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Title 6—AGRICULTURAL CREDIT

Chapter III—Farmers Home Administration, Department of Agriculture

SUBCHAPTER A—GENERAL REGULATIONS

PART 300—ADMINISTRATIVE PROVISIONS

In Part 300 of Chapter III, Title 6, Code of Federal Regulations (24 F.R. 7719, 26 F.R. 10031), the provisions of Subpart A are transferred to a new Subpart B, the present Subpart B is redesignated as Subpart C, a new Subpart A entitled "Organization and General Functions of the Farmers Home Administration" and a new Subpart B entitled "Assignment of Functions" is added to Part 300 which in its entirety is revised to read as follows:

Subpart A—Organization and General Functions of the Farmers Home Administration

Sec.
300.1 General.
300.2 National Office.
300.3 State Offices.
300.4 County Offices.

Subpart B—Assignment of Functions

300.11 Functions assigned to the Farmers Home Administration.
300.12 Functions reserved by the Secretary of Agriculture.

Subpart C—Delegations of Authority

300.21 General.
300.22 National Office Staff and State Directors.
300.23 State Office Staff and County Office employees.
300.24 Ratification.
300.25 Effect on other regulations.

Subpart A—Organization and General Functions of the Farmers Home Administration

AUTHORITY: The provisions of this Subpart A issued under Orders of Sec. of Agr., Dec. 24, 1953, Aug. 27, 1963, Jan. 10, 1964, Feb. 6, 1964 (19 F.R. 74, 28 F.R. 9676, 29 F.R. 366, 2433); 7 U.S.C. 1006a, 1006b, 1011(e), 1921, 16 U.S.C. 1004, 1006a, 40 U.S.C. 440, 486, 42 U.S.C. 1471, 43 U.S.C. 451f.

§ 300.1 General.

The Farmers Home Administration was established by Order of the Secretary of Agriculture, dated August 14, 1946, (11 F.R. 9007). Its organization consists of a National Office located in the South Building of the United States Department of Agriculture in Washington, D.C.; a Finance Office located in St. Louis, Missouri; 43 State Offices (some serving more than one state); and approximately 1,500 local County Offices. This Agency is responsible for loan, grant, and other assistance programs, including Farm Operating, Farm Ownership, Soil and Water, Rural Housing, Emergency, Watershed, Rural Areas Development, and Rural Renewal programs, and the servicing of similar type loans made by predecessor agencies. The foregoing programs are administered in accordance with regulations and delegations of authority and assignments of functions published in the FEDERAL REGISTER. The regulations are codified in Chapter III, Title 6, Code of Federal Regulations. A general description of the functions of the offices and divisions of the National Office and of the State and County Offices is contained in the following sections:

§ 300.2 National Office.

(a) *Administrator and Deputy Administrator*—(1) *Administrator.* Responsible for the development of policies and procedures and general direction and supervision of programs assigned to the Farmers Home Administration, under the general direction of the Assistant Secretary for Rural Development and Conservation.

(2) *Deputy Administrator.* Assists the Administrator in formulating and administering the policies and programs of the Farmers Home Administration. Serves as Acting Administrator in the absence of the Administrator.

(b) *Assistant Administrator.* Assist the Administrator in the direction and supervision of the Farmers Home Administration programs as follows:

(1) *Assistant Administrator (Operating loans).* Responsible for the activities of the Operating and Emergency Loan Divisions, and the Rural Renewal Division.

(2) *Assistant Administrator (Real Estate Loans).* Responsible for the activities of the Farm Ownership, Rural Housing, and Soil and Water Loan Divisions.

(3) *Assistant Administrator (Management).* Responsibile for the activities of the National Finance Office, and the Budget, Personnel, and Business Services Divisions.

(4) *Assistant Administrator (Insured Loan Funds).* Responsible for the insured loan funds activities.

(c) *Staff offices.* Assist the Administrator in the direction and supervision of the following functions:

(1) *Farm Planning and Supervision Staff.* Responsible for the overall program of farm and home planning and supervision under the several loan programs.

(2) *Program Development and Administrative Coordination Staff.* Responsible for program planning, scheduling and evaluation; developing, coordinating and evaluating training programs; evaluating workloads and staffing; reports and statistical information; and coordination of the review of internal audit reports in the National Office.

(d) *Staff division.* The Information Division reports directly to the Administrator and is responsible for informational activities. It develops and recommends policies and procedures with respect to such activities, and provides technical advice and assistance to field personnel.

(e) *Program divisions under the direction of the Assisstant Administrator (Operating Loans).* Each of the following divisions is responsible to the Assistant Administrator (Operating Loans) for developing and recommending policies and procedures, for providing advice and assistance to field personnel, and for otherwise assisting in administering programs under its jurisdiction.

(1) *Operating Loan Division.* Responsible for operating loan program, including the servicing of similar type loans made by Farmers Home Administration and predecessor agencies.

(2) *Emergency Loan Division.* Responsible for Emergency loan program, including the servicing of similar type loans made by Farmers Home Administration and predecessor agencies.

(3) *Rural Renewal Division.* Responsible for Rural Renewal and Rural Areas Development activities of Farmers Home Administration, for coordination of Rural Renewal project activities of all agencies of the Department of Agriculture, and for otherwise assisting in the Rural Areas Development program of the Department of Agriculture. Also maintains liaison with other agencies of the Executive Branch in connection with these activities.

(f) *Program Divisions under the direction of the Assistant Administrator (Real Estate Loans).* Each of the following Divisions is responsible to the Assistant Administrator (Real Estate Loans) for developing and recommending policies and procedures, for providing advice and assistance to field personnel, and for otherwise assisting in administering programs under its jurisdiction.

(1) *Farm Ownership Loan Division.* Responsible for the Farm Ownership loan program, including the servicing of similar type loans made by Farmers Home Administration and predecessor agencies.

(2) *Rural Housing Loan Division.* Responsible for Rural Housing loan and grant programs.

(3) *Soil and Water Loan Division.* Responsible for Soil and Water and Watershed programs of loans and advances, including the servicing of similar type loans made by Farmers Home Administration and predecessor agencies.

(g) *The National Finance Office and the Service Divisions of the National Office.* Each of the following Divisions is responsible to the Assistant Administrator (Management) for developing and recommending policies and procedures, for providing advice and assistance to field personnel, and for otherwise assisting in administering functions under its jurisdiction.

(1) *National Finance Office.* Responsible for fiscal and accounting activities and providing service to field offices in

connection with supplies, space, property, and purchasing.

(2) *Budget Division.* Responsible for the budget activities, including those pertaining to the State Rural Rehabilitation Corporations.

(3) *Personnel Division.* Responsible for personnel activities, including employment, classification, salary administration, employee relations and development, training, safety, health, and disciplinary actions.

(4) *Business Services Division.* Responsible for business services, including rules and regulations, forms control, organization, management improvement, property and space management, travel authorizations, and communications and records management.

§ 300.3 State Offices.

Each State Office is under the supervision of a State Director who is responsible to the Administrator, in accordance with established policies and delegated authorities, for the Farmers Home Administration programs in one or more states. State Advisory Committees serve in an advisory capacity to the State Directors on all phases of the Farmers Home Administration programs.

§ 300.4 County Offices.

Each County Office is under the direction of a County Supervisor who is responsible to the State Director, in accordance with established policies and procedures, for the Farmers Home Administration programs in one or more counties. Usually, this office is located in a county seat; however, depending upon the volume of business in certain counties, the County Office located in one county may also serve one or more adjoining counties. The local County Office is the normal channel through which the public is expected to seek information, make application for assistance, and conduct business with the Farmers Home Administration. County or Area Committees composed of three individuals residing in the county or area, all of whom at the time of appointment shall be farmers, review applications for Farmers Home Administration assistance, make certifications and recommendations with respect to loans, grants, debt settlement, and release from personal liability, and advise on all phases of the Farmers Home Administration programs in the county or area.

(This Subpart A supersedes the Administrator's Order of November 15, 1946 (11 F.R. 14221, 6 CFR Part 300) as amended.)

Subpart B—Assignment of Functions

AUTHORITY: The provisions of this Subpart B issued under Orders of Sec. of Agr., Aug. 27, 1963, Feb. 6, 1964, 28 F.R. 9676, 29 F.R. 2433.

§ 300.11 Functions assigned to the Farmers Home Administration.

The following is a statement of functions which have heretofore been assigned by the Secretary of Agriculture to the Farmers Home Administration in the above cited authorities:

(a) The Consolidated Farmers Home Administration Act of 1961 (7 U.S.C. 1921), except those contained in section 342 of said Act (7 U.S.C. 1013a). These assigned functions, powers, duties, and assets pertain to programs authorized under said Act as well as to prior programs and authorities of the Farmers Home Administration and its predecessor agencies; the Farm Security Administration, the Emergency Crop and Feed Loan Offices of the Farm Credit Administration, the Resettlement Administration, and the Regional Agricultural Credit Corporation of Washington, D.C. The Consolidated Farmers Home Administration Act of 1961 (7 U.S.C. 1921), was made effective on October 15, 1961 (26 F.R. 10031), except (1) the authorization to make and sell insured loans which was made effective by regulations issued on September 13, 1961 (26 F.R. 9307), and (2) the provision of Title IV of the Bankhead-Jones Farm Tenant Act requiring mineral reservations in lands disposed of under Title III of the Act which remained effective until December 7, 1961 (26 F.R. 10031).

(b) Title V of the Housing Act of 1949 (42 U.S.C. 1471), except those pertaining to research.

(c) The Rural Rehabilitation Corporation Trust Liquidation Act (40 U.S.C. 440), and under the trust, liquidation and other agreements entered into pursuant thereto.

(d) Section 8, and those with respect to repayment of the obligations under section 4, of the Watershed Protection and Flood Prevention Act (16 U.S.C. 1006a, 1004).

(e) Rural Areas Development Program activities consisting of (1) furnishing technical information and services in initiating and implementing projects, (2) certifying individual over-all economic development programs in rural areas as being consistent with the general objectives of the economic development of rural areas of the United States, and (3) certifying industrial and commercial water factility projects and community facility projects as being consistent with approved over-all economic development programs for the areas involved. The foregoing are part of the functions, powers, and duties under the Area Redevelopment Act (42 U.S.C. 2501), delegated by the Secretary of Commerce to the Secretary of Agriculture (26 F.R. 9933).

(f) Rural Renewal Program activities consisting of coordination, direction, and supervision of Rural Renewal Projects and assistance in planning, developing, and carrying out such projects under section 32(e) of the Bankhead-Jones Farm Tenant Act (7 U.S.C. 1011(e)).

(g) Servicing, collection, settlement, and liquidation of:

(1) Deferred land purchase obligations of individuals under the Wheeler-Case Act of August 11, 1939, as amended (16 U.S.C. 590y), and under the item, "Water Conservation and Utilization Projects" in the Department of the Interior Appropriation Act, 1940 (53 Stat. 719), as amended.

(2) Puerto Rican Hurricane Relief loans under the Act of July 11, 1956 (70 Stat. 525).

(h) Disposal of surplus property under the jurisdiction of the Farmers Home Administration which the Secretary of Agriculture is authorized to dispose of by the Administrator of the General Services Administration (40 U.S.C. 486).

§ 300.12 Functions reserved by the Secretary of Agriculture.

The following functions relating to the assignments described in § 300.11 have been reserved by the Secretary in the above cited authorities:

(a) Making and issuing notes to the Secretary of the Treasury for the purposes of the Agricultural Credit Insurance Fund as authorized by the Consolidated Farmers Home Administration Act of 1961 (7 U.S.C. 1929), and Title V of the Housing Act of 1949 (42 U.S.C. 1484, 1485(b)), and requesting advances of funds evidenced by said notes and any similar notes executed under prior authorities (including 7 U.S.C. 1005b(j), 1005c(b), 1006e(a), 16 U.S.C. 590x-3(d)); where such notes or requests for advances thereunder would cause the aggregate outstanding unpaid principal balances thereon to exceed $135,000,000, or to exceed $25,000,000 thereof for domestic farm labor housing, or $10,000,000 thereof for rental housing for elderly persons and families.

(b) Designation of areas in which Emergency loans may be made (7 U.S.C. 1961).

Subpart C—Delegations of Authority

AUTHORITY: the provisions of this Subpart C issued under Orders of Sec. of Agr., Dec. 24, 1953, Aug. 27, 1963, Jan. 10, 1964, Feb. 6, 1964 (19 F.R. 74, 28 F.R. 9676, 29 F.R. 366, 2433); 7 U.S.C. 1006a, 1006b, 1011(e), 1921, 16 U.S.C. 1004, 1006a, 40 U.S.C. 440, 486, 42 U.S.C. 1471, 43 U.S.C. 451f.

§ 300.21 General.

