes formerly specified. The amendments to §§ 178.51–20, 178.60–4, and 178.61–5 would regroup the proprietary steel designations into a minimum number of grade categories. Section 178.57 would be modified to accommodate liquid hydrogen in Specification 4L cylinders. Sections 178.82–9, 178.115–8, and 178.116–8 would be amended to clarify drum closure requirements when the closing part is made of material other than metal. The amendment to § 178.150–3 would correlate the minimum sidewall thickness of 1-pint containers with 1-quart containers, inside Specification 33A polystyrene cases. The amendment to § 178.337 would clarify Specification MC 331 with respect to combination of stresses and makes the requirements regarding the tank itself, and the requirements regarding the supports, independent and complete in themselves. The amendment to § 179.202–14 would make the provisions for ultimate discharge pressure setting of safety relief valves on Specifications 103C–W and 103A–AL–W tank car tanks coincide with § 173.276 (a) (4) and (5).

The proposal in § 173.115 to amend the definition of "flammable liquid" would make that term include a range of combustible liquids having flash points higher than those presently so classified, but which present hazards in transportation comparable to the lower flash point materials. Basically, any material which reaches its flash point during the normal conditions of transportation should be considered as flammable. Commodities in transit commonly reach temperatures in excess of 100°–110° F. Two methods of determining flash point are proposed, but the Department's goal is the adoption of a single standard for the flash point demarcation point and a single method of test most conducive to industry practices, the needs of the transportation industries, and the public interest. Comments filed with respect to this approach will assist in determining the best standard. Certain exemptions from commodity description, specification packaging, marking, and labeling requirements, or from Parts 171–190 for packaged alcoholic beverages, distilled spirits, or high wines will be considered if the amendment is adopted.

A change is proposed in the definition of "compressed gas" in § 173.300 to encompass liquefied gases in the very low temperature range that have not heretofore been specifically provided for in the regulations, due primarily to the low pressures in the containers during the normal conditions of transportation. However, materials such as liquid argon, liquid oxygen, and liquid nitrogen are potentially hazardous, regardless of the pressure in the container. The hazard arises due to the potentially high pressures that could be generated in the container, if the low temperatures are not maintained and also due to the inherent physical hazard of extremely low temperature liquids should they leak or spill onto persons or other cargo. If the amendment is adopted, the continued use of existing non-DOT specification containers for these materials would be provided for. A proposed specification for a cryogenic compressed gas cargo tank is currently being prepared by the Department for a forthcoming public notice.

These amendments are proposed under the authority of title 18, United States Code, sections 831–835, and section 9 of the Department of Transportation Act (49 U.S.C. 1657).

In consideration of the foregoing, it is proposed to amend Title 49 of the Code of Federal Regulations as hereinafter set forth.

Issued: February 16, 1968.

A. SCHEFFER LANG,
Administrator,
Federal Railroad Administration.

SAM SCHNEIDER,
Board Member,
Federal Aviation Administration.

LOWELL K. BRIDWELL,
Administrator,
Federal Highway Administration.

C. P. MURPHY,
Rear Admiral, for the
Commandant, U.S. Coast Guard.

I. Section 171.8 would be amended by amending paragraphs (e), (f), and (g) to read as follows and by adding new paragraphs (h), (i), and (j), as follows:

§ 171.8 Definitions.

* * * * *

(e) "Cargo tank" means any tank which is permanently attached to any transport vehicle, or any container which is not permanently attached to any transport vehicle, which, by reason of its size, construction, or attachments to the vehicle, is to be filled or emptied without being removed from the transport vehicle; and which is to be used to transport, in bulk, any article listed in § 172.5 of this chapter. However, the fuel tank of the transport vehicle is not a cargo tank, if it transports fuel solely for the propulsion of the vehicle or for the operation of other vehicle-mounted accessories.

(f) "Portable tank" means any tank which is temporarily attached to a transport vehicle or vessel and which is equipped with skids, mountings, or other accessories to facilitate handling and securing of the tank by mechanical means. It does not include any cargo tank.

(g) "Tank motor vehicle" means any motor vehicle which is used for the transportation of hazardous materials listed in § 172.5 of this chapter in any cargo tank.

(h) "Tank car tank" means any tank car which is used for the transportation of hazardous materials listed in § 172.5 of this chapter in any cargo tank.

(i) "Transport vehicle" means the conveyance which is used for the transportation of hazardous materials and includes any motor vehicle, rail car, or aircraft. Each cargo-carrying body is a separate vehicle.

(j) "Hazardous material" means any material which, by virtue of its potentially hazardous nature, reqiures control of those hazards during transportation to assure adequate safety, and the transportation of which is covered by this chapter. The term "hazardous material" is synonymous with the term "explosives and other dangerous articles" as used in Title 18, United States Code sections 831–835.

II. Part 172 would be amended as follows:

§ 172.4 [Amended]

(A) Note 1 to § 172.4(a) is canceled.

§ 172.5 [Amended]

(B) By amending paragraph (a), Commodity List, of § 172.5 by making the following changes and additions:

Article	Classed as—	Exemptions and packing (see sec.)	Label required if not exempt	Maximum quantity in 1 outside container by rail express
Change				
†Ammonia, anhydrous	Nonf. G	173.304, 173.306	Green	300 pounds.
Anhydrous ammonia. *See* Ammonia, anhydrous.				
*Compounds, cleaning, liquid (*containing hydrochloric (muriatic) acid*).	Cor. L	173.244, 173.263	White	10 pints.
Hydrogen, liquefied	F.G	No exemption, 173.304, 173.316.	Red Gas	Not accepted.
Liquefied nonflammable gases, n.o.s.	Nonf. G	173.304, 173.306, 173.314, 173.315.	Green	300 pounds.
Add				
Ammonia, anhydrous, liquefied	Nonf. G	173.304, 173.306, 173.314, 173.315.	Green	300 pounds.
Argon, liquefied	Nonf. G	No exemption, 173.304, 173.314, 173.315.	Green	300 pounds.
Cartridges, practice ammunition	Expl. C	No exemption, 173.101a		150 pounds.
Chlorine, liquefied	Nonf. G	173.304, 173.306, 173.314, 173.315.	Green	Not accepted.
Helium, liquefied	Nonf. G	No exemption, 173.304, 173.314, 173.315.	Green	300 pounds.
Hydrogen chloride, liquefied	Nonf. G	No exemption, 173.304, 173.314, 173.315.	Green	Not accepted.
Nitrogen, liquefied	Nonf. G	No exemption, 173.304, 173.314, 173.315.	Green	300 pounds.
Oxygen, liquefied	Nonf. G	No exemption, 173.304, 173.314, 173.315.	Green	300 pounds.
Sulfur dioxide, liquefied	Nonf. G	173.304, 173.306, 173.314, 173.315.	Green	300 pounds.

III. Part 173 would be amended as follows:

(A) By amending the index of §§ 173.21, 173.30, 173.79, 173.92, and adding a new item § 173.101a as follows:

Sec.
173.21 Prohibited packaging.
173.30 Loading and unloading of transport vehicles by shippers.
173.79 Jet thrust units (jato), class A explosives; rocket motors, class A explosives; igniters, jet thrust (jato), class A explosives; and igniters, rocket motor, class A explosives.
173.92 Jet thrust units (jato), class B explosives; rocket motors, class B explosives; igniters, jet thrust (jato), class B explosives; igniters, rocket motor, class B explosives; and starter cartridges, jet engine, class B explosives.
173.101a Practice cartridge ammunition.

(B) By amending § 173.21 to read as follows:

§ 173.21 Prohibited packaging.

(a) Shippers shall not offer for transportation any outside containers with inside packages, the contents of which, if mixed or polymerized, would be likely to cause a dangerous evolution of heat, pressure, or gas, or produce corrosive materials, which would in any manner significantly reduce the effectiveness of the container except as provided in §§ 173.152 (a), 173.242 (a), (b), and 173.301(a). However, these materials may be offered for transportation when properly stabilized or inhibited so as to meet the normal conditions of transport. Refrigeration may be used as a means of stabilization only when approved by the Department under § 173.22(b).

(b) Shippers shall not offer for transportation any package containing a cigarette lighter charged with fuel and equipped with an ignition element, any similar heating, lighting, or ignition device, or any self-lighting cigarette, unless the design and method of packaging, so far as they affect safety in transportation, have been approved by the Department under § 173.22(b).

(c) Prohibited articles, other than those listed in paragraphs (a) and (b) of this section, are listed in § 173.51.

(C) By amending § 173.30 to read as follows:

§ 173.30 Loading and unloading of transport vehicles by shippers.

(a) Any person who loads or unloads shipments of dangerous articles into or from transport vehicles shall comply with the following provisions of Parts 174 and 177 of this chapter:

(1) Rail: Sections 174.525 through 174.567 of this chapter.

(2) Highway: Sections 177.834 through 177.848 of this chapter.

* * * * *

(D) By adding the following new subparagraph (5) to § 173.31(a) to read as follows:

§ 173.31 Qualification, maintenance, and use of tank cars.

(a) * * *

(5) Continued use of existing non-DOT specification tank cars for cryogenic compressed gases is authorized only under the provisions of § 173.314(h).

* * * * *

(E) By adding the following new subparagraph (3) to § 173.32(a) to read as follows:

§ 173.32 Qualification, maintenance, and use of portable tanks.

(a) * * *

(3) Continued use of existing non-DOT specification portable tanks for cryogenic compressed gases is authorized only under the provisions of § 173.315(l).

* * * * *

(F) By adding the following new subparagraph (5) to § 173.33(b) to read as follows:

§ 173.33 Qualification, maintenance, and use of cargo tanks.

* * * * *

(b) * * *

(5) Continued use of cargo tanks for cryogenic compressed gases is authorized only under the provisions of § 173.315(l).

* * * * *

(G) By adding the following new subparagraph (4) to § 173.34(a) to read as follows:

§ 173.34 Qualification, maintenance, and use of cylinders.

(a) * * *

(4) Continued use of cylinders for cryogenic compressed gases is authorized only under the provisions of § 173.304(g).

* * * * *

(H) By amending § 173.51(q) to read as follows:

§ 173.51 Forbidden explosives.

* * * * *

(q) New explosives and explosive devices, except military explosives of a security classification approved by the U.S. Army Materiel Command; Commander, Naval Ordnance Systems Command, Department of the Navy; or Commander, Air Force Systems Command, or Commander, Air Force Logistics Command, Department of the Air Force.

* * * * *

(I) By amending § 173.53(t)(2)(ii) to read as follows:

§ 173.53 Definition of class A explosives.

* * * * *

(t) * * *

(2) * * *

(ii) Rocket motors, class A explosives may be shipped in a propulsive state only under conditions approved by the U.S. Army Materiel Command; Commander, Naval Ordnance Systems Command, Department of the Navy; or Commander, Air Force Systems Command; or Commander, Air Force Logistics Command, Department of the Air Force.

* * * * *

(J) By amending § 173.79 to read as follows:

§ 173.79 Jet thrust units (jato), class A explosives; rocket motors, class A explosives; igniters, jet thrust (jato), class A explosives; and igniters, rocket motor, class A explosives.

(a) Class A explosives covered by this section must be packaged in outside containers complying with the following specifications:

(1) Specification 14, 15A, 15E, or 16A (§ 178.165, 178.168, 178.172, or 178.185 of

this chapter) wooden boxes, or wooden boxes, fiberboard lined.

(2) Wooden boxes, wooden crates, or other containers of approved military specifications which comply with § 173.7(a).

(b) Jet thrust units, class A explosives or rocket motors, class A explosives, must not be shipped with igniters assembled therein unless shipped by, for, or to the Department of the Army, the Department of the Navy, or the Department of the Air Force.

(c) Jet thrust units class A explosives or rocket motors, class A explosives, may be packaged in the same outside shipping container with their separately packaged igniters (or igniter components), class A, B, or C explosives only in containers approved by the Department or of approved military specifications complying with § 173.7(a).

(d) Each outside package must be plainly marked "Jet Thrust Units, Class A Explosives," "Rocket Motors, Class A Explosives," "Igniters, Jet Thrust, Class A Explosives," or "Igniters, Rocket Motor, Class A Explosives," as appropriate.

(e) Class A explosives listed in this section must not be offered for transportation by rail express, except as provided in § 173.86 or 175.675.

(K) By amending § 173.86(a) to read as follows:

§ 173.86 Samples of explosives and explosive articles.

(a) New explosives (including fireworks and explosive devices), except as otherwise provided in this section and in subparagraph (1) of this paragraph must be examined by the Bureau of Explosives and approved by the Department as safe for transportation before being offered for shipment. New military explosives and chemical ammunition of the Department of the Army, Navy, or Air Force are exempt from Bureau of Explosives' examination and approval when tested and approved in accordance with Department of Defense Document titled, "Explosives Hazard Classification Procedures (TB 700–2, NAVORDINST 8020.3, TO 11A–1–47, DSAR 8220.1), dated May 19, 1967. Notification of classification as prepared by the Department of Defense under those procedures shall be furnished to the Department at least 30 days before the first transportation of the item so classified. Samples of explosives, except liquid nitroglycerin and new explosives for laboratory examination as provided in subparagraph (1) of this paragraph, may be offered for transportation by carriers by rail freight, highway, or water. For the purpose of Parts 171–179 of this chapter, "new explosive" means the product of a new factory or an explosive or explosive device of an essentially new composition or character made by any factory, including fireworks and explosive devices.

(1) A sample of not more than 5 pounds net weight of a new explosive may be offered for transportation by carriers by rail freight, highway, or water for laboratory examination by the Bureau of Explosives.

* * * * *

(L) By amending § 173.88(e)(2)(ii) to read as follows:

§ 173.88 Definition of class B explosives.

* * * * *

(e) * * *

(2) * * *

(ii) Rocket motors, class B explosives may be shipped in a propulsive state only under conditions approved by the U.S. Army Materiel Command; Commander, Naval Ordnance Systems Command, Department of the Navy; or Commander, Air Force Logistics Command, Department of the Air Force.

* * * * *

(M) By amending § 173.92 to read as follows:

§ 173.92 Jet thrust units (jato), class B explosives; rocket motors, class B explosives; igniters, jet thrust (jato), class B explosives; igniters, rocket motor, class B explosives; and starter cartridges, jet engine, class B explosives.

(a) Class B explosives covered by this section must be packaged in outside containers complying with the following specifications:

(1) Specifications 14, 15A, 15E, or 16A (§ 178.165, 178.168, 178.172, or 178.185 of this chapter) wooden boxes, or wooden boxes, fiberboard lined.

(2) Specification 15B (§ 178.169 of this chapter) wooden boxes. Authorized only for igniters, jet thrust, class B explosives, or igniters, rocket motors, class B explosives.