The authorities contained in this Subpart C apply to all assets, functions, and programs now or hereafter administered or serviced by the Farmers Home Administration, including but not limited to those relating to indebtedness, security, and other assets obtained or contracted through the Secretary of Agriculture, Resettlement Administration, Farm Security Administration, Emergency Crop and Feed Loan Offices of the Farm Credit Administration, Soil Conservation Service in connection with water conservation and utilization projects, Puerto Rico Hurricane Relief Commission and successor agencies in connection with Puerto Rican hurricane relief loans to individuals, State Rural Rehabilitation Corporations, the United States of America or its officials as trustee of the assets of State Rural Rehabilitation Corporations, Regional Agricultural Credit Corporations, Defense Relocation Corporations, land leasing and purchasing associations, and other similar associations, corporations, and agencies, and whether the interest of the United States in the indebtedness, instrument of debt, security, security instrument, or other assets is that of obligee, owner, holder, insurer, assignee, mortagee, beneficiary, trustee or other interest.

§ 300.22 National Office staff and State Directors.

The following officials of the Farmers Home Administration, in accordance

with applicable laws, are severely authorized, for and on behalf of an in the name of the United States of America or the Farmers Home Administration, to do and perform all acts necessary in connection with making and insuring loans, making grants, and advances, servicing loans and other indebtedness, and obtaining, servicing, and enforcing security and other instruments related thereto: the Deputy Administrator; the Assistant Administrator (Operating Loans); the Assistant Administrator (Real Estate Loans); the Director, National Finance Office; each Deputy Director and the Insured Loan Officer, National Finance Office; the Director, Operating Loan Division; the Director, Emergency Loan Division; the Director, Rural Renewal Division; the Director, Farm Ownership Loan Division; the Director, Rural Housing Loan Division; the Director, Soil and Water Loan Division; and each State Director within the area of his jurisdiction; and in the absence or disability of any such official, the person acting in his position; and the delegates of any such official. This authority includes but is not limited to authority to:

(a) Effect the assignment of, or the declaration of trust with respect to, insured security instruments to place them in trust with the United States of America as trustee for the benefit of any holder of the promissory note or bond secured by such security instrument.

(b) Acknowledge receipt of notice of sale or assignment of insured loans and security instruments.

(c) Appoint or request the appointment or substitute trustees in deeds of trust.

(d) Execute proofs of claim in bankruptcy, death, and other cases.

(e) Sell or otherwise dispose of real estate or interests therein, and execute and deliver quitclaim deeds, easements, right-of-way conveyances, and other instruments to effectuate such sale or disposition.

(f) Compromise, adjust, cancel, release, charge off, and liquidate indebtedness, including modification of contracts and other instruments.

(g) Consent to sale or assignment of, or sell or assign, direct or insured loans and security instruments, and execute any necessary assignments, endorsements, reinsurance agreements, or other instruments in connection therewith.

(h) Approve and accept transfers of security property or interests therein to the United States of America, and approve and consent to transfers of security property or interests therein to other parties.

(i) Accelerate and declare entire real estate indebtedness due and payable, foreclose or request foreclosure of real estate security instruments by exercise of power of sale or otherwise, and bid for and purchase at any foreclosure or other sale or otherwise acquire real property pledged, mortgaged, conveyed, attached, or levied upon to collect indebtedness, and accept title to any property so purchased or acquired.

(j) Execute agreements to insure and reinsure, and to purchase and repurchase insured loans and security instruments.

(k) Request loan checks from lenders for loans to be insured, insure loans by execution of insurance endorsements, and endorse promissory notes in connection with insurance of loans.

(l) Execute and deliver or approve in writing, suspensions, releases or terminations of assignments of income, renewals, extensions, partial and full releases and satisfactions of security and personal or indemnity liability for indebtedness, waivers, subordination agreements, severance agreements, affidavits, acknowledgments, certificates of residence, evidence of consent, and other instruments or documents.

(m) Require and accept further or additional security.

(n) Accelerate and declare entire nonreal estate indebtedness due and payable, and foreclose or request foreclosure of chattel security instruments by exercise of power of sale or otherwise.

(o) Bid for and purchase at any foreclosure or other sale, or otherwise acquire personal property pledged, mortgaged, conveyed, attached or levied upon to collect indebtedness, and accept title to any property so purchased or acquired.

(p) Take possession of, maintain, and operate security or acquired real or personal property or interests therein, sell or otherwise dispose of such personal property, and execute and deliver contracts, caretaker's agreements, leases, and other instruments in connection therewith, as appropriate.

(q) Execute proofs of loss on insurance contracts and endorse without recourse loss payment drafts and checks.

(r) Issue, publish, and serve notices and other instruments.

(s) File or record instruments, whether separate instruments, or by making marginal entries, or by use of other methods permissible under State law.

§ 300.23 State Office staff and County Office employees.

The following officials and employees of the Farmers Home Administration, in accordance with applicable laws, for and on behalf of and in the name of the United States of America or the Farmers Home Administration, are also severally authorized within the area of their respective jurisdictions to perform the acts specified in paragraphs (k) to (s), both inclusive, of § 300.22; Chief, Program Operations; Chief, Real Estate Loans; Chief, Operating Loans; Program Loan Officer; Real Estate Loan Officer; Operating Loan Officer; and State Supervisor; each Area Supervisor, County (including Parish) Supervisor, Assistant County Supervisor, Emergency Loan Supervisor, Assistant Emergency Loan Supervisor, or other supervisor or assistant supervisor; and in the absence or disability of any such official or employee, the person acting in his position.

§ 300.24 Ratification.

All deeds, releases, satisfactions, subordination agreements, severance agreements, consents, waivers, assignments, declarations of trust, and other written instruments affecting title to real or personal property heretofore executed by officials or employees of the agencies or other entities referred to in § 300.21 to carry out any purpose authorized by law, incident to the administration of programs under the jurisdiction of said agencies or other entities, are hereby approved, confirmed, and ratified.

§ 300.25 Effect on other regulations.

This Subpart C supersedes the Administrator's Order of September 17, 1959 (24 F.R. 7719), but does not revoke or modify any other delegation or redelegation, instruction, procedure, or regulation issued by, or under authority of, the Administrator of the Farmers Home Administration.

Dated: March 20, 1964.

FLOYD F. HIGBEE,
Acting Administrator,
Farmers Home Administration.

[F.R. Doc. 64-3002; Filed, Mar. 26, 1964; 8:51 a.m.]

Title 7—AGRICULTURE

Chapter III—Agricultural Research Service, Department of Agriculture

PART 362—REGULATIONS FOR ENFORCEMENT OF FEDERAL INSECTICIDE, FUNGICIDE, AND RODENTICIDE ACT

Revision of Sections

On September 6, 1963, there was published in the FEDERAL REGISTER (F.R. Doc. 63-9541) a notice of proposed rule making concerning the revision of the regulations (7 CFR 362.1-362.25) for the enforcement of the Federal Insecticide, Fungicide, and Rodenticide Act. Interested persons were given until November 30, 1963, to submit written data, views, or arguments. In view of the comments received, certain changes were made and, on January 16, 1964, the proposed revision of said regulations was published in the FEDERAL REGISTER (F.R. Doc. 64-392) for further consideration. Interested persons were given twenty days in which to submit written data, views, or arguments.

After consideration of all relevant matter presented by interested persons, and pursuant to section 6 of said Act (7 U.S.C. 135d.), the proposed regulations (7 CFR 362.1-362.25) as so published on January 16, 1964, are hereby adopted, subject to the changes set forth below.

1. Paragraph (a)(1) of § 362.8 is amended by adding the phrase "which have been fasted for a period of 24 hours" after the word "rats."

2. Paragraph (a) of § 362.9 is amended by adding the phrase "or if the nature of the product is such that it is likely to be used on infants or small children without causing injury under any reasonably foreseeable conditions," after the phrase "extremely remote,".

3. Paragraph (e) of § 362.10 is changed by deleting the phrase "a registrant" in

the paragraph heading and the word "registrant" in the first sentence and inserting therefor in each instance the phrase "applicant for registration".

4. Paragraph (a)(5) of § 362.14 is not adopted at this time. Further opportunity to submit views on this provision will be afforded in accordance with a notice of extension of time for filing comments on this proposal published concurrently herewith.

5. Paragraph (b)(4)(i) of § 362.17 is amended by deleting the phrase "An affidavit" and inserting therefor the phrase "A certification".

6. Paragraph (b)(6) of § 362.17 is amended by adding a new subdivision (vi).

7. Said paragraph (b)(6) is further amended by transferring the third sentence to a new paragraph following new subdivision (vi).

§ 362.1 Words in singular form.

Words used in the singular form in this subpart shall include the plural, and vice versa, as the case may require.

§ 362.2 Terms defined.

Terms used in this subpart shall have the meanings set forth for such terms in the Act. In addition, as used in this subpart, the following terms shall have the meanings stated below:

(a) *Act.* "Act" means the Federal Insecticide, Fungicide, and Rodenticide Act, as amended.

(b) *Director.* "Director" means the Director of the Pesticides Regulation Division, Agricultural Research Service, United States Department of Agriculture, or any officer or employee to whom he has heretofore lawfully delegated or to whom he may hereafter lawfully delegate the authority to act in his stead.

(c) *Economic poison.* "Economic poison" includes all preparations intended for use as insecticides, rodenticides, nematocides, fungicides, herbicides, amphibian and reptile poisons or repellents, bird poisons or repellents, fish poisons or repellents, mammal poisons or repellents, invertebrate animal poisons or repellents, plant regulators, plant defoliants, and plant desiccants. A product shall be deemed to be an economic poison regardless of whether intended for use as packaged or after dilution or mixture with other substances, such as carriers or baits. Products intended only for use after further processing or manufacturing, such as grinding to dust or more extensive operations, shall not be deemed to be economic poisons. Substances which have recognized commercial uses other than uses as economic poisons shall not be deemed to be economic poisons unless such substances are:

(1) Specially prepared for use as economic poisons, or

(2) Labeled, represented, or intended for use as economic poisons, or

(3) Marketed in channels of trade where they will presumably be purchased as economic poisons.

(d) *Fungicide.* "Fungicide" includes all preparations intended for preventing, destroying, repelling, or mitigating any fungi or any viruses (other than those on or in living man or other animals). Examples of fungicides include but are not limited to: (1) Plant fungicides, seed fungicides, fungicidal wood preservatives, and mildew and mold preventatives, and

(2) Disinfectants, sanitizers, and sterilizers, except those for use only on or in living man or other animals.

(e) *Herbicide.* "Herbicide" means any substance or mixture of substances intended for preventing, destroying, repelling, or mitigating any weed, including any algae or other aquatic weed, or any plant parts growing where not wanted.

(f) *Nematocide.* "Nematocide" includes only those products intended for preventing, destroying, repelling, or mitigating nematodes inhabiting soil, water, plants, or plant parts. The term does not include products intended for use against nematodes in or on living man or other animals.

(g) *Plant regulator.* "Plant regulator" includes those substances intended to alter the behavior of ornamental or crop plants or the produce thereof through physiological rather than physical action. The term includes, but is not limited to, substances intended to accelerate or retard the rate of growth or maturation of ornamental or crop plants, enhance fruit set, prevent fruit drop, accelerate root formation and elongation, prolong or break domancy of ornamental or crop plants or the produce thereof, but shall not include substances intended solely for use as plant nutrients or fertilizers.

(h) *Active ingredient.* An "active ingredient" is an ingredient which: (1) Is capable in itself, and when used in the same manner and for the same purposes as directed for use of the product, of preventing, destroying, repelling, or mitigating insects, fungi, rodents, weeds, nematodes, or other pests, or altering through physiological action the behavior of ornamental or crop plants or the produce thereof, or causing leaves or foliage to drop from a plant, or artificially accelerating the drying of plant tissue.

(2) Is present in the product in an amount sufficient to add materially to its effectiveness; and

(3) Is not antagonistic to the activity of the principal active ingredient: *Provided, however,* That the Director may require an ingredient to be designated as an active ingredient if, in his opinion, it sufficiently increases the effectiveness of the economic poison to warrant such action.

(i) *Official inspector.* "Official inspector" means any employee or agent of the Department of Agriculture or the Treasury Department authorized by the Director or by the Secretary of the Treasury to make investigations in connection with enforcement of the Act.

(j) *Vertebrate animals.* "Vertebrate animals" means all species of the subphylum vertebrata including domestic vertebrates and vertebrate species of fish and wildlife.

(k) *Invertebrate animals.* "Invertebrate animals" means all forms of animal life other than vertebrate animals, including both domestic and wild species.

§ 362.3 Administration.

The Director is authorized to take such action as, in his discretion, may be necessary in the administration and enforcement of the Act and the regulations in this part.

LABELING

§ 362.4 Labeling required.

Every economic poison shall bear a label containing the information specified in the Act and the regulations in this part.

§ 362.5 Language to be used.

All statements, words, and other information required by the Act or the regulations in this part to appear on the label or labeling of any economic poison shall be in the English language: *Provided,* That shipments of articles intended solely for sale in foreign countries may bear labels or labeling in the appropriate foreign language. The Director may permit the use of an appropriate foreign language version of the label or labeling in addition to the English version on products intended for distribution in areas of the United States where a large percentage of the population does not speak English.