(3) Specification 23F (§ 178.214 of this chapter) fiberboard boxes. Authorized only for igniters, jet thrust, class B explosives; igniters, rocket motor, class B explosives; or starter cartridges, jet engine, class B explosives. Items must be packaged in tightly closed inside fiberboard boxes (at least 200-pound test (Mullen or Cady)) or metal containers. Starter cartridges, jet engine, must have igniter wires short-circuited when packed for shipment.

(4) Wooden boxes, wooden crates, or other containers of approved military specifications which comply with § 173.7(a).

(b) Jet thrust units, class B explosives, or rocket motors, class B explosives, must not be shipped with igniters assembled therein unless shipped by, for, or to, the Department of the Army, the Department of the Navy, or the Department of the Air Force.

(c) Jet thrust units, class B explosives, or rocket motors, class B explosives, may be packaged in the same outside shipping container with their separately packaged igniters (or igniter components), class A, B, or C explosives, only in containers approved by the Department or of approved military specifications complying with § 173.7(a).

(d) Each outside package must be plainly marked "Jet Thrust Units, Class B Explosives," "Rocket Motors, Class B Explosives," "Igniters, Jet Thrust, Class B Explosives," "Igniters, Rocket Motors, Class B Explosives," or "Starter Cartridges, Jet Engine, Class B Explosives" as appropriate.

(e) Label. Each outside container, when offered for transportation by rail express, must have securely and conspicuously attached thereto a square red label as described in § 173.412.

(N) By amending § 173.95 to read as follows:

§ 173.95 Rocket engines (liquid), class B explosives.

(a) Rocket engines must be packaged in outside containers complying with the following specifications:

(1) Specifications 14, 15A, 15E, or 16A (§ 178.165, 178.168, 178.172, or 178.185 of this chapter) wooden boxes, or wooden boxes, fiberboard lined.

(2) Wooden boxes or metal containers of approved military specifications which comply with § 173.7(a).

(b) Rocket engines (liquid), class B explosives, must not be shipped with igniters or initiators assembled therein unless shipped by, for, or to, the Department of the Army, the Department of the Navy, or the Department of the Air Force, and only when authorized by an appropriate Military Command (see § 173.51(q)), or by the Department.

(c) Rocket engines (liquid), class B explosives, may be packed in the same outside shipping container with separately packaged igniters, jet thrust, class B explosives when authorized by an appropriate Military Command (see § 173.51(q)), or when containers are approved by the Department.

(d) Each outside package must be plainly marked "Rocket Engines (Liquid), Class B Explosives.

(e) Except as provided in §§ 173.86 and 175.675, rocket engines (liquid), class B explosives, must not be offered for transportation by rail express.

(O) By adding the following new paragraph at the end of § 173.100:

§ 173.100 Definition of class C explosives.

* * * * *

(ff) "Practice cartridge ammunition" means a metal cartridge case containing a primer, a propelling charge (of not more than 500 grains of propellant powder) with a solid projectile or a projectile containing a smoke spotting charge, and is limited to ammunition designed to be fired from a pistol, revolver, rifle, or shotgun held by the hand or fired from the shoulder.

(P) by adding the following new section after § 173.101:

§ 173.101a Practice cartridge ammunition.

(a) Practice cartridge ammunition must be packaged in pasteboard of other inside boxes, or in partitions designed to fit snugly in the outside container, or must be packed in metal clips. The partitions and metal clips must be so designed as to protect the primers from accidental injury. The inside boxes, partitions, and metal clips must be packaged in securely closed strong outside wooden or fiberboard boxes or metal containers.

(1) Each outside container must be plainly marked "Practice Cartridge Ammunition."

(Q) By amending § 173.102(b) to read as follows:

§ 173.102 Explosive cable cutters, explosive power devices, class C, explosive release devices, or starter cartridges, jet engine, class C.

* * * * *

(b) Each outside container must be plainly marked "Explosive Cable Cutters," "Explosive Power Devices, Class C," "Explosive Release Devices," or "Starter Cartridges, Jet Engine, Class C Explosives," as appropriate, and "Handle Carefully—Keep Fire Away."

(R) By amending § 173.115(a) to read as follows:

§ 173.115 Flammable liquid; definition.

(a) For the purpose of Parts 171–179 of this chapter—

(1) "Flammable liquid" means any liquid having a flash point of 110° F or lower (open-cup) or 100° F or lower (closed-cup) and having a vapor pressure not exceeding 40 p.s.i.a. at 100° F.

(2) "Flash point" means the minimum temperature of the liquid at which it gives off vapor sufficient to form an ignitable mixture with the air near the surface of the liquid or within the container used as determined by the test procedure specified in this paragraph.

(3) "Open-cup" means the method of determination of flashpoint as specified in the Standard Method of Test for Flash Point of Volatile Flammable Materials by Tag Open-Cup Tester (ASTM D–1310–63, American Society for Testing and Materials, 1916 Race Street, Philadelphia, Pa.).

(4) "Closed-cup" means the method of determining flash point as specified in the Standard Method of Test for Flash Point by the Tag Closed Tester (ASTM D–56–61, American Society for Testing and Materials, 1916 Race Street, Philadelphia, Pa.).

* * * * *

(S) By amending § 173.188(a)(4) to read as follows:

§ 173.188 Phosphoric anhydride.

(a) * * *

(4) Specification 6K (§ 178.101 of this chapter). Metal drums. Authorized only for carload or truckload shipments by rail freight or highway and must be loaded by the shipper and unloaded by the consignee or his duly authorized agent. Authorized net weight not over 600 pounds. If the gross weight is more than 480 pounds, the shipper must have established that the drums meet the drop test requirements prescribed in § 178.101–11 of this chapter.

* * * * *

(T) By amending the introductory text of paragraph (a) of § 173.220 to read as follows:

§ 173.220 Magnesium or zirconium scrap consisting of borings, clippings, shavings, sheets, turnings, or scalpings, and magnesium metallic (other than scrap), powdered pellets, turnings, or ribbon.

(a) Magnesium or zirconium scrap consisting of borings, shavings, or turnings, must be packed in closed metal barrels or drums, wooden barrels, metal pails, fiber drums, or four-ply paper bags. Paper bags are not authorized for less-than-carload or less-than-truckload shipments.

* * * * *

(U) By adding the following new paragraph at the end of § 173.245(a):

§ 173.245 Acids or other corrosive liquids not specifically provided for.

(a) * * *

(27) Specification 33A (§ 178.150 of this chapter). Polystyrene case (nonreusable containers) having one inside glass bottle of not over 16 ounces capacity.

(V) By adding the following new paragraph at the end of § 173.271(a):

§ 173.271 Phosphorus oxybromide, phosphorus oxychloride, phosphorus trichloride, and thiophosphoryl chloride.

(a) * * *

(18) Specification 5B (§ 178.82 of this chapter). Metal barrels or drums lined with a material which is compatible with the commodity. Authorized for thiophosphoryl chloride only.

(W) By amending § 173.276(a) (4) and (5) to read as follows:

§ 173.276 Anhydrous hydrazine and hydrazine solution.

(a) * * *

(4) Specification 103C–W or 111A100–W–6 (§§ 179.200 and 179.201 of this chapter). Tank cars having tanks of Type 304L or 347 stainless steel with molybdenum content not exceeding one-half of 1 percent. The safety relief valve on Specification 103C–W tank car tanks may have a start-to-discharge pressure of not more than 45 p.s.i. in place of 35 p.s.i. Specification 111A100–W–6 tanks must not be equipped with bottom outlets. Vapor space in tanks must be filled with nitrogen gas at atmospheric pressure.

(5) Specification 103A–AL–W (§§ 179.200 and 179.201 of this chapter). Tank cars. The safety relief valve on tanks may have a start-to-discharge pressure of not more than 45 p.s.i. in place of 35 p.s.i. Vapor space in tanks must be filled with nitrogen gas at atmospheric pressure. Authorized for anhydrous hydrazine only.

* * * * *

(X) By amending § 173.300 heading and paragraph (a); the introductory text of paragraph (b); paragraphs (c), (d), and (e) to read as follows:

§ 173.300 Definitions.

For the purpose of Parts 171–179 of this chapter—

(a) "Compressed gas" means any material for which the absolute vapor or gas pressure in its container exceeds 40 p.s.i.a. as shipped, or would exceed 40 p.s.i.a. if the temperature of that material, unvented, were allowed to reach 100° F.

(b) "Flammable compressed gas" means any compressed gas which meets any of the following test criteria:

* * * * *

(c) "Cryogenic compressed gas" means any liquefied compressed gas for which the absolute pressure in its container is maintained below that of its vapor pressure at 70° F., by means of mechanical heat removal, evaporative cooling, or thermal inertia.

(d) "Liquefied compressed gas" means any compressed gas which, under the charged pressure, is partially liquid at a temperature of 70° F.

(e) "Compressed gas in solution" means a nonliquefied compressed gas which is dissolved in a solvent.

* * * * *

(Y) By canceling Note 9 to § 173.304(a)(2) table, amending paragraph (b)(2) and adding new paragraph (g) to read as follows:

§ 173.304 Charging of cylinders with liquefied compressed gas.

* * * * *

(b) * * *

(2) The pressure in ICC–4L cylinders (§ 178.57 of this chapter) must be limited by a pressure controlling valve so sized and set as to limit the pressure to one and one-fourth times the marked service pressure. However, for hydrogen the valve shall limit the pressure to not more than 17 p.s.i.g. The design or installation of the pressure controlling valve shall be such as to assure that it will not malfunction because of frost accumulation. The liquid portion of the gas must not completely fill the cylinder. For ICC–4L cylinders insulated by a vacuum, the pressure control valve must be set at least 15 p.s.i. lower than one and one-fourth times the marked service pressure. The other paragraphs of this section do not apply to ICC–4L cylinders.

* * * * *

(g) Cryogenic compressed gases may not be transported in cylinders after [to be inserted], unless the Secretary, Hazardous Materials Regulations Board, Department of Transportation, Washington, D.C. 20590, receives written notice thereof from the shipper at least 90 days prior to the date the transportation is to begin. If the Department determines that the transportation of the materials would be unduly hazardous in the manner proposed, it will, before expiration of the 90 days, order the shipper in writing not to ship the materials until further notice. As soon as practicable after issuance of such an order, the Department will initiate appropriate action to determine whether and in what manner the materials may be transported in cylinders without undue hazard. The written notice submitted to the Department by

the shipper must state the chemical name, common name, hazard classification, properties, and characteristics of the cryogenic compressed gases to be transported. It must also include design specifications, including operating pressures, for the cylinders.

(Z) By adding the following new paragraph (h) to § 173.314 to read as follows:

§ 173.314 Requirements for compressed gases in tank cars.

* * * * *

(h) Cryogenic compressed gases may not be transported in tank cars after [to be inserted], unless the Secretary, Hazardous Materials Regulations Board, Department of Transportation, Washington, D.C. 20590, receives written notice thereof from the shipper at least 90 days prior to the date the transportation is to begin. If the Department determines that the transportation of the materials would be unduly hazardous in the manner proposed, it will, before expiration of the 90 days, order the shipper in writing not to ship the materials until further notice. As soon as practicable after issuance of such an order, the Department will initiate appropriate action to determine whether and in what manner the materials may be transported in tank cars without undue hazard. The written notice submitted to the Department by the shipper must state the chemical name, common name, hazard classification, properties, and characteristics of the cryogenic compressed gases to be transported. It must also include design specifications, including operating pressures, for the tank cars.

(AA) By adding the following new paragraph (l) to § 173.315 to read as follows:

§ 173.315 Compressed gases in cargo tanks and portable tank containers.

* * * * *

(l) Cryogenic compressed gases may not be transported in cargo tanks or portable tanks after [to be inserted], unless the Secretary, Hazardous Materials Regulations Board, Department of Transportation, Washington, D.C. 20590, receives written notice thereof from the shipper at least 90 days prior to the date the transportation is to begin. If the Department determines that the transportation of the materials would be unduly hazardous in the manner proposed, it will, before expiration of the 90 days, order the shipper in writing not to ship the materials until further notice. As soon as practicable after issuance of such an order, the Department will initiate appropriate action to determine whether and in what manner the materials may be transported in cargo tanks or portable tanks without undue hazard. The written notice submitted to the Department by the shipper must state the chemical name, common name, hazard classification, properties, and characteristics of the cryogenic compressed gases to be transported. It must also include design specifications, including operating pressures, for the cargo tanks or portable tanks.

(BB) By adding the following new subparagraph at the end of § 173.316(a):

§ 173.316 Liquefied hydrogen.

(a) * * *

(2) Specification ICC–4L (§ 178.57 of this chapter) cylinders marked "For Liquid Hydrogen." The maximum filling density, based on container capacity at minus 423° F. is 6.7 percent. Cylinders must be constructed, insulated, and maintained so that during transportation the normal evaporation rate (NER) and the total rate of venting of hydrogen gas shall not exceed 1 cubic foot (at normal temperature and pressure) per minute. The NER in standard cubic feet per minute shall be marked on the top head or valve protection band of the container in letters at least ½-inch high. At, or not more than 2 hours before loading onto open-top motor vehicles, the pressure shall be manually vented to a pressure not exceeding 8 p.s.i.g. Transportation is limited to private and contract motor carriers only and to direct movement from point of origin to destination. (See also § 177.840 (a)(1) of this chapter.)

(CC) By amending § 173.333(a)(1) to read as follows:

§ 173.333 Phosgene or diphosgene.

(a) * * *

(1) As prescribed in § 173.328 of this part; filling density (see § 173.304(a)(2) Table Note 1) must not exceed 125 percent and a cylinder must not contain more than 150 pounds phosgene.

* * * * *

(DD) By amending § 173.368 (a) and (b) to read as follows:

§ 173.368 Arsenical dust, arsenical flue dust, and other poisonous noncombustible byproduct dusts; also arsenic trioxide, calcium arsenate, and sodium arsenate.

(a) Arsenical dust, arsenical flue dust, and other poisonous noncombustible byproduct dusts from metal recovery operations not subject to dangerous spontaneous heating, and arsenic trioxide, calcium arsenate, or sodium arsenate, when delivery is made to plants with private sidings only, may, in addition to containers prescribed in § 173.367 of this part, be shipped in bulk in the following kinds of cars, if those cars are assigned exclusively to this type of service: (1) Sift-proof, self-clearing, hopper or bottom outlet steel cars, (2) sift-proof all steel flat bottom gondola cars with fixed sides and ends equipped with waterproof and dust-proof wooden or steel covers well secured in place for all openings, and (3) sift-proof box cars of all steel construction. Cars assigned exclusively to this service must be marked "Arsenical Service Only," in addition to other required markings, and are not subject to § 174.566(b) of this chapter while in that service.