§ 362.6 Labeling.

(a) *Contents of label and labeling.* The label of every economic poison must show, clearly and prominently, the name, brand or trademark under which the product is sold; the name and address of the manufacturer, registrant, or person for whom manufactured; the net contents as prescribed in paragraph (e) of this section; an ingredient statement as prescribed in § 362.7, and an appropriate warning or caution statement as prescribed in § 362.9. The label or labeling of every economic poison must bear directions for use which are necessary and if complied with, adequate for the protection of the public.

(b) *Placement of label.* The label shall appear on the economic poison or the immediate container thereof. If the immediate container is enclosed within a wrapper or outside container through which the label cannot be clearly read by a person with normal vision, the label must also appear on such outside wrapper or container if it is a part of the retail package.

(c) *Name and address of manufacturer, distributor, packer, formulator, or registrant.* An unqualified name and address given on the label shall be considered as the name and address of the manufacturer. If the registrant's name appears on the label and the registrant is not the manufacturer, or if the name of the person for whom the economic poison was manufactured appears on the label, it must be qualified by appropriate wording such as "Packed for * * *," "Distributed by * * *," or "Sold by * * *" to show that the name is not that of the manufacturer. If a person has two or more locations at which an economic poison is manufactured or packaged, or from which it is distributed, the name and address of the person's principal office will be accepted except in cases where the Director determines that the address of the exact location is necessary for the protection of the public. The address of the manufacturer, registrant, or person for whom manufactured shall include the street address, if any, unless the street address

is shown in a current city directory or telephone directory.

(d) *Name, brand, or trade-mark of economic poison.* The name, brand, or trade-mark of the economic poison, appearing on the label shall be that under which the economic poison is registered.

(e) *Net content.* (1) The net content shall be exclusive of wrappers or other material, and shall be deemed to be average content unless stated as a minimum quantity.

(2) Net content shall be stated in the terms of weight or measure in general use by consumers and users of the type of economic poison to give accurate information as to the quantity of the economic poison. If there is no general use, the net content statement shall be in terms of liquid measure if the product is a liquid, and in terms of weight if it is solid, semi-solid, viscous, or a mixture of liquid and solid. Statements of liquid measure shall be in terms of the United States gallon, quart, pint, and fluid ounce at 68° F. The statements of weight shall be in terms of avoirdupois pound and ounce. All statements of net content shall be in terms of the largest unit present.

(3) If the contents are stated as a minimum quantity, variation below the stated quantity is not permissible and variation above shall not be unreasonably large.

(4) If the contents are not stated as a minimum quantity, variation shall be permitted only to the extent that it represents deviations unavoidable in good packing practice. The average quantity in the packages in a shipment shall not fall below the average quantity stated, nor shall there be any unreasonable variation from the average in the contents of any package.

(f) *Legibility of label and labeling.* All words, statements, graphic representations, or designs required by the regulations in this part to appear on the label or labeling must be clearly legible and easy to read by a person with normal vision. The signal word, when required, and the statement "Keep out of reach of children" prescribed in § 362.9(a) shall be of a size bearing a reasonable relationship to the other type on the front part of the label and to the size of the container. The signal word, when required, shall not be less than 18 point type and the said warning statement shall not be less than 12 point type, unless the label space on the container is too small to accommodate such type sizes in which case the Director shall prescribe the type size. When the size of the label space requires a reduction in type size, the reduction shall be made to a size no smaller than is necessary and in no event to a size smaller than 6 point type.

§ 362.7 Ingredient statement.

(a) *Location of ingredient statement.* The ingredient statement must appear on the front panel or that part of the label displayed under customary conditions of purchase, except in cases where the Director determines that, due to the size or form of the container, a statement on that portion of the label is impracticable, and permits such statement to appear on another side or panel of the label. Regardless of the placement of the ingredient statement on the label, it shall be sufficiently prominent and in type size which can be easily read by a person with normal vision. The ingredient statement must run parallel with other printed matter on the panel of the label on which it appears and must be on a clear contrasting background not obscured or crowded.

(b) *Names of ingredients.* The well-known common name of each of the listed ingredients must be given or, if an ingredient has no common name, the correct chemical name which conforms most closely with generally accepted rules of chemical nomenclature. If there is no common name and the chemical composition is complex, the Director may permit the use of a new or coined name which he finds to be appropriate for the information and protection of the user. If the use of a new or coined name is permitted, the Director may prescribe the terms under which it may be used. A trade-mark or trade name shall not be used as the name of an ingredient except when it has become a common name.

(c) *Percentages of ingredients.* Percentages of ingredients shall be determined by weight and the sum of the percentages of the ingredients shall be 100. Sliding scale forms of ingredient statements shall not be used.

(d) *Designation of ingredients.* (1) Active ingredients and inert ingredients shall be so designated, and the term "inert ingredients" shall appear in the same size type and be equally as prominent as the term "active ingredients."

(2) If the name but not the percentage of each active ingredient is given, the names of the active and inert ingredients shall, respectively, be shown in the descending order of the percentage of each present in each classification and the name of each ingredient shall be given equal prominence.

(e) *Active ingredient content.* As long as an economic poison is subject to the Act the percentages of active ingredients in the economic poison shall be those declared in the ingredient statement.

§ 362.8 Economic poisons highly toxic to man.

(a) Economic poisons which fall within any of the following categories when tested on laboratory animals as specified in subparagraphs (1), (2), or (3) of this paragraph are highly toxic to man or contain substances or quantities of substances highly toxic to man within the meaning of the Act (such economic poisons being hereinafter in this part referred to as economic poisons highly toxic to man): *Provided, however,* That the Director may, upon application and after opportunity for hearing, exempt any economic poison which is in any of these categories, but which is not in fact highly toxic to man, from the requirements of the Act and the regulations in this part with respect to economic poisons highly toxic to man:

(1) *Oral toxicity.* An economic poison which has a single dose LD_{50} of 50 milligrams or less per kilogram of body weight when administered orally to both male and female rats which have been fasted for a period of 24 hours (or to other rodent or nonrodent species specified by the Director); or

(2) *Toxicity on inhalation.* An economic poison which has an LC_{50} of 2,000 micrograms or less of dust or mist per liter of air or 200 parts per million or less by volume of a gas or vapor, when administered by continuous inhalation for one hour to both male and female rats (or to other rodent or nonrodent species specified by the Director), if the Director finds that it is reasonably foreseeable that such concentration will be encountered by man; or

(3) *Toxicity by skin absorption.* An economic poison which has an LD_{50} of 200 milligrams or less per kilogram of body weight when administered by continuous contact for twenty-four hours with the bare skin of rabbits (or other rodent or nonrodent species specified by the Director).

(b) *Tests on other species.* Tests on other specified rodent or nonrodent species may be required by the Director with respect to individual economic poisons or to classes of economic poisons whenever he finds that tests on other species are necessary to determine whether an economic poison is highly toxic to man.

(c) *Terms LD_{50} and LC_{50}.* An LD_{50} as used in connection with oral toxicity and skin absorption toxicity tests specified in paragraph (a) (1) and (3) of this section is the dose and LC_{50} as used in connection with inhalation tests specified in paragraph (a) (2) of this section is the concentration which is expected to cause death within 14 days in 50 percent of the test animals so treated.

(d) *Toxicity based on human experience.* If the Director finds, after opportunity for hearing, that available data on human experience with any economic poison indicate a toxicity greater than that determined from the above described tests on animals, the human data shall take precedence and, if he finds that the protection of the public so requires the Director shall declare such an economic poison to be highly toxic to man for the purposes of this Act and the regulations thereunder.

§ 362.9 Warning or caution statement.

Warning or caution statements, which are necessary and, if complied with, adequate to prevent injury to living man and useful vertebrate animals, useful vegetation, and useful invertebrate animals, must appear on the label in a place sufficiently prominent to warn the user, and must state clearly and in nontechnical language the particular hazard involved in the use of the economic poison, e.g., ingestion, skin absorption, inhalation, flammability or explosion, and the precautions to be taken to avoid accident, injury, or damage.

(a) The label of every economic poison shall bear warnings or cautions which are necessary for the protection of the public, including the statement, "Keep out of reach of children," and a signal word such as "Danger," "Warning," or "Caution" as the Director may prescribe, on the front panel or that part of the label displayed under customary conditions of purchase: *Provided, how-*

ever, The Director may permit reasonable variations in the placement of that part of the required warnings and cautions other than the statement "Keep out of reach of children" and the required signal word, if in his opinion such variations would not be injurious to the public. If an economic poison is marketed in channels of trade where the likelihood of contact with children is extremely remote, or if the nature of the product is such that it is likely to be used on infants or small children without causing injury under any reasonably foreseeable conditions, the Director may waive the requirement of the statement "Keep out of reach of children" if in his opinion such a statement is not necessary to prevent injury to the public. The Director may permit a statement such as "Keep away from infants and small children" in lieu of the statement "Keep out of reach of children" if he determines that such a variation would not be injurious to the public.

(b) The label of every economic poison which is highly toxic to man as described in § 362.8 shall bear the word "Danger" along with the word "Poison" in red on a contrasting background in immediate proximity to the skull and crossbones and an antidote statement including directions to call a physician immediately, on the front panel or that part of the label displayed under customary conditions of purchase: *Provided, however,* The Director may permit reasonable variations in the placement of the antidote statement if some reference such as "See antidote statement on back panel" appears on the front panel near the word "Poison" and the skull and crossbones.

REGISTRATION

§ 362.10 Registration.

(a) *Eligibility.* Any manufacturer, packer, seller, distributor, or shipper of an economic poison is eligible to apply for registration of such economic poison.

(b) *Effect of registration.* If an economic poison is registered under the Act no further registration under the Act by other persons is required: *Provided,* That

(1) The product is in the manufacturer's or registrant's original unbroken immediate container; and

(2) The claims made for it and the directions for its use do not differ from the representations made in connection with registration; and

(3) The product contains the labeling accepted in connection with registration and otherwise complies with the Act.

(c) *Procedure for registration.* Applications for registration should be addressed to Pesticides Regulation Division, Agricultural Research Service, United States Department of Agriculture, Washington, D.C., 20250. Application forms will be furnished upon request. All applications for registration shall be accompanied by duplicate copies of the proposed labeling, including all printed or graphic matter which is to accompany the economic poison at any time and, if requested by the Director, a full description of the tests made and the results thereof upon which the claims for the economic poison are based, together with such other information as may be necessary to assure compliance with the Act and the regulations in this part. If any part of the proposed labeling submitted is in a foreign language, it shall be accompanied by an accurate and complete English translation. Applications should be submitted as far in advance as possible, and at least 30 days, before it is desired that registration take effect. However, the period of time required to process applications to determine the adequacy of the proposed labeling may exceed 30 days in some cases. Applications which require consultation with other governmental agencies will take a longer period of processing. No fees are charged for registration.

(d) *Effective date of registration.* Registration of an economic poison shall become effective on the date the notice of registration is issued.

(e) *Responsibility of applicant for registration.* The applicant for registration is responsible for the accuracy and completeness of all information submitted in connection with his application for registration of an economic poison.

(f) *Changes in labeling or formulas.* (1) Changes in the labeling or changes in the formula of a registered economic poison must be submitted in advance to the Pesticides Regulation Division, Agricultural Research Service, United States Department of Agriculture, Washington, D.C., 20250. The registrant must describe the exact changes desired and the proposed effective date and, upon request, shall submit a description of tests which justify such changes.

(2) After the effective date of a change in labeling or formula, the product shall be marketed only under the new claims or formula: *Provided, however,* The Director may permit a reasonable time for the disposition of stocks of the discontinued product, if in his opinion such an extension would not endanger the public.

(g) *Claims must conform to registration.* Claims made for an economic poison must not differ from representations made in connection with registration, including representations with respect to effectiveness, ingredients, directions for use, or pests against which the product is recommended.

(h) *Duration of registration.* If at any time it does not appear to the Director that the economic poison is such as to warrant the proposed claims for it or if the economic poison and its labeling and other material required to be submitted do not comply with the provisions of the Act, the Director shall notify the registrant of the facts involved and afford him an opportunity to bring the product and its labeling into compliance with the Act. If after a reasonable period of time, the registrant has not made such corrections, the Director may cancel the registration under the provisions of section 4.c. of the Act. Unless cancelled in accordance with this paragraph or with the acquiescence of the registrant, or unless continued in effect in accordance with the provisions of paragraph (i) of this section, the registration of an economic poison shall be cancelled at the end of a period of five years following the date of registration of such economic poison, or at the end of five years following the date of any subsequent registered change in formula or labeling, or at the end of five years following the date of any continuance of registration pursuant to paragraph (i) of this section: *Provided, however,* That prior to any such cancellation the Pesticides Regulation Division shall send to the registrant a notice of intent to cancel, and, in the event such notice is not sent to the registrant 30 days prior to the expiration of the five-year period, the registration shall remain in effect until 30 days following the date such notice has been sent to the registrant at his latest address submitted to the Pesticides Regulation Division.

(i) *Continuance of registration.* If a registrant desires to continue the registration in effect, he shall notify the Pesticides Regulation Division in writing and it shall be continued in effect under the same terms as the original registration: *Provided, however,* That if, on the basis of information available at the time, it appears that the product or its labeling fails to comply with the Act, the registrant shall be so notified and afforded the opportunity to make the necessary corrections. If the corrections are not made, registration will be cancelled as provided in section 4.c. of the Act.

(j) *Limitations on registrations.* The Director may refuse to register any economic poison or any specific use thereof if, in his opinion, directions and warnings cannot be written which will prevent injury to the general public when the product is used in accordance with warnings and directions or in accordance with commonly recognized practices. If, however, such an economic poison is proposed for certain acceptable uses, the Director may require the label to bear a warning against specific unacceptable uses such as in the home or home garden.

GUARANTEES

§ 362.11 Guarantee of economic poison.

(a) *By whom given; effect of guarantee.* Any manufacturer, distributor, wholesaler, or other person residing in the United States may furnish to any person to whom he sells an economic poison a guarantee that the economic poison was lawfully registered at the time of sale and delivery to such person, and that the economic poison complies with all the requirements of the Act and of the regulations in this part. The Act provides that penalties for violation of section 3.a. of the Act shall not apply to a person who establishes that he has received a guarantee as specified in the Act.

(b) *Reference to guarantee.* No reference to a guarantee or suggestion that such a guarantee has been given shall be made in the labeling of any economic poison.

(c) *Contents of guarantee.* In order to afford effective protection, each guarantee must:

(1) Be signed by and contain the name and address of the person giving it; and

(2) State that the economic poison was lawfully registered at the time of sale and delivery and that it complies with all other requirements of the Federal Insecticide, Fungicide, and Rodenticide Act.

(d) *Scope of guarantee.* A guarantee may be (1) limited to a specific shipment or other delivery of a product, in which case it may be a part of or attached to the invoice or bill of sale covering such shipment or delivery, or (2) general and continuing, in which case, in its application to any shipment or other delivery of a product it shall be considered to have been given at the date when such product was shipped or delivered by the person giving the guarantee.

(e) *Expiration of guarantee.* Any guarantee shall expire when the product is repacked or relabeled by the purchaser or when it becomes in violation of the Act or the regulations in this part after shipment or other delivery by the person giving the guarantee.

(f) *Forms of guarantee.* The following are suggested forms of guarantee:

(1) *Limited form for use on invoice or bill of sale.*

---------- hereby guarantees
(Name of guarantor)
that the economic poison herein listed is lawfully registered with the Secretary of Agriculture and that the same complies with all requirements of the Federal Insecticide, Fungicide, and Rodenticide Act.

(Signature and post office address of guarantor)

(Date)

(2) *General and continuing form.*

The economic poisons comprising each shipment or other delivery hereafter made by ----------, to or on the order of
(Name of guarantor)
---------- are hereby
(Name and address of person receiving guarantee)
guaranteed to be lawfully registered with the Secretary of Agriculture and to comply with all requirements of the Federal Insecticide, Fungicide, and Rodenticide Act, as of the date of such shipment or delivery.

(Signature and post office address of guarantor)

(Date)

COLORATION OF ECONOMIC POISONS

§ 362.12 Coloration and discoloration.

The white economic poisons hereinafter named shall be colored or discolored in accordance with this section. The hues, values, and chromas specified are those contained in the Munsell Book of Color, Munsell Color Company, 10 East Franklin Street, Baltimore, Md.

(a) *Coloring agent.* The coloring agent must produce a uniformly colored product not subject to change in color beyond the minimum requirements specified in the regulations in this part during ordinary conditions of marketing or storage, and must not cause the product to be ineffective or result in its causing damage when used as directed.

(b) *Arsenicals and barium fluosilicate.* Standard lead arsenate, basic lead arsenate, calcium arsenate, magnesium arsenate, zinc arsenate, zinc arsenite, and barium fluosilicate shall be colored any hue, except the yellow-reds and yellows, having a value of not more than 8 and a chroma of not less than 4, or shall be discolored to a neutral lightness value not over 7.

(c) *Solium fluoride and sodium fluosilicate.* Sodium fluoride and sodium fluosilicate shall be colored blue or green having a value of not more than 8 and a chroma of not less than 4, or shall be discolored to a neutral lightness value not over 7.

(d) *Exceptions.* (1) Notwithstanding the provisions of paragraphs (b) and (c) of this section, the Director, after opportunity for hearing, may permit other hues to be used for any particular purpose if he determines that use of the prescribed hues is not feasible for such purpose and that such action will not be injurious to the public.

(2) Any economic poison specified in this part which is intended solely for use by a textile manufacturer or commercial laundry, cleaner or dyer as a mothproofing agent, which would not be suitable for such use if colored and which will not come into the hands of the public except when incorporated into a fabric may be exempted by the Director from the requirements of section 3.a.(4) of the Act and the requirements of this section.

(3) The economic poison sodium fluoride shall be exempt from the requirements of section 3.a.(4) of the Act and paragraph (c) of this section when (i) it is intended for use as a fungicide solely in the manufacture or processing of rubber, glue, or leather goods; (ii) coloration of the economic poison in accordance with said requirements will be likely to impart objectionable color characteristics to the finished goods; (iii) the economic poison will not be present in such finished goods in sufficient quantities to cause injury to any person; and (iv) the economic poison will not come into the hands of the public except after incorporation into such finished goods.

ADULTERATION AND MISBRANDING

§ 362.13 Adulteration.

An economic poison is adulterated if its strength or purity falls below the professed standard or quality as expressed on its labeling or under which it is sold, or if any substance has been substituted wholly or in part for the article, or if any valuable constituent of the article has been wholly or in part abstracted.

(a) A valuable constituent will be considered as wholly abstracted whenever the designation or representation of the product imports its presence therein and such constituent has been wholly omitted therefrom in the preparation of the product or has been wholly removed from the completed product.

(b) A valuable constituent will be considered as partly abstracted whenever the designation or representation of the product imports its presence therein, and such constituent is not present in the usual or customary amount or in the amount indicated in the labeling.

§ 362.14 Misbranding.

An economic poison or device is misbranded if the article or its labeling is false or misleading to the public in any particular.

(a) Examples of statements or representations in the labeling of an economic poison or device which render it misbranded are the following:

(1) A false or misleading statement concerning composition of the product.

(2) A false or misleading statement concerning the effectiveness of the product as an economic poison or device.

(3) A false or misleading statement about the value of the product for purposes other than as an economic poison or device.

(4) A false or misleading comparison with other economic poisons or devices.

(5) [Reserved.]

(6) Any statement directly or indirectly implying that the economic poison or device is recommended or endorsed by any agency of the Federal Government.

(7) The name of an economic poison which contains two or more principal active ingredients if it suggests the name of one or more but not all such principal active ingredients even though the names of the other ingredients are stated elsewhere in the labeling.

(8) Prominent reference in the labeling to one or more active ingredients without giving their percentages in immediate proximity thereto or without giving equal prominence to the other active ingredients or to the inert ingredients.

(9) A true statement used in such a way as to give a false or misleading impression to the purchaser.

(b) *Justification of false and misleading statements not permitted.* (1) The use of any false or misleading statement on any part of the labeling, given as the statement or opinion of any person or based upon such statement or opinion, shall not be justified by the fact that the statement or opinion is actually that of such person.

(2) The use of a false or misleading statement in the labeling cannot be justified by an explanatory statement.

ENFORCEMENT

§ 362.15 Enforcement.

(a) *Collection of samples.* Samples of economic poisons and devices shall be collected by official inspectors or by any employee of the Federal Government, or of a State or Territory, or political subdivision thereof who has been duly authorized by the Director to collect samples.

(b) *Examination of samples.* Methods of examination of samples shall be those adopted and published by the Association of Official Agricultural Chemists, where applicable, or such other methods as the Director may find necessary to determine whether the product complies with the law.

(c) *Notice of apparent violation.* (1) If, from an examination or analysis, an economic poison or device appears to be in violation of the Act, a notice in writing shall be sent to the person against whom criminal proceedings are contemplated, giving him 20 days within which to offer such written explanation as he may desire. The notice shall state the manner in which the sample fails to meet the requirements of the Act and the regulations thereunder.

(2) Any such person may, in addition to his reply to such notice, file within 20 days of its receipt a written request for an opportunity to present his views orally in connection therewith.

(3) No notice or hearing is required prior to the seizure of any economic poison or device.

§ 362.16 Notices of judgment.

Publication of notices of judgments of the courts in cases arising under the criminal or seizure provisions of the Act shall be made in the form of notices, circulars, or bulletins as the Director may prescribe.

TEMPORARY PERMITS

§ 362.17 Limited shipments for experimental purposes.

Temporary permits not to exceed a period of one year may be issued for shipment of limited amounts of a product which is to be tested further, usually on a larger scale, to determine its limitations. Permits will be issued only for bonafide experimental programs under the supervision of qualified persons. The Director may require the submission of such information and data concerning the product and the program which he deems necessary for the protection of the public. If, in the opinion of the Director, such information has not been submitted he may, for the protection of the public, refuse to issue the permit.

(a) *Articles for which no permit is required.* (1) A substance or mixture of substances being put through tests in which the purpose is only to determine its value for economic poison purposes or to determine its toxicity or other properties, and where the user does not expect to receive any benefit in pest control from its use, is not considered an economic poison within the meaning of section 2a of the Act. Therefore, no permit under the Act is required for its shipment.

(2) An economic poison shipped or delivered for experimental use by or under the supervision of any Federal or State agency authorized by law to conduct research in the field of economic poisons shall not be subject to the provisions of the Act and the regulations in this part.

(b) *Articles for which permit is required.* (1) An economic poison shipped or delivered for experimental use by qualified persons but not under the supervision of a Federal or State agency authorized by law to conduct research in the field of economic poisons, for which a permit has been issued by the Director pursuant to the provisions of this section, shall otherwise be exempt from the provisions of the Act and of the regulations in this part. Permits will be of two types, specific and general. A specific permit will be issued to cover a particular shipment on a specified date to a named person. A general permit will be issued to cover more than one shipment over a period of time to the same or different persons.

(2) If an economic poison is to be tested in such a manner that residues may result in or on food or feed, a permit for shipment will not be issued unless:

(i) Sufficient data are submitted to the Director to show that no residue will be present on food or feed involved in the experimental program or

(ii) A tolerance or exemption from the need of a tolerance or a temporary tolerance or exemption from the need of a temporary tolerance, has been established by the Food and Drug Administration to cover any detectable residue which may be present on food or feed involved in the experimental program and sufficient data are submitted to the Director to show that such program will not result in any residue in excess of any such tolerance or

(iii) The food or feed derived from the experimental program will be destroyed or fed only to laboratory animals or otherwise disposed of in a manner which will protect the public and which is approved by the Director.

(3) A permit for shipment of any experimental economic poison for testing in any place likely to be frequented by people will be granted only if it is clearly shown in the application for such permit that the applicant's instructions for use reasonably assure the avoidance of injury to all persons concerned.

(4) All applications for permits covering shipments for experimental use shall be filed in duplicate with the Pesticides Regulation Division, Agricultural Research Service, United States Department of Agriculture, Washington, D.C., 20250, and must be signed by the shipper and must contain the following:

(i) A certification to the effect that food or feed derived from the experimental program will not be used or offered for consumption or sale for consumption, except by laboratory or experimental animals if illegal residues are present in or on such food or feed.

(ii) Name and address of the shipper and place or places from which the shipment will be made.

(iii) Proposed date of shipment or proposed shipping period not to exceed one year.

(iv) A statement of the composition of material to be covered by the permit which should apply to a single material or group of closely allied formulations of the material.

(v) A statement of the approximate quantity of material to be shipped.

(vi) Available data or information, or reference to available data or information, on the toxicity of the economic poison.

(vii) A statement of the nature of the proposed experimental program, including designation of the type of pests or organisms to be experimented with, the crops or animals on which the economic poison is to be used, a statement of the dates during which the proposed experimental program will be conducted, and the states or geographical areas where it is proposed to conduct the program, and including the results of previous tests where necessary to justify the issuance of a permit for the quantity requested.

(viii) The percentage of the total quantity of material specified under subdivision (v) of this subparagraph which will be supplied without charge to the user.

(ix) A statement that the economic poison is intended for experimental use only.