(b) Arsenical dust and arsenic trioxide may, in addition to the containers specified in § 173.367, be shipped in bulk in motor vehicles with steel, sift-proof, self-clearing hopper-type or dump-type bodies, with waterproof and dust-proof covers, well secured in place, and which are assigned exclusively to this type of service. These vehicles shall be marked "Arsenical Service Only," in addition to other required markings, and are not subject to § 177.841(a)(2) of this chapter while in that service.

(EE) By amending § 173.370(c)(1) to read as follows:

§ 173.370 Cyanides, or cyanide mixtures, except cyanide of calcium and mixtures thereof.

* * * * *

(c) * * *

(1) As prescribed in paragraph (a)(2), (3), (4), (6), (9), or (11) of this section.

* * * * *

(FF) By amending § 173.377(a)(5) to read as follows:

§ 173.377 Hexaethyl tetraphosphate mixtures, methyl parathion mixtures, organic phosphate compound mixtures, n.o.s., parathion mixtures, tetraethyl dithio pyrophosphate mixtures, and tetraethyl pyrophosphate mixtures, dry.

(a) * * *

(5) Specification 21C (§ 178.224 of this chapter). Fiber drums. Authorized net weight not over 250 pounds.

* * * * *

(GG) By amending § 173.384(a)(2) to read as follows:

* * * * *

§ 173.384 Monochloracetone, stabilized.

(a) * * *

(2) Specification 15A, 15B, 15C, or 16A (§ 178.168, 178.169, 178.170, or 178.185 of this chapter). Wooden boxes with inside glass bottles or tubes in metal cans hermetically sealed or with covers securely taped. The metal cans must be in corrugated fiberboard cartons, Specification 2C (§ 178.22 of this chapter). Bottles must not contain more than 1 pound of liquid each, must not be filled to more than 95 percent capacity, must be tightly and securely closed, and must be cushioned in cans with at least one-half inch of absorbent material. Cans must be made of metal at least 32-gauge U.S. standard. The total amount of liquid in an outside box must not exceed 24 pounds.

(HH) By amending § 173.385(a)(1) to read as follows:

§ 173.385 Tear gas grenades, tear gas candles, or similar devices.

(a) * * *

(1) Specification 15A, 15B, or 15C (§ 178.168, 178.169, or 178.170 of this chapter). Metal-strapped wooden boxes. Functioning elements not assembled in grenades or devices must be in a separate compartment of these boxes, or in inside or separate outside boxes, Specification 15A, 15B, or 15C, and must be so packed and cushioned that they may not come in contact with each other or with the walls of boxes during transportation. Not more than 50 grenades and 50 functioning devices shall be packed in one outside

container and the gross weight of the package must not exceed 75 pounds.

* * * * *

IV. Part 174 would be amended as follows:

(A) By amending the chart in § 174.538(a) by adding the following new footnote and adding a footnote "f" reference at the intersection of vertical and horizontal columns a, b, c, d, e, f, and g, respectively.

§ 174.538 Loading and storage chart of explosives and other dangerous articles.

(a) * * *

f Normal uranium, depleted uranium, and thorium metal in solid form may also be loaded and transported with articles named in vertical and horizontal columns a, b, c, d, e, f, and g.

* * * * *

(B) By amending § 174.566(b) to read as follows:

§ 174.566 Cleaning cars.

* * * * *

(b) Except for cars used exclusively in this service under § 173.194(a) of this chapter, after unloading of poisons or potassium permanganate, cars must be thoroughly flushed out with water. When necessary to remove cars assigned exclusively to this service under § 173.368(a) of this chapter, all detectable traces of arsenical materials shall be removed from the cars by flushing with water, or by other appropriate method, and the marking removed.

* * * * *

(C) By amending § 174.589(j)(3) to read as follows:

§ 174.589 Handling cars.

* * * * *

(j) * * *

(3) Any car, trailer-on-flat-car, or container placarded "Explosives."

* * * * *

V. Part 177 would be amended as follows:

(A) By amending § 177.800(a) to read as follows:

§ 177.800 Purpose of regulations in Parts 171–179 of this chapter.

(a) To promote the uniform enforcement of law and to minimize the dangers to life and property incident to the transportation of hazardous materials by common, contract, and private carriers, by motor vehicle engaged in interstate or foreign commerce, the regulations in Parts 171–179 of this chapter are prescribed to define these materials for motor vehicle transportation purposes, and to state the precautions that must be observed by the carrier in handling them in transit. It is the duty of each such carrier to make the prescribed regulations effective and to thoroughly instruct employees in relation thereto.

(B) By amending § 177.801(a) to read as follows:

§ 177.801 Scope of regulations in Parts 171–179 of this chapter.

(a) Hazardous materials, except those that may not be accepted and transported under Parts 171–179 of this chapter, may be accepted and transported by common, contract, and private carriers engaged in interstate or foreign commerce, if they are in proper condition for transportation and are certified as complying with Parts 171–179 of this chapter, and if the method of manufacture, packing, and storage, so far as they affect safety in transportation, are open to inspection by an authorized representative of the initial carrier, the Bureau of Explosives, or the Department. Shipments of hazardous materials not in proper condition for transportation, not loaded or stayed as required, or not certified as to proper packaging, marking, and description as required in Parts 171–179 of this chapter, must not be accepted for transportation or transported.

(C) By adding the following new paragraph at the end of § 177.834:

§ 177.834 General requirements.

* * * * *

(m) When vehicles have been loaded solely by the shipper, the shipper is responsible for complying with §§ 177.834 through 177.848.

(D) By amending § 177.840(a)(1) to read as follows:

§ 177.840 Compressed gases.

(a) * * *

(1) *Cylinders.* To prevent their overturning, cylinders containing compressed gases shall be securely lashed in an upright position; loaded into racks securely attached to the motor vehicle; packed in boxes or crates of such dimensions as to prevent their overturning; or loaded in a horizontal position. Specification ICC–4L cylinders must be loaded in an upright position and be securely braced. Specification ICC–4L cylinders containing liquid hydrogen may be transported only in suitable racks or supports with clamps or securing bands to hold them upright under conditions normally incident to transportation and when subjected to two "G" acceleration in any horizontal direction, mounted on motor vehicles with open bodies. The number of liquid hydrogen cylinders on one motor vehicle shall be such that the total of the normal venting rates as marked on the cylinders does not exceed 60 cubic feet an hour. No motor vehicle loaded with liquid hydrogen cylinders may be driven through any tunnel.

* * * * *

(E) By adding the following new subparagraphs at the end of § 177.841(a):

§ 177.841 Poisons.

* * * * *

(a) * * *

(1) The motor vehicles shall be marked in accordance with § 173.368(b) of this chapter.

(2) Before any motor vehicle may be used for transporting any other articles, all detectable traces of arsenical materials shall be removed therefrom by flushing with water, or by other appropriate method, and the marking removed.

* * * * *

(F) By amending the chart in § 177.848(a) by adding the following new footnote and adding footnote "f" reference at the intersection of vertical and horizontal columns a, b, c, d, e, f, and g, respectively:

§ 177.848 Loading and storage chart of explosives and other dangerous articles.

(a) * * *

f Normal uranium, depleted uranium, and thorium metal in solid form may also be loaded and transported with articles named in vertical and horizontal columns a, b, c, d, e, f, and g.

* * * * *

VI. Part 178 would be amended as follows:

(A) By amending the introductory language of § 178.37–5(a) to read as follows:

§ 178.37 Specification 3AA; seamless steel cylinders made of definitely prescribed steels or 3AAX; seamless steel cylinders made of definitely prescribed steels of capacity over 1,000 pounds water volume.

§ 178.37–5 Authorized steel.

(a) Open-hearth, basic oxygen (see note 3), or electric steel of uniform quality. The following chemical analyses are authorized (see note 1):

* * * * *

(B) By amending § 178.48–5(a) to read as follows:

§ 178.48 Specification 4; forge welded steel cylinders.

§ 178.48–5 Steel.

(a) Open-hearth, basic oxygen, or electric steel of uniform quality. Content percent for the following not over: Carbon, 0.25; phosphorus, 0.045; sulfur, 0.050. However, Bessemer steel with phosphorus not over 0.11 percent is authorized when carbon content is 0.20 percent or less.

(C) By amending § 178.48–5(a) to read as follows:

§ 178.49 Specification 4A; forge welded steel cylinders.

§ 178.49–5 Steel.

(a) Open-hearth, basic oxygen, or electric steel of uniform quality. Content percent for the following not over: Carbon, 0.25; phosphorus, 0.045; sulfur, 0.050.

(D) By amending § 178.51–20 to read as follows:

§ 178.51 Specification 4BA; welded or brazed steel cylinders made of definitely prescribed steels.

§ 178.51–20 Authorized steel.

(a) Open-hearth, basic oxygen, or electric steel. The following chemical composition limits are based on ladle analysis and are authorized:

Designation	Chemical composition, percent—ladle analysis		
	Grade 1[1]	Grade 2[1,2]	Grade 3[2,4,5]
Carbon	0.10/0.20	0.24 maximum	0.22 maximum.
Manganese	1.10/1.60	0.50/1.00	1.25 maximum.
Phosphorus, maximum	0.04	0.04	
Sulfur, maximum	0.05	0.05	0.05.
Silicon	0.15/0.30	0.30 maximum	
Copper, maximum	0.40		
Columbium		0.01/0.04	
Heat treatment authorized	[3]	[3]	[3].
Maximum stress (p.s.i.)	35,000	35,000	35,000.

[1] Addition of other elements to obtain alloying effect is not authorized.
[2] Ferritic grain size 6 or finer according to ASTM E112–63.
[3] Any suitable heat treatment in excess of 1,100° F., except that liquid quenching is not permitted.
[4] Other alloying elements may be added and shall be reported.
[5] For compositions with a maximum carbon content of 0.15 percent on ladle analysis, the maximum limit for manganese on ladle analysis may be 1.40 percent.

(b) A heat of steel made under any of the above grades, the ladle analysis of which is slightly out of the specified range, is acceptable if the check analysis is within the variations listed in the following table or the variation is approved by the Department:

CHECK ANALYSIS TOLERANCES

Element	Limit or maximum specified (percent)	Tolerance (percent) over the maximum limit or under the minimum limit	
		Under minimum limit	Over Maximum limit
Carbon	To 0.15 inclusive	0.02	0.03
	Over 0.15 to 0.40 inclusive	0.03	0.04
Manganese	To 0.60 inclusive	0.03	0.03
	Over 0.60 to 1.15 inclusive	0.04	0.04
	Over 1.15 to 2.50 inclusive	0.05	0.05
Phosphorus[1]	All ranges		0.01
Sulfur	All ranges		0.01
Silicon	To 0.30 inclusive	0.02	0.03
	Over 0.30 to 1.00 inclusive	0.05	0.05
Copper	To 1.00 inclusive	0.03	0.03
	Over 1.00 to 2.00 inclusive	0.05	0.05
Nickel	To 1.00 inclusive	0.03	0.03
	Over 1.00 to 2.00 inclusive	0.05	0.05
Chromium	To 0.90 inclusive	0.03	0.03
	Over 0.90 to 2.10 inclusive	0.05	0.05
Molybdenum	To 0.20 inclusive	0.01	0.01
	Over 0.20 to 0.40 inclusive	0.02	0.02
Zirconium	All ranges	0.01	0.05
Columbium	To 0.04 inclusive	0.005	0.01
Aluminum	Over 0.10 to 0.20 inclusive	0.04	0.04
	Over 0.20 to 0.30 inclusive	0.05	0.05

[1] Rephosphorized steels not subject to check analysis for phosphorus.

(E) By amending § 178.52–5(a) to read as follows:

§ 178.52 Specification 4C; welded and brazed steel cylinders.

§ 178.52–5 Steel.

(a) Open-hearth, basic oxygen, or electric steel of uniform quality. Content percent for the following not over: Carbon, 0.25; phosphorus, 0.045; sulphur, 0.050.

(F) By amending § 178.55–5(a) to read as follows:

§ 178.55 Specification 4B240ET; welded and brazed cylinders made from electric resistance welded tubing.

§ 178.55–5 Steel.

(a) Open-hearth, basic oxygen, or electric steel of uniform quality. Plain carbon steel content percent for the following not over: Carbon, 0.25; phosphorus, 0.045; sulphur, 0.050. The addition of other elements for alloying effect is prohibited.

(G) By amending the introductory text of § 178.56–20(a) to read as follows:

§ 178.56 Specification 4AA480; welded steel cylinders made of definitely prescribed steels.

§ 178.56–20 Authorized steel.

(a) Open-hearth, basic oxygen, or electric steel of uniform quality. The following chemical composition limits are based on ladle analysis and are authorized. (See footnote 1 of table.):

* * * * *

(H) By amending § 178.57–2 (a) and (c) to read as follows:

§ 178.57 Specification 4L; welded cylinders insulated.

§ 178.57–2 Type, size, service pressure,[1] and service temperature.[2]

(a) *Type and size.* Must be fusion welded; not over 1,000 pounds water capacity (nominal). For liquid hydrogen service, the cylinders must be designed to stand on end, with the axis of the cylindrical portion vertical.

* * * * *

(c) The service temperature shall be minus 320° F. or colder. For liquid hydrogen service, the service temperature shall be minus 423° F. or colder.

(I) By amending § 178.57–8(c) to read as follows:

§ 178.57–8 Manufacture.

* * * * *

(c) The surface of the cylinder must be insulated. The insulating material must be fire resistant. The insulation must be covered with a steel jacket of not less than 0.060-inch thickness so constructed that moisture cannot come in contact with the insulating material. The construction must be such that the total heat transfer from the atmosphere at ambient temperature to the contents of the cylinder shall not exceed 0.0005 b.t.u. per hour per degree Fahrenheit differential in temperature per pound of water capacity of the cylinder. For liquid hydrogen service, the total heat transfer, with a temperature difference of 520° F. shall not exceed that required to evaporate 1 percent of the contents in 24 hours.

(J) By amending § 178.57–13(a) to read as follows:

§ 178.57–13 Safety devices and pressure control valves.

(a) As prescribed in §§ 173.34(d) and 173.304(b)(2) of this chapter.

(K) By amending § 178.57–20(a)(4) to read as follows; by redesignating subparagraphs (a) (5) and (6) as (a) (6) and (7), respectively; and by adding a new subparagraph (a)(5) and paragraph (c) to read as follows:

§ 178.57–20 Marking.

(a) * * *

(4) Maximum weight of content (Maximum content 00#) on cylinders having a service temperature below minus 320° F. only; location near symbol.

Examples:

Service temperature minus 320° F.	*Service temperature below minus 320° F.*	
	Not for Liquid hydrogen	*For Liquid hydrogen only*
ICC–4L200	ICC–4L200	ICC–4L200
1234	ST –423° F.	ST –423° F.
XY	1234	1234
	XY	XY
	Max. content 00#	Max. hydrogen 00#

(5) On cylinders conforming to all requirements in this chapter for transporting liquid hydrogen, the legend "For Liquid Hydrogen Only," and the maximum weight of hydrogen at 6.7 percent filling density based on the container volume at minus 423° F. On cylinders to be used for liquid hydrogen exclusively, this marking may replace the marking specified in subparagraph (4) of this paragraph; on cylinders for hydrogen and other contents optionally, it shall follow the marking specified in subparagraph (4) of this paragraph.