(x) Proposed labeling which must bear (*a*) the prominent statement "For Experimental Use Only" on the container label and any accompanying circular or other labeling, (*b*) a warning or caution statement if in the opinion of the Director it is necessary, which statement shall, if complied with, be adequate in his opinion, for the protection of those who may handle or be exposed to the experimental formulations, (*c*) the name and address of the applicant for the permit, (*d*) the name or designation of the formulation, (*e*) an ingredient statement as prescribed in § 362.7, and (*f*) necessary directions for use including crops or sites to be treated, limitations on dosage to be used, and if the economic poison is to be tested on food or feed crops the number of days required between last application and harvest.

(5) The Director may limit the quantity of economic poison covered by a permit to such less quantity than requested as he may determine if the available information on effectiveness, or toxicity or other hazards, is not sufficient to justify the scope of experimental use proposed in the application, or may make such other limitations in the permit as he may determine to be necessary for the protection of the public.

(6) Reports on experimental program: During the period in which a permit is effective, the holder shall submit to the Director periodic reports regarding the status of the experimental program. Reports shall be submitted at 3-month intervals and at the end of the experimental program. These reports shall include the following information:

(i) Amount of the economic poison shipped during reporting period.

(ii) Name and address of consignee of each shipment.

(iii) A summary of data on effectiveness, phytotoxicity, or other pertinent information obtained during the reporting period.

(iv) Any additional data on residues or analytical methods obtained during the reporting period.

(v) Any additional data on toxicity obtained during the reporting period.

(vi) Such other information and data as the Director may require.

The Director may at any time request additional reports on the experimental program if, in his opinion, such reports are necessary for the protection of the public.

(7) An economic poison shipped under a permit shall not be offered for general retail sale.

(c) *General permit for economic poisons for experimental use which are also subject to the new drug requirements of the Federal Food, Drug, and Cosmetic Act.* (1) Notwithstanding the provisions of paragraph (b) of this section, a general permit is hereby issued under section 7.a.(4) of the Act to the manufacturers and shippers of economic poisons for experimental use only, to ship such economic poisons: *Provided,* (i) That the product is a "new drug" within

the meaning of section 201(p) and 505 of the Federal Food, Drug, and Cosmetic Act (21 U.S.C. sec. 321(p) and sec. 355); (ii) that it is subject to, and the manufacturer or shipper complies with, the provisions of section 505(i) of said Act (21 U.S.C. sec. 355(i)) and § 130.3 of the regulations (21 CFR 130.3) thereunder; and (iii) that the documents referred to in said § 130.3 shall be made available for inspection upon the request of any officer or employee of the Agricultural Research Service of the United States Department of Agriculture at any reasonable time within two years after the introduction of the product into interstate commerce.

(2) The general permit referred to in the preceding subparagraph shall apply only insofar as the experimental uses are for drug purposes within the meaning of the Federal Food, Drug, and Cosmetic Act. It shall not apply to other experimental uses even though the product may be intended for both drug and nondrug uses.

(d) *Cancellation of permits.* Any permit for shipment for experimental use may be canceled at any time for any violation of the terms thereof or if it shall appear to the Director that the permit should be canceled for the protection of the public.

§§ 362.18–362.24 [Reserved]

DECLARATION OF PESTS

§ 362.25 Forms of plant and animal life and viruses declared to be pests.

(a) Each of the following forms of plant and animal life and viruses is declared to be a pest under the Act when it exists under circumstances that make it injurious to plants, man, domestic animals, other useful vertebrates, useful invertebrates, or other articles or substances:

Mammals, including but not limited to dogs, cats, moles, bats, wild carnivores, armadillos, and deer;
Birds, including but not limited to starlings, English sparrows, crows, and blackbirds;
Fishes, including but not limited to the jawless fishes such as the sea lamprey, the cartilaginous fishes such as the sharks, and the bony fishes such as the carp;
Amphibians and reptiles, including but not limited to poisonous snakes;
Aquatic and terrestrial invertebrates, including but not limited to slugs, snails, and crayfish;
Roots and other plant parts growing where not wanted;
Viruses, other than those on or in living man or other animals.

Effective date. These regulations shall become effective 30 days after publication in the FEDERAL REGISTER with the following exceptions:

The provisions of paragraph (f) of §§ 362.6 and 362.9 shall become effective sixty days after publication in the FEDERAL REGISTER: *Provided, however,* That the effective date of these provisions with respect to products for which labeling is accepted prior to the expiration of said 60 days, shall be January 1, 1965.

The reporting requirements contained herein have been approved by the Bureau of the Budget in accordance with the Federal Reports Act of 1942.

Done at Washington, D.C., this 23d day of March 1964.

M. R. CLARKSON,
Acting Administrator,
Agricultural Research Service.

[F.R. Doc. 64–2985; Filed, Mar. 26, 1964; 8:47 a.m.]

Title 14—AERONAUTICS AND SPACE

Chapter I—Federal Aviation Agency

SUBCHAPTER E—AIRSPACE [NEW]

[Airspace Docket No. 63–WE–110]

PART 71—DESIGNATION OF FEDERAL AIRWAYS, CONTROLLED AIRSPACE, AND REPORTING POINTS [NEW]

Revocation of Federal Airway Segment

On December 27, 1963, a notice of proposed rule making was published in the FEDERAL REGISTER (28 F.R. 14337) stating that the Federal Aviation Agency was considering an amendment to Part 71 [New] of the Federal Aviation Regulations which would revoke VOR Federal airway No. 10 north alternate from Lamar, Colo., to Garden City, Kans.

Interested persons were afforded an opportunity to participate in the rule making through submission of comments and all comments received were favorable.

In consideration of the foregoing, the following action is taken: § 71.123 (29 F.R. 1009) is amended as follows: In V–10 "Garden City, Kans., including an N alternate via INT of Lamar 076° and Garden City 296° radials;" is deleted and "Garden City, Kans.," is substituted therefor.

This amendment shall become effective 0001 e.s.t., May 28, 1964.

(Sec. 307(a), 72 Stat. 749; 49 U.S.C. 1348)

Issued in Washington, D.C., on March 20, 1964.

D. E. BARROW,
Acting Chief, Airspace Regulations and Procedures Division.

[F.R. Doc. 64–2944; Filed, Mar. 26, 1964; 8:45 a.m.]

[Airspace Docket No. 63–SW–88]

PART 75—ESTABLISHMENT OF JET ROUTES [NEW]

Alteration of Jet Route

On December 27, 1963, a notice of proposed rule making was published in the FEDERAL REGISTER (28 F.R. 14338) stating that the Federal Aviation Agency (FAA) proposed alteration of Jet Route No. 58 between Alexandria, La., and New Orleans, La.

Interested persons were afforded an opportunity to participate in the rule making through submission of comments but no comments were received.

The substance of the proposed amendment having been published, therefore, for the reasons stated in the notice, the following action is taken:

In § 75.100 (29 F.R. 1287 January 24, 1964) Jet Route No. 58 is amended as follows: In the text "Alexandria, La., to New Orleans, La." is deleted and "Alexandria La.; INT of the Alexandria 126° and the New Orleans, La., 295° radials; to New Orleans." is substituted therefore.

This amendment shall become effective 0001 e.s.t., May 28, 1964.

(Sec. 307(a), 72 Stat. 749; 49 U.S.C. 1348)

Issued in Washington, D.C., on March 20, 1964.

D. E. BARROW,
Acting Chief, Airspace Regulations and Procedures Division.

[F.R. Doc. 64–2945; Filed, Mar. 26, 1964; 8:45 a.m.]

[Airspace Docket No. 63–WE–99]

PART 75—ESTABLISHMENT OF JET ROUTES [NEW]

Revocation of Segment of Jet Route

On December 5, 1963, a notice of proposed rule making was published in the FEDERAL REGISTER (28 F.R. 12944) stating that the Federal Aviation Agency (FAA) proposed the revocation of Jet Route No. 23 between Cheyenne, Wyoming and Hill City, Kansas.

Interested persons were afforded an opportunity to participate in the rule making through submission of comments. All comments received were favorable.

The substance of the proposed amendment having been published, therefore, for the reasons stated in the notice, the following action is taken:

In § 75.100 (29 F.R. 1287 January 24, 1964) Jet Route No. 23 is amended to read:

Jet Route No. 23 (San Antonio, Tex., to Hill City, Kans.). From San Antonio, Tex., via Mineral Wells, Tex.; Oklahoma City, Okla.; Wichita, Kans.; to Hill City, Kans.

This amendment shall become effective 0001 e.s.t. May 28, 1964.

(Sec. 307(a), 72 Stat. 749; 49 U.S.C. 1348)

Issued in Washington, D.C., on March 20, 1964.

D. E. BARROW,
Acting Chief, Airspace Regulations and Procedures Division.

[F.R. Doc. 64–2946; Filed, Mar. 26, 1964; 8:45 a.m.]

Chapter V—National Aeronautics and Space Administration

PART 1204—ADMINISTRATIVE AUTHORITY AND POLICY

Subpart 7—Financial Interests of Employees

A new Subpart 7 added.

Sec.
1204.700 Scope of subpart.
1204.701 Statement of exemptions.
1204.702 Categories of financial interests exempted.

AUTHORITY: The provisions of this Subpart 7 are issued under 76 Stat. 1125; 18 U.S.C. 208(b)(2).

§ 1204.700 Scope of subpart.

This subpart sets forth general exemptions from the requirement of the conflict of interest law (18 U.S.C. 208(a)) that a NASA employee shall be disqualified from acting in a matter in his governmental capacity if he or certain other persons or organizations have a financial interest therein. The exemptions are granted in relation to specified categories of financial interests.

§ 1204.701 Statement of exemptions.

Pursuant to the authority contained in 18 U.S.C. 208(b)(2), it is hereby determined that the categories of financial interests described in § 1204.702 are, to the extent indicated, exempted from the application of the prohibition of 18 U.S.C. 208(a), because they are too remote or too inconsequential to affect the integrity of a NASA employee's services in any matter in which he may act in his governmental capacity. Therefore, the provisions of 18 U.S.C. 208(a) do not preclude the participation by a NASA employee, including a special Government employee and civilian and military personnel regularly detailed to NASA, in matters of a type covered by the prohibition of section 208(a) where the financial interest involved has been exempted hereunder.

§ 1204.702 Categories of financial interests exempted.

(a) The following exemptions apply to financial interests which are held directly by a NASA employee or his spouse or minor child, whether jointly or individually, by a NASA employee and his partner or partners as joint assets of the partnership:

(1) Ownership of bonds other than corporate bonds, regardless of the value of such interest. This exemption extends also to any financial interests that the organization whose bonds are so owned may have in other business entities.

(2) Ownership of shares in a mutual fund, regardless of the value of such interest. This exemption extends also to any financial interests that the mutual fund may have in other business entities.

(b) If a NASA employee or his spouse or minor child has a present beneficial interest or a vested remainder interest under a trust, the ownership under the trust of shares in a mutual fund will be extempt regardless of the value of such interest. This exemption extends also to any financial interests that the mutual fund may have in other business entities.

(c) If a NASA employee is an officer, director, trustee, or employee of an educational institution, or if he is negotiating for, or has an arrangement concerning prospective employment with such an institution, a direct financial interest which the institution has in any matter will not itself be exempt, but any financial interests that the institution may have in the matter through its holdings of securities issued by business entities will be exempt, provided the NASA employee is not serving as a member of the investment committee of the institution or is not otherwise advising it on its investment portfolio.

(d) If a NASA employee has continued to participate in a bona fide pension, retirement, group life, health or accident insurance plan, or other employee welfare or benefit plan that is maintained by a business or nonprofit organization of which he is a former employee, his financial interest in that organization will be exempt except to the extent that the welfare or benefit plan is a profit sharing or stock bonus plan. This exemption extends also to any financial interests that the organization may have in other business entities.

Effective date. The exemptions provided for herein shall be effective upon publication of this Subpart 7 in the FEDERAL REGISTER.

JAMES E. WEBB,
Administrator.

[F.R. Doc. 64-2947; Filed, Mar. 26, 1964; 8:45 a.m.]

PART 1204—ADMINISTRATIVE AUTHORITY AND POLICY

Subpart 8—Standards of Conduct for Employee Organizations and Code of Fair Labor Practices

New Subpart 8 added:

Sec.
1204.800 Scope of subpart.
1204.801 Policy.
1204.802 Standards of conduct for employee organizations.
1204.803 Code of fair labor practices.
1204.804 Special code enforcement procedures

AUTHORITY: The provisions of this Subpart 8 issued under Executive Order 10988 (3 CFR Part 130, Supplement 1962) and President's Memorandum of May 21, 1963 (Standards of Conduct for Employee Organizations and Code of Fair Labor Practices (28 F.R. 5127-5132)).

§ 1204.800 Scope of subpart.

This subpart sets forth NASA policies and procedures for the implementation of the President's Memorandum of May 21, 1963—Standards of Conduct for Employee Organizations and the Code of Fair Labor Practices (28 F.R. 5127-5132).

§ 1204.801 Policy.

(a) Primary reliance will be placed on informal settlement of differences and disputes by discussions between NASA management officials and employee organization representatives.

(b) Except in cases which are processed through an established grievance or appeal procedure, all hearings held in accordance with this Subpart 8 will be conducted by a hearing officer who is a NASA employee, but who is organizationally located outside the NASA installation concerned.

§ 1204.802 Standards of conduct for employee organizations.

(a) *General.* Part A of the President's Memorandum of May 21, 1963, "Standards of Conduct for Employee Organizations" (hereinafter referred to as the "Standards") shall apply to all employee organizations accorded informal, formal or exclusive recognition under Executive Order 10988 (3 CFR 130, Supplement 1962). An organization seeking recognition under Executive Order 10988 would have to meet the provisions of sections 2.2 and 2.4 of the "Standards."

(b) *Meeting requirements of "Standards."* An employee organization may meet the requirements of the "Standards" in one of the following ways:

(1) Stating, in writing, that it is a member of the AFL-CIO and that it is governed by and subscribes to the AFL-CIO Codes of Ethical Practices; or

(2) Providing a copy of its constitution and by-laws which contain explicit and detailed provisions satisfying the "Standards;" or

(3) Providing a copy of the rules and regulations of its organization which have been officially adopted by the membership and which contain explicit and detailed provisions satisfying the "Standards."

(c) *Requiring further evidence of compliance.* Once an employee organization has placed itself on record as complying with the "Standards," either by action under subparagraph (b) of this section or by other action satisfactory to the NASA installation with which it wishes to deal, further evidence of compliance with the "Standards" should be sought only under the conditions described in section 2.4(a) of the "Standards."

(d) *Proposing action in cases of noncompliance with "Standards."* Denial, suspension or withdrawal of recognition because of failure on the part of an employee organization to conduct itself in accordance with the "Standards" shall be made only by the Administrator, National Aeronautics and Space Administration (NASA). Therefore, when information of the nature covered by section 2.4(a) of the "Standards" comes to the attention of a NASA installation, appropriate inquiry or investigation shall be made to develop all pertinent facts. A full and complete report will then be made to the Administrator, NASA, via the Director of Personnel, NASA.

(e) *Denial, suspension or withdrawal of recognition.* The authority for denying, suspending, or withdrawing recognition of any employee organization for failure to comply with the "Standards," for providing required hearings under section 2.4(b) of the "Standards," and for all necessary consultations with the Secretary of Labor in connection with such matters is retained by the Administrator, NASA. Decisions made by the Administrator, NASA, under this authority shall be binding on all NASA installations and on the employee organization involved. The Director of Personnel, NASA, will formulate such procedures, on an ad hoc basis, as may be required to assist the Administrator, NASA, in carrying out this responsibility.

§ 1204.803 Code of fair labor practices.

(a) *General.* Part B of the President's Memorandum of May 21, 1963—"Code of Fair Labor Practices" (hereinafter referred to as the "Code") shall apply to all employee organizations which seek or are accorded informal, formal, or exclusive recognition under Ex-

ecutive Order 10988. The "Code" deals only with fair labor practices; it does not pertain to ethical and democratic practices for employee organizations covered by the "Standards." Enforcement of the "Code" shall be in accordance with the procedures set forth in this § 1204.803 and § 1204.804.

(b) *Cases subject to established grievance or appeals procedure.* (1) In cases initiated by a NASA employee or several employees with the same complaint, the established grievance procedure or appeals system, to the extent to which such procedure or system is applicable, shall be the exclusive procedure used.

(2) At the time a grievance or appeal is filed, the NASA employee or employees concerned will be required to specify, in writing, whether a fair labor practice complaint is involved and, if so, to indicate clearly the nature of the complaint. The employees filing the action shall not thereafter be allowed to process the same complaint under a different appeals procedure. This fact should be made clear to any employee or employees who appeal an action under the "Code."

(3) NASA employees who file an action under this subparagraph b through the NASA Grievance Procedure and who are not satisfied with the final decision as rendered in that procedure shall have the right of appeal to the Administrator, NASA. Such appeals will be:

(i) A review of the grievance record only,

(ii) Restricted to only that part of the grievance which relates to the alleged violation of the "Code," and

(iii) The final decision within NASA.

(c) *Cases involving any strike, work stoppage, slowdown, or related picketing.* All cases involving any strike, work stoppage, slowdown, or related picketing against the Government of the United States will be governed by the following procedures:

(1) *Action against individual employees.* Individual employees who engage in any of these acts will be subject to established disciplinary procedures which will apply without regard to the "Code" and this Subpart 8,

(2) *Action against employee organizations.* When the Director of a NASA Field Installation, or the Deputy Associate Administrator for Administration at NASA Headquarters, has evidence that members of a recognized employee organization who are employed in the respective installation are engaging in any act prohibited by section 3.2(b)(4) of the "Code" he will immediately advise the head of the employee organization of this fact. If there is no evidence that the employee organization ordered, approved or authorized the prohibited act and prompt steps are taken by it to disavow the act and orders its members to cease their participation, no further action will be taken against the organization. However, if there is evidence that the employee organization ordered, approved, or authorized the prohibited act, the appropriate NASA official will promptly report all facts with respect to the matter to the Administrator, NASA, via the Director of Personnel, NASA. Decisions made by the Administrator, NASA, in these matters shall be binding upon the employee organizations involved.

(d) *Applicability of special code enforcement procedures.* Certain classes of complaints are not appropriate to be processed through established grievance or appeals procedures. Therefore, the "Special code enforcement procedures," set forth in § 1204.804 will be used in the following types of cases arising under the "Code:"

(1) Complaints filed by one employee organization against another employee organization,

(2) Complaints filed by one or more employee organizations against a NASA installation,

(3) Complaints filed by a NASA installation against one or more employee organizations, and

(4) Complaints filed by an employee or several employees against an employee organization under section 3.2(b) of the "Code."

§ 1204.804 Special code enforcement procedures.

(a) *Processing complaints.* Complaints charging fair labor practice violations of the type listed in § 1204.803(d) will be processed under the "Special code enforcement procedures" as set forth in this § 1204.804. All other cases arising under the "Code" will be processed through the applicable procedure as set forth in § 1204.803 (b) and (c). No employee organization may seek review of a given fair labor practices complaint under more than one procedure, either concurrently or sequentially.

(b) *Use of informal methods.* It is expected there will be maximum use of informal contacts and discussions with and between the parties involved and any national or international organization with which a local organization is affiliated. Such means should produce an acceptable resolution or adjustment of the complaint without resort to more formal procedures.

(c) *Documentation.* All complaints of alleged violation of the "Code" filed under this procedure must:

(1) Be in writing,

(2) Be directed to the Administrator, NASA, via the Director of Personnel, NASA, and

(3) State in detail the incident or incidents which gave rise to the complaint.

A copy of the complaint must be furnished by the complainant to the party or parties to the proceeding.

(d) *Procedures—(1) Step 1—preliminary review.* Cases received will be reviewed by the Director of Personnel, NASA, and additional efforts will be made to resolve the matter by informal means. If the parties fail to come to an acceptable resolution, the Director of Personnel, NASA, will forward the case to the Administrator, NASA, with recommendation for a formal review.

(2) *Step 2—formal review.* Upon receipt of a case, the Administrator will designate an ad hoc Fair Labor Practice Review Officer (hereinafter referred to as the Review Officer) who will establish the facts of the case and recommend its disposition. The Review Officer will be a NASA employee who is organizationally located outside the NASA installation concerned. In carrying out his responsibility, the Review Officer will proceed in accordance with the applicable provisions of section 3.3 of the "Code" and the following procedures:

(i) The Review Officer will make a preliminary inquiry into the matter to determine if further investigation, including a hearing, is necessary to develop the facts.

(ii) If a hearing is determined to be necessary, the Review Officer will act as hearing officer using, as a general guide, the Civil Service Commission's Personnel Methods Series Pamphlet No. 16, "Conducting Hearings on Employee Appeals."

(iii) The Review Officer will set forth the results of the investigation or hearing, in writing, in the form of findings of fact, conclusions, and recommendations, and forward such report to the Administrator, NASA, for decision.

(3) *Final Decision.* The Administrator, NASA, will review the report and records of the case and will render a final decision consistent with the requirements of section 3.4 of the "Code". There is no appeal from this decision of the Administrator, NASA.

Effective date. The procedures provided for herein shall be effective upon publication of this Subpart 8 in the FEDERAL REGISTER.

HUGH L. DRYDEN,
Deputy Administrator.

[F.R. Doc. 64-2948; Filed, Mar. 26, 1964; 8:46 a.m.]

Title 39—POSTAL SERVICE

Chapter I—Post Office Department

PART 13—ADDRESSES

PART 15—MATTER MAILABLE UNDER SPECIAL RULES

PART 27—OFFICIAL MAIL

PART 48—UNDELIVERABLE MAIL

Miscellaneous Amendments

The regulations of the Post Office Department are amended as follows:

I. In § 13.1, paragraph (c) is amended to include reference to instructions for mail which must bear a return address. As so amended, paragraph (c) reads as follows:

§ 13.1 General information.

* * * * *

(c) All mail should bear the name and address of the sender. For instructions concerning mail which must bear a return address, see:

(1) Second-Class mail in envelopes or wrappers—§ 16.2(f).

(2) Fourth-Class mail—§ 15.5(a)(1).

(3) Air parcel post—§ 26.6(a).

(4) Mail of any class, when its return is desired—§ 48.3.

(5) Registered mail—§ 51.7(a).

(6) Insured mail—§ 52.1(b).

(7) COD mail—§ 53.2(c).

* * * * *

NOTE: The corresponding Postal Manual section is 123.13.

II. In § 13.4 paragraphs (c) and (d) are respectively amended to clarify information postmasters may furnish regarding number of patrons, and to include regulations for the use of the simplified form of address by Members and Members-elect of the House of Representatives. As so amended, paragraphs (c) and (d) read as follows:

§ 13.4 Simplified address.

* * * * *

(c) *Number of patrons.* On request postmasters will furnish without charge information as follows (see also §13.5(c)):

(1) Number of post office boxholder patrons.

(2) Route numbers, and number of boxholders on each rural and star route.

(3) Route numbers, and number of families on each rural route.

(4) Number of possible deliveries or possible stops with or without stores or office buildings within the total delivery area or on particular carrier routes.

(d) *Mailing under Congressional frank—(1) Members and Members-elect of the Senate.* All mail sent under the franking privilege by a Member or Member-elect of the Senate must be addressed to the recipient by name and post office address. See § 13.1. Franked mailings of a Member or Member-elect of the Senate may not be accepted when addressed in a simplified form for delivery either by rural or star route carrier, to any post office boxholder, or by city or village lettercarrier. This subparagraph is not applicable to nonfranked personal mailings by Members of the Senate upon which the postage is prepaid.

(2) *Members and Members-elect of the House of Representatives.* (i) Mail sent under the franking privilege of a Member or Member-elect of the House of Representatives may be addressed under the simplified forms in paragraphs (a)(1) and (b) of this section for delivery to patrons within the district which the Member or Member-elect was elected to represent. Mail so addressed will be delivered within that district to any or all of the following:

(*a*) Each boxholder on a rural or Star route or each family on a rural or Star route.

(*b*) Each post office boxholder.

(*c*) Each stop or possible delivery on city carrier routes.

(ii) The information in paragraph (c) of this section will, on request, be furnished for a Congressional district in those instances where a post office serves areas which are located in more than one district.

(iii) Simplified address mailings sent under the frank of a Member or Member-elect of the House of Representatives must be prepared as prescribed in paragraph (a)(2) of this section and each facing slip should show the Congressional district in which delivery is to be made.

(iv) Representatives elected at large may send franked mail with simplified address to patrons within the entire State which elected the Member.

(v) Franked mail of a Member or Member-elect addressed to a recipient outside of his Congressional district must be addressed by name and post office address. See § 13.1.

(vi) This subparagraph is not applicable to nonfranked personal mailings of Members or Members-elect of the House of Representatives upon which the postage is paid.