(6) Inspector's official mark, date of test (such as 10-55 for October 1955) near serial number.

(7) Size of markings at least ¼-inch high.

(c) On cylinders for transporting liquid hydrogen, the normal hydrogen venting rate shall be painted in characters at least ½-inch high on a contrasting background on the top or shoulder of the jacket so as to be readily legible from above the cylinder.

§ 178.57–22 [Amended]

(L) By amending § 178.57–22(a) by inserting the words "maximum weight of hydrogen * * * (pounds)" immediately after the words "maximum weight of content * * * (pounds)".

(M) By amending § 178.60–4 to read as follows:

§ 178.60 Specification 8AL; steel cylinders with approved porous filling for acetylene.

§ 178.60–4 Authorized steel.

(a) Open-hearth, basic oxygen, or electric steel of uniform quality. The following chemical composition limits are based on ladle analysis and are authorized:

Designation	Chemical composition, percent—ladle analysis		
	Grade 1 [1]	Grade 2 [1 2]	Grade 3 [2 4 5]
Carbon	0.10/0.20	0.24 maximum	0.22 maximum.
Manganese	1.10/1.60	0.50/1.00	1.25 maximum.
Phosphorus, maximum	0.04	0.04	
Sulfur, maximum	0.05	0.05	0.05.
Silicon	0.15/0.30	0.30 maximum	
Copper, maximum	0.40		
Columbium		0.01/0.04	
Heat treatment authorized	[3]	[3]	[3].
Maximum stress (p.s.i.)	35,000	35,000	35,000.

[1] Addition of other elements to obtain alloying effect is not authorized.
[2] Ferritic grain size 6 or finer according to ASTM E112–63.
[3] Any suitable heat treatment in excess of 1,100° F., except that liquid quenching is not permitted.
[4] Other alloying elements may be added and shall be reported.
[5] For compositions with a maximum carbon content of 0.15 percent on ladle analysis, the maximum limit for manganese on ladle analysis may be 1.40 percent.

(b) A heat of steel made under any of the above grades, the ladle analysis of which is slightly out of the specified range, is acceptable if the check analysis is within the variations listed in the following table or if the variation is approved by the Department:

CHECK ANALYSIS TOLERANCES

Element	Limit or maximum specified (percent)	Tolerance (percent) over the maximum limit or under the minimum limit	
		Under minimum limit	Over maximum limit
Carbon	To 0.15 inclusive	0.02	0.03
	Over 0.15 to 0.40 inclusive	0.03	0.04
Manganese	To 0.60 inclusive	0.03	0.03
	Over 0.60 to 1.15 inclusive	0.04	0.04
	Over 1.15 to 2.50 inclusive	0.05	0.05
Phosphorus [1]	All ranges		0.01
Sulphur	All ranges		0.01
Silicon	To 0.30 inclusive	0.02	0.03
	Over 0.30 to 1.00 inclusive	0.05	0.05
Copper	To 1.00 inclusive	0.03	0.03
	Over 1.00 to 2.00 inclusive	0.05	0.05
Nickel	To 1.00 inclusive	0.03	0.03
	Over 1.00 to 2.00 inclusive	0.05	0.05
Chromium	To 0.90 inclusive	0.03	0.03
	Over 0.90 to 2.10 inclusive	0.05	0.05
Molybdenum	To 0.20 inclusive	0.01	0.01
	Over 0.20 to 1.40 inclusive	0.02	0.02
Zirconium	All ranges	0.01	0.05
Columbium	To 0.04 inclusive	0.005	0.01
Aluminum	Over 0.10 to 0.20 inclusive	0.04	0.04
	Over 0.20 to 0.30 inclusive	0.05	0.05

[1] Rephosphorized steels not subject to check analysis for phosphorus.

(N) By amending § 178.61–5 to read as follows:

§ 178.61 Specification 4BW; welded steel cylinders made of definitely prescribed steels with electric-arc welded longitudinal seam.

§ 178.61–5 Authorized steel.

(a) Open-hearth, basic oxygen, or electric steel of uniform quality. The following chemical composition limits are based on ladle analysis and are authorized except as provided in paragraph (c) of this section:

Designation	Chemical composition, percent—ladle analysis		
	Grade 1 [1]	Grade 2 [1 2]	Grade 3 [2 4 5]
Carbon	0.10/0.20	0.24 maximum	0.22 maximum.
Manganese	1.10/1.60	0.50/1.00	1.25 maximum.
Phosphorus, maximum	0.04	0.04	
Sulfur, maximum	0.05	0.05	0.05.
Silicon	0.15/0.30	0.30 maximum	
Copper, maximum	0.40		
Columbium		0.01/0.04	
Heat treatment authorized	[3]	[3]	[3].
Maximum stress (p.s.i.)	35,000	35,000	35,000.

[1] Addition of other elements to obtain alloying effect is not authorized.
[2] Ferritic grain size 6 or finer according to ASTM E112–63.
[3] Any suitable heat treatment in excess of 1,100° F. except that liquid quenching is not permitted.
[4] Other alloying elements may be added and shall be reported.
[5] For compositions with a maximum carbon content of 0.15 percent on ladle analysis, the maximum limit for manganese on ladle analysis may be 1.40 percent.

(b) A heat of steel made under any of the above grades, the ladle analysis of which is slightly out of the specified range, is acceptable if the check analysis is within the variations listed in the following table or if the variation is approved by the Department:

CHECK ANALYSIS TOLERANCES

Element	Limit or maximum specified (percent)	Tolerance (percent) over the maximum limit or under the minimum limit	
		Under minimum limit	Over maximum limit
Carbon	To 0.15 inclusive	0.02	0.03
	Over 0.15 to 0.40 inclusive	0.03	0.04
Manganese	To 0.60 inclusive	0.03	0.03
	Over 0.60 to 1.15 inclusive	0.04	0.04
	Over 1.15 to 2.50 inclusive	0.05	0.05
Phosphorus [1]	All ranges		0.01
Sulphur	All ranges		0.01
Silicon	To 0.30 inclusive	0.02	0.03
	Over 0.30 to 0.90 inclusive	0.05	0.05
Copper	To 1.00 inclusive	0.03	0.03
	Over 1.00 to 2.00 inclusive	0.05	0.05
Nickel	To 1.00 inclusive	0.03	0.03
	Over 1.00 to 2.00 inclusive	0.05	0.05
Chromium	To 0.90 inclusive	0.03	0.03
	Over 0.90 to 2.10 inclusive	0.05	0.05
Molybdenum	To 0.20 inclusive	0.01	0.01
	Over 0.20 to 0.40 inclusive	0.02	0.02
Zirconium	All ranges	0.01	0.05
Columbium	To 0.04 inclusive	0.005	0.01
Aluminum	Over 0.10 to 0.20 inclusive	0.04	0.04
	Over 0.20 to 0.30 inclusive	0.05	0.05

[1] Rephosphorized steels not subject to check analysis for phosphorus.

(c) *Head.* Material for heads shall be the same as paragraph (a) of this section or shall be open-hearth, electric, or basic oxygen steel of uniform quality. Content percent of the following not over: Carbon, 0.25; manganese, 0.60; phosphorus, 0.045; sulphur, 0.050.