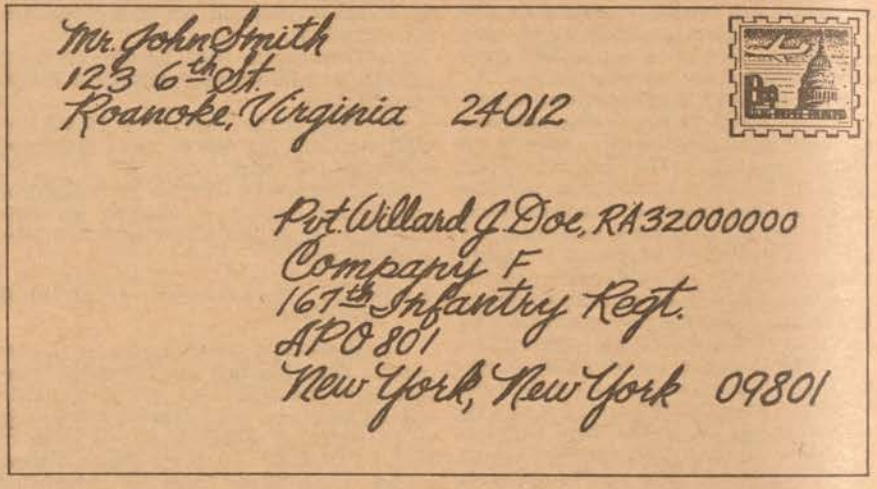
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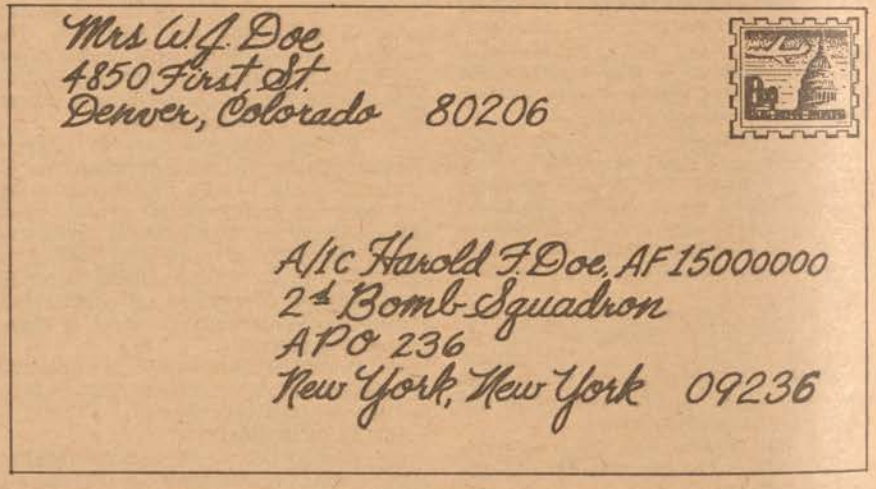
NOTE: The corresponding Postal Manual sections are 123.43 and 123.44.

III. In § 13.8 strike out the illustrations in paragraphs (a) and (b) and insert in lieu thereof the following to show the proper forms for addressing overseas military mail:

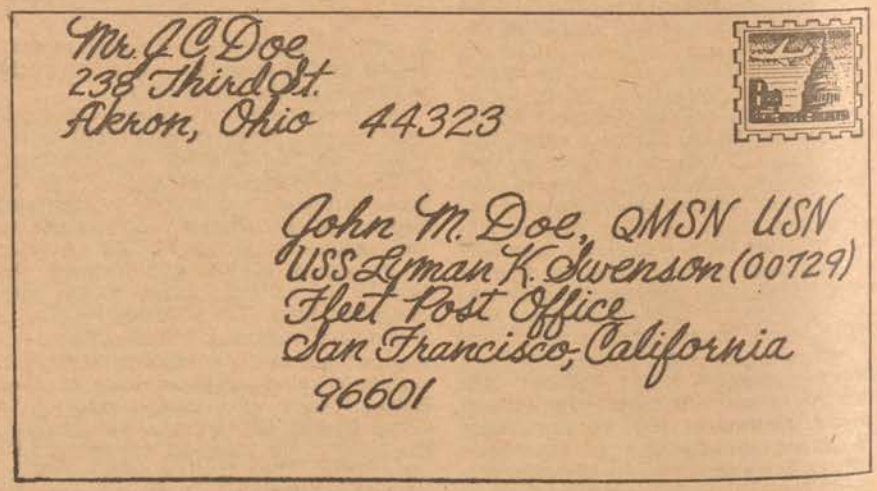
§ 13.8 Overseas military mail.

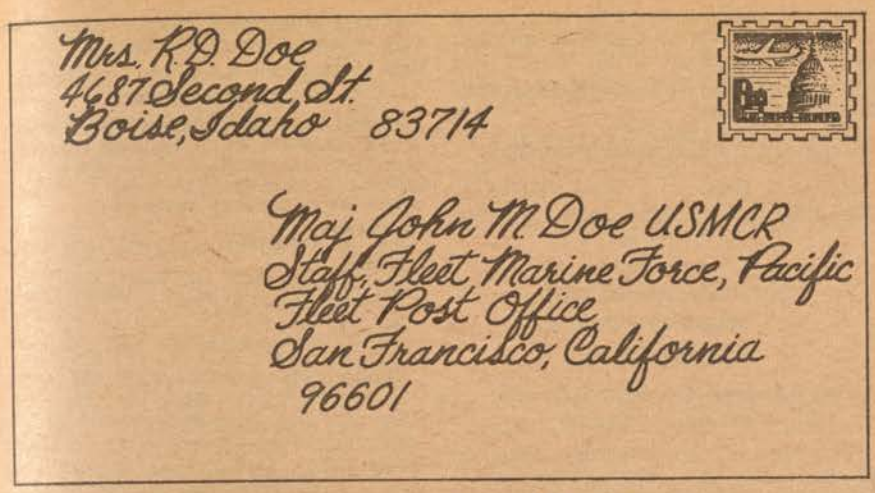
(a) *Army and Air Force.* * * *





(b) *Navy and Marine Corps.* * * *





§ 15.4 [Amended]

IV. In § 15.4 *Plant quarantines*, as amended by 28 F.R. 7837, amend subdivision (iv) of paragraph (c) (6) by inserting "Chula Vista" in the alphabetical list therein of terminal inspection places in California.

NOTE: The corresponding Postal Manual section is 125.456d.

V. Amend § 27.7 to read as follows:

§ 27.7 Former Presidents and widows of former Presidents.

All mail of former United States Presidents Herbert Hoover, Harry S. Truman, and Dwight D. Eisenhower; and all mail of Jacqueline Bouvier Kennedy, widow of former President John F. Kennedy, shall be accepted without prepayment of postage if it bears the written signature of sender, or a facsimile signature, in the upper right corner of the address side. Such matter may be dispatched by air if it bears the words "Air Mail" on the address side.

NOTE: The corresponding Postal Manual section is 137.7.

VI. Section 48.3 is amended to show that senders must place "Return Requested" on post and postal cards if return is desired and for the purpose of clarification. As so amended, § 48.3 reads as follows:

§ 48.3 Return address.

The return address of the sender must be shown on the address side of mail to secure its return. The following rules apply:

(a) The proper location is in the upper left corner on envelopes, cards, labels, tags, or wrappers. On post and postal cards and on second-class mail and third- and fourth-class mail of no obvious value, the sender must place "Return Requested" below the return address.

(b) The sender may in his return address request that mail (other than registered, insured, and certified) be held for not less than 3 days or more than 30 days. (See § 48.4(b) for registered, insured, and certified mail retention periods.) Examples:

Return in 3 days to:
Frank B. White,
2416 Front St.,
St. Louis, Mo. 63135

Return in 30 days to:
Frank B. White,
2416 Front St.,
St. Louis, Mo. 63135
Return Requested.

(c) Requests to lengthen or shorten retention perids specified by sender to not less than 3 nor more than 30 days will be honored only at the sender's and not addressee's request.

NOTE: The corresponding Postal Manual section is 158.3.

VII. In § 48.4, subdivisions (iv) and (v) of paragraph (a) (1) are amended to add regulations for retention periods of ordinary mail. As so amended, subdivisions (iv) and (v) read as follows:

§ 48.4 Retention periods.

(a) *Ordinary mail.* (1) * * *

(iv) Retained in general delivery not to exceed 30 days, at request of sender, if addressed in manner to indicate addressee is expected to call for mail, or if addressee normally calls there for mail.

(v) Retained as follows when not specifically addressed or when sender does not specify a retention period:

(*a*) Five days if for delivery by village, rural, or star route carrier.

(*b*) Ten days if intended for general delivery service at an office having city carrier service, except that the mail may be held up to 30 days if the addressee has given notice to the postmaster that he will be delayed in arrival.

(*c*) Fifteen days if intended for general delivery service at an office not having city carrier service.

NOTE: The corresponding Postal Manual sections are 158.411 (d) and (e).

VIII. In § 48.7, subparagraph (1) of paragraph (b) is amended to clarify the regulations for treatment of dead mail at last office of address. As so amended, subparagraph (1) reads as follows:

§ 48.7 Dead mail.

* * * * *

(b) *Treatment*—(1) *At last office of address.* At the end of retention period specified in § 48.4, mail is declared dead. Dead mail described in § 48.5 (a) through (f) is disposed of locally. First-class letters, first-class parcels, and other articles that have obvious value are forwarded on fixed schedules to dead letter or dead parcel post branches for final disposition.

* * * * *

NOTE: The corresponding Postal Manual section is 158.721.

(R.S. 161, as amended; 5 U.S.C. 22, 39 U.S.C. 501)

LOUIS J. DOYLE,
General Counsel.

[F.R. Doc. 64-2902; Filed, Mar. 26, 1964; 8:49 a.m.]

Title 31—MONEY AND FINANCE: TREASURY

Chapter V—Office of Foreign Assets Control, Department of the Treasury

PART 500—FOREIGN ASSETS CONTROL REGULATIONS

Importation of and Dealings in Certain Merchandise; Correction

Section 500.204(a) (2) (ii) is corrected as follows:

The words in the parenthetical clause following the item "Antiques, Chinese type," which read "within the provisions of par. 1811 of the Tariff Act of 1930" are corrected to read "under items 766.20–25 of Title I—Tariff Schedules of the United States, Tariff Act of 1930, as amended." The item as amended reads as follows:

§ 500.204 Importation of and dealings in certain merchandise.

(a) * * *

(2) * * *

Type of merchandise	*Excepted countries*
(ii) All of the following specified types of merchandise:	
* * * * *	
Antiques, Chinese type (except Chinese porcelain which qualifies under items 766.20–25 of Title I—Tariff Schedules of the United States, Tariff Act of 1930, as amended and which is decorated with the armorial bearing, crests, monograms, cyphers, or badges of European or American families or societies or bearing motifs based thereon, or with European or American political, memorial, or Masonic scenes or devices or with European or American figures, ships or other scenes, or with motifs or inscriptions in English, Latin, or any other European language).	None.
* * * * *	

[SEAL] MARGARET W. SCHWARTZ,
Director,
Foreign Assets Control.

[F.R. Doc. 64-2991; Filed, Mar. 26, 1964; 8:50 a.m.]

Title 43—PUBLIC LANDS: INTERIOR

Chapter I—Bureau of Land Management, Department of the Interior

APPENDIX—PUBLIC LAND ORDERS

[Public Land Order 3342]

[Sacramento 050013]

CALIFORNIA

Withdrawal for Forest Service Administrative and Public Service Sites, Recreation Areas, Campgrounds, and Roadside Zones

Correction

In F.R. Doc. 64–2171, appearing at page 3109 of the issue for Friday, March 6, 1964, the following correction is made in the land description headed "Roadside Zone Along the U.S. Highway No. 50, California Forest Highway No. 32": Under T. 11 N., R. 16 E., the entry for Section 24 should read as follows:

Sec. 24, S½N½, N½SE¼;

[Public Land Order 3350]

[New Mexico 0437684]

NEW MEXICO

Withdrawal for Forest Service Recreation Area

By virtue of the authority vested in the President and pursuant to Executive Order No. 10355 of May 26, 1952, it is ordered as follows:

Subject to valid existing rights, the minerals in the following described national forest lands are hereby withdrawn from prospecting, location, entry and purchase under the mining laws but not from leasing under the mineral leasing laws, in aid of programs of the Forest Service, Department of Agriculture, for utilization of the surface as a recreation area:

NEW MEXICO PRINCIPAL MERIDIAN

CIBOLA NATIONAL FOREST

McGaffey Recreation Area

T. 13 N., R. 16 W.,
Sec. 2, SW¼;
Sec. 3, W½, NE¼SE¼, W½SE¼, and W½SE¼SE¼;
Sec. 4, E½ and NW¼;
Sec. 9, E½NE¼ and E½SW¼NE¼;
Sec. 10, SW¼NW¼, W½SW¼ and E½SE¼;
Sec. 11, W½;
Sec. 14, NE¼NW¼, S½NW¼NW¼ and S½NW¼;
Sec. 15, NE¼.
T. 14 N., R. 16 W.,
Sec. 19, E½;
Sec. 20;
Sec. 28, N½, N½N½SW¼, SW¼NW¼SW¼, W½SW¼SW¼, and SE¼;
Sec. 29, E½ and NW¼;
Sec. 32, NE¼;
Sec. 33, E½NE¼, E½NW¼NE¼, SW¼NE¼, NW¼NW¼, S½NW¼, and S½;
Sec. 34, SW¼.

The areas described aggregate approximately 4,910 acres.

JOHN A. CARVER, Jr.,
Assistant Secretary of the Interior.

MARCH 23, 1964.

[F.R. Doc. 64–2971; Filed, Mar. 26, 1964; 8:48 a.m.]