(1) Heads shall be hemispherical or ellipsoidal in shape with a maximum ratio of 2 :1. If low carbon steel is used, thickness of such a head shall be determined by using a maximum wall stress of 24,000 p.s.i. in the formula specified in § 178.61–10(a).

(O) By amending § 178.63–5(a) to read as follows:

§ 178.63 Specification 9; inside containers, seamless or welded or brazed steel cylinders.

§ 178.63–5 Steel.

(a) Open-hearth, basic oxygen, or electric steel of uniform quality. Content percent for the following not over: Carbon, 0.150; phosphorus, 0.45; sulphur, 0.055.

(P) By amending § 178.66–5(a) to read as follows:

§ 178.66 Specification 40; inside containers, nonrefillable seamless or welded or brazed steel cylinders.

§ 178.66–5 Steel.

(a) Open-hearth, basic oxygen, or electric steel of uniform quality. Content percent for the following not over: Carbon, 0.150; phosphorus, 0.45; sulphur, 0.055.

(Q) By amending § 178.67–5(a) to read as follows:

§ 178.67 Specification 41; inside containers, nonrefillable seamless or welded or brazed steel cylinders.

§ 178.67–5 Steel.

(a) Open-hearth, basic oxygen, or electric steel of uniform quality. Content percent for the following not over: Carbon, 0.150; phosphorus, 0.045; sulphur, 0.055.

(R) By amending § 178.82–9(b) to read as follows:

§ 178.82 Specification 5B; steel barrels or drums.

§ 178.82–9 Closures.

* * * * *

(b) Closing part (plug, cap, plate, etc., see Note 1), if metal (see paragraph (c) of this section), must be as thick as prescribed for head of container. However, this does not apply to containers of 12 gallons or less if the opening to be closed is not more than 2.7 inches in diameter. If unthreaded cap is used it must have an outside sealing device which cannot be removed without destroying the cap or sealing device (Note 1 remains unchanged.)

* * * * *

(S) By amending § 178.115–8(b) to read as follows:

§ 178.115 Specification 17C; steel drums.

§ 178.115–8 Closures.

* * * * *

(b) Closing part (plug, cap, plate, etc., see Note 1), if metal, must be as thick as prescribed for head of container. However, this does not apply to containers of 12 gallons or less if the opening to be closed is not more than 2.7 inches in diameter. If unthreaded cap is used it must have an outside sealing device which cannot be removed without destroying the cap or sealing device. (Note 1 remains unchanged.)

* * * * *

(T) By amending § 178.116–8(b) to read as follows:

§ 178.116 Specification 17E; steel drums.

§ 178.116–8 Closures.

* * * * *

(b) Closing part (plug, cap, plate, etc., see Note 1), if metal (see paragraph (c) of this section), must be as thick as prescribed for head of container. However, this does not apply to containers of 12 gallons or less if the opening to be closed is not more than 2.7 inches in diameter. If unthreaded cap is used it must have an outside sealing device which cannot be removed without destroying the cap or sealing device. (Note 1 remains unchanged.)

* * * * *

§ 178.150–3 [Amended]

(U) By striking out the figure "¾" in the first column of the table in § 178.150–3(a)(2) and inserting the figure "⅝" in place thereof.

(V) By amending § 178.337–3 by amending the heading and paragraphs (a) and (b) to read as follows and by adding the following new paragraph (c):

§ 178.337 Specification MC 331; cargo tanks constructed of steel, primarily for transportation of compressed gases as defined in the Compressed Gas Section.

§ 178.337–3 Thickness of tank metal.

(a) Tank metal thickness shall be as required by the Code and paragraph (b) of this section, except that metal of thickness less than three-sixteenths inch shall not be used for the shell or heads. A corrosion allowance of 20 percent or 0.10 inch, whichever is less, shall be added to the thickness otherwise required for sulphur dioxide and chlorine tank material. In chlorine tanks the wall thickness shall be at least five-eighths inch, including corrosion allowance.

(b) The minimum thickness of metal in the tank shell shall be such that at no point therein will the stress on a plane normal to the cylindrical axis exceed 25 percent of the minimum specified tensile strength of the metal. For purposes of this requirement, calculation shall be made by the formula

$$S=\frac{T}{2}+\left(\frac{T^2}{4}+S_s^2\right)^{1/2}$$

where, at any given point under consideration and for the worst combination of loadings,

S=Effective stress as limited by this requirement;

T=The sum of the longitudinal tensile stresses due to internal pressure and other causes including direct tensile stress due to a rearward accelerative force equal to twice the static weight, tensile stress due to the bending moment of a rearward accelerative force equal to twice the static weight, applied at the road surface, and tensile flexure stress due to three times the static weight in vertical loading; and

S_s=The vectorial sum of the shear stresses in the plane in question, including direct vertical shear due to three times the static vertical loading, direct lateral shear due to a lateral accelerative force of twice the static weight, and torsional shear due to a lateral accelerative force equal to twice the static weight, applied at the road surface. Maximum concentrated stresses which might be created at pads and cradles due to shear, bending, and torsion shall also be calculated in accordance with appendix G of the ASME Code, 1962 edition.

NOTE 1: The forces, loads, and stresses concerned in the foregoing requirement relate to the weight of the tank itself, its contents, and articles supported by the tank, not including the weight of structures supporting the tank in normal operating condition. The stresses involved are not all uniform through the length of the tank shell.

(c) Where any tank support is attached to any part of a tank head, the stresses imposed upon the head shall be as required in paragraph (b) of this section with respect to maximum concentrated stresses at pads and cradles.

(W) By amending § 178.337–10(b) to read as follows:

§ 178.337–10 Protection of fittings.

* * * * *

(b) The protective devices or housing shall be designed to withstand static loading in any direction equal to twice the weight of the tank and attachments when filled with the lading, using a safety factor of not less than four, based on the ultimate strength of the material to be used, without damage to the fittings protected, and shall be made of metal at least 3/16-inch thick.

* * * * *

(X) By amending § 178.337–13(b) to read as follows:

§ 178.337–13 Supports and anchoring.

* * * * *

(b) Any tank motor vehicle designed and constructed so that the cargo tank constitutes in whole or in part the stress member used in place of a frame shall have the tank supported by external cradles. Cargo tanks mounted on frames shall be supported by external cradles or longitudinal members. The cradles, where used, shall subtend at least 120° of the shell circumference. The design calculations for the supports shall include beam stress, shear stress, torsion stress, bending moment, and acceleration stress for the loaded vehicle as a whole, using a factor of safety of four, based on the ultimate strength of the material and on two "G" of longitudinal and lateral loading and three times static weight in vertical loading (see appendix G of the ASME Code, 1962 edition). The effects of fatigue shall be taken into consideration.

* * * * *

VII. Part 179 would be amended by adding the following new paragraphs at the end of § 179.202–14.

§ 179.202 Special commodity requirements for nonpressure tank car tanks.

§ 179.202–14 Anhydrous hydrazine and hydrazine solutions containing 50 percent or less of water.

* * * * *

(b) Specification 103C–W tanks may be equipped with a safety relief valve having start-to-discharge pressure of not more than 45 p.s.i. in lieu of 35 p.s.i.

(c) Specification 103A–ALW tank cars authorized for transporting anhydrous hydrazine only, may have tanks equipped with a safety relief valve having start-to-discharge pressure of not more than 45 p.s.i. in lieu of 35 p.s.i.

[F.R. Doc. 68–2226; Filed, Feb. 26, 1968; 8:45 a.m.]