[Public Land Order 3351]

[Riverside 03926]

CALIFORNIA

Withdrawal for Forest Service Recreation Areas

By virtue of the authority vested in the President and pursuant to Executive Order No. 10355 of May 26, 1952, it is ordered as follows:

Subject to valid existing rights, the minerals in the following-described national forest lands in the San Bernardino National Forest are hereby withdrawn from prospecting, location, entry, and purchase under the mining laws but not from leasing under the mineral leasing laws in aid of programs of the Forest Service for utilization of the surface as a picnic area and a campground, as indicated:

SAN BERNARDINO MERIDIAN

DESERT VIEW PICNIC AREA

T. 2 N., R. 2 E.,
Sec. 5 S½NW¼NW¼ and N½SW¼NW¼.

GROUT BAY PUBLIC CAMPGROUND

T. 2 N., R. 1 W.,
Sec. 14, W½NE¼NE¼ and S½SE¼NE¼NE¼.

The areas described aggregate approximately 65 acres.

JOHN A. CARVER, Jr.,
Assistant Secretary of the Interior.

MARCH 23, 1964.

[F.R. Doc. 64–2972; Filed, Mar. 26, 1964; 8:48 a.m.]

[Public Land Order 3352]

[Utah 0118454]

UTAH

Withdrawing Lands for Access Road to Natural Bridges National Monument, and for Protection of Scenic and Recreation Values

By virtue of the authority vested in the President, and pursuant to Executive Order No. 10355 of May 26, 1952, it is ordered as follows:

Subject to valid existing rights, the following-described public lands are hereby withdrawn from all forms of appropriation under the public land laws, including the mining but not the mineral leasing laws, for the establishment of an access road to the Natural Bridges National Monument, and for protection and preservation of scenic and recreation values:

SALT LAKE MERIDIAN

A strip of land 200 feet wide on either side of the centerline of an approach road connecting to Utah State Road 95, and traversing the following-described lands:

T. 37 S., R. 18 E., Partly surveyed;
Unsurveyed:
Sec. 3, NW¼SW¼, S½SW¼, and SW¼SE¼;
Sec. 4, NW¼NW¼, S½NW¼, NE¼SW¼, N½SE¼ and SE¼SE¼;
Sec. 5, N½N½;
Sec. 10, NE¼, NE¼NW¼ and NE¼SE¼.

Containing approximately 175 acres.

The withdrawal made by this order does not alter the applicability of the public land laws governing the use of the lands under lease, license, or permit, or governing the disposal of their mineral and vegetative resources other than under the mining laws.

JOHN A. CARVER, Jr.,
Assistant Secretary of the Interior.

MARCH 23, 1964.

[F.R. Doc. 64–2973; Filed, Mar. 26, 1964; 8:48 a.m.]

[Public Land Order 3353]

[Sacramento 076330]

CALIFORNIA

Power Site Restoration No. 602; Partly Revoking Power Site Reserve No. 88 (Project No. 237)

By virtue of the authority vested in the President by section 1 of the Act of June 25, 1910 (36 Stat. 847; 43 U.S.C. 141), and pursuant to Executive Order No. 10355 of May 26, 1952, and by virtue of the authority contained in section 24 of the Federal Power Act of June 10, 1920 (41 Stat. 1075; 16 U.S.C. 818) as amended, and pursuant to the determination of the Federal Power Commission docketed as DA–1032–California, it is ordered as follows:

1. The temporary Power Site withdrawal No. 88 of December 20, 1909, and the Executive Order of July 2, 1910, creating Power Site Reserve No. 88, are hereby revoked so far as they affect the following-described lands:

MOUNT DIABLO MERIDIAN

T. 17 N., R. 9 E.,
Sec. 16, S½SW¼;
Sec. 20, N½NE¼.

Containing 160 acres.

2. In DA–1032–California, the Federal Power Commission vacated the existing power withdrawal created by the filing of an application for a preliminary permit on July 25, 1921, for proposed Project No. 237, affecting the following-described land:

T. 17 N., R. 9 E.,
Sec. 16, S½SW¼.

Containing 80 acres.

3. Until 10:00 a.m. on September 21, 1964, the State of California shall have the preferred right of application to select any of the restored land for school land indemnity purposes, as provided by sec. 2(c) of the Act of August 27, 1958 (72 Stat. 928; 43 U.S.C. 851, 852). The State of California also has a more limited preferred right of application for the restored land for highway easement or for highway material site purposes as provided by sec. 24 of the Act of June 10, 1920, as amended May 28, 1948 (62 Stat. 275; 16 U.S.C. 818).

4. At 10:00 a.m. on September 21, 1964, the land shall be subject to the operation of the public land laws generally, subject to valid existing rights, the provisions of existing withdrawals, and the requirements of applicable law. All valid applications except preference right applications from the State, received prior to 10:00 a.m. on June 22, 1964, shall be considered as simultaneously filed at that time. Those filed thereafter shall be considered in the order of filing.

5. The lands have been open to applications and offers under the mineral leasing laws and to location under the United States mining laws subject to the provisions of the Act of August 11, 1955 (69 Stat. 682; 30 U.S.C. 621).

Inquiries concerning the lands should be addressed to the Manager, Land Office, Bureau of Land Management, Sacramento, California.

JOHN A. CARVER, Jr.,
Assistant Secretary of the Interior.

MARCH 23, 1964.

[F.R. Doc. 64-2974; Filed, Mar. 26, 1964; 8:49 a.m..]

[Public Land Order 3354]

[Sacramento 077398]

CALIFORNIA

Reservoir Site Restorations Nos. 38 and 39; Revoking Certain Reservoir Site Reserves

By virtue of the authority contained in the Act of October 2, 1888 (25 Stat. 526), as amended by the Act of August 30, 1890 (26 Stat. 391) and section 17 of the Act of March 3, 1891 (26 Stat. 1101; 43 U.S.C. 662, 663), it is ordered as follows:

1. The Departmental orders of January 10, 1890 and January 25, 1890, establishing Rattlesnake Reservoir Site No. 1 and the South Highland Lake Reservoir Site, respectively, are hereby revoked so far as they affect the following-described lands:

MOUNT DIABLO MERIDIAN

A. RATTLESNAKE RESERVOIR SITE NO. 1

T. 45 N., R. 11 E.,
Secs. 21 to 28, incl., and secs. 32 to 36, incl.
T. 44 N., R. 12 E.,
Secs. 5 to 8, incl., secs. 17 to 20, incl., and secs. 28 to 33, incl.
T. 45 N., R. 12 E.,
Secs. 30 and 31.

B. SOUTH HIGHLAND LAKE RESERVOIR SITE

T. 7 N., R. 20 E.,
Secs. 4 to 8, incl., unsurveyed.
T. 8 N., R. 20 E.,
Secs. 32 and 33, partly unsurveyed.

The areas described total in the aggregate approximately 22,791 acres.

The lands are national forest lands in the Modoc, Stanislaus, and Toiyabe National Forests.

2. At 10:00 a.m. on April 28, 1964, they shall be open to such forms of disposition as may by law be made of national forest lands.

JOHN A. CARVER, Jr.,
Assistant Secretary of the Interior.

MARCH 23, 1964.

[F.R. Doc. 64-2975; Filed, Mar. 26, 1964; 8:49 a.m.]

Proposed Rule Making

DEPARTMENT OF THE INTERIOR

National Park Service

[36 CFR Part 7]

YOSEMITE NATIONAL PARK, CALIFORNIA

Domestic Water Supplies and Sanitary Disposal of Sewage on Privately Owned Lands

Notice is hereby given that pursuant to the authority contained in section 3 of the Act of August 25, 1916 (39 Stat. 535; 16 U.S.C. 3), 245 DM-1 (27 F.R. 6395), National Park Service Order No. 14 (19 F.R. 8824), Regional Director, Western Region Order No. 3 (21 F.R. 1495), as amended, it is proposed to amend § 7.16 of Title 36, Code of Federal Regulations, as is set forth below. The purpose of this amendment is to establish sanitary regulations governing domestic water supplies and the disposal of sewage, including household waste, on privately owned lands within Yosemite National Park.

It is the policy of the Department of the Interior whenever practicable, to afford the public an opportunity to participate in the rule making process. Accordingly, interested persons may submit written comments, suggestions, or objections with respect to the proposed amendment to the Superintendent, Yosemite National Park, California, within thirty days of the date of publication of this notice in the FEDERAL REGISTER.

A new paragraph (j) is added to § 7.16 to read as follows:

§ 7.16 Yosemite National Park.

* * * * *

(j) *Domestic water supplies and sewage disposal systems*—(1) *Sewage disposal systems*—(i) *Construction.* Any dwelling or establishment constructed on privately owned land within Yosemite National Park for the purpose of housing one or more persons must be served by an approved sewage disposal system prior to occupancy. Such system may not be initially constructed or rebuilt without a permit issued by the Superintendent. Such permit shall be issued only after the receipt by the Superintendent of written notification by the County Health Officer that the plans for such construction or reconstruction are consistent with the requirements of the State and county health laws and ordinances applicable to systems not located on lands within the park.

(ii) *Existing systems.* Any sewage disposal system which was constructed and was in use prior to the effective date of this regulation shall be subject to inspection by the County Health Officer or his duly authorized representative for the purpose of ascertaining whether or not such existing sewage disposal system would meet the requirements of the State and county health laws and ordinances were such system not located on lands within the park. In the event such existing system is found by the Health Officer to be substandard and a hazard to health, the person, corporation, or other organization controlling the structure served by such system shall have one (1) year after service of a written notice by the Superintendent to comply with the requirements of the State and county health laws and ordinances. Such notice shall describe briefly the deficiency as noted by the County Health Officer and shall specify what steps must be taken to achieve conformity with health regulations. In the event the deficiency described in the notice is not remedied within the period set forth above, the structures affected by or served by such sewage system shall be deemed unfit for human habitation and shall be vacated until such deficiency is remedied and a certificate of approval is filed with the Superintendent.

(2) *Water supply facilities*—(i) *Construction of new facilities.* Domestic water supply facilities for the use of two (2) or more families or for use of the general public may not be constructed, installed, or reconstructed on the privately owned land within Yosemite National Park unless the plans for such facilities are consistent with the requirements of State and county health laws and ordinances which would be applicable if such water supply facilities were located on privately owned lands outside of the park. Facilities for such a new water supply system shall not be constructed or reconstructed without a permit issued by the Superintendent. A permit will be issued only after the receipt by the Superintendent of written notification by the County Health Officer that the plans for the construction or reconstruction of the water supply system are consistent with the requirements of the State and county health laws and ordinances applicable to structures and establishments located outside of the park.

(ii) *Existing systems.* All water supply systems for the use of two (2) or more families or for use by the general public, regardless of size and whether or not constructed and in use prior to the effective date of this regulation, shall be subject to inspection from time to time by the County Health Officer or his duty authorized representative for the purpose of ascertaining whether or not such water supply systems meet the requirements of the State and county health laws and ordinances. In the event any existing system is found by the Health Officer to be substandard and a hazard to health, the person, corporation, or other organization controlling the premises served by such system shall have one (1) year after service of a written notice by the Superintendent to comply with the requirements of the State and county health laws and ordinances. Such notice shall describe briefly the deficiency as noted by the County Health Officer and shall specify what steps must be taken to achieve conformity with health regulations. In the event the deficiency described by the notice is not remedied within the period set forth above, the structures affected by such deficiency shall be considered unfit for human habitation and shall be vacated until such deficiency is remedied and certificate of approval by the County Health Officer is filed with the Superintendent.

(3) *Inspection.* The County Health Officer or his duly authorized representative shall have the right of inspection for the purpose of ascertaining whether domestic water supplies and sewage disposal systems located on privately owned lands within Yosemite National Park meet State and county health standards. Inspection may be made by the County Health Officer to assure that construction of such systems, and facilities as may be built, rebuilt, or installed complies with approved plans.

(4) *Issuance of permits.* Permits for the construction or reconstruction of sewage or water supply systems shall be issued without charge by the Superintendent after written notification by the County Health Officer that the plans and specifications for any proposed system are deemed to be in conformity with the requirements of the State and county health laws and ordinances. Any applicant or permittee aggrieved by an action of the Superintendent in refusing or in conditioning a permit for the construction or reconstruction of a sewage disposal or a water supply system may appeal to the Regional Director, Western Region, National Park Service. Such appeal shall be filed in writing within 20 days after receipt of notice by the applicant or permittee of the action of the Superintendent. A final decision of the Regional Director may be similarly appealed to the Director of the National Park Service within 15 days after receipt of notice by the applicant or permittee of the Regional Director's decision.

(5) *Permits.* Permit to construct or reconstruct domestic water facilities or a sewage disposal system authorized to be issued by the Superintendent in this paragraph shall contain general regulatory provisions as hereinafter set forth and may include such special conditions as the Superintendent deems necessary. A permit shall be in a form substantially as follows:

No. ------

UNITED STATES DEPARTMENT OF THE INTERIOR NATIONAL PARK SERVICE

PERMIT TO CONSTRUCT, BUILD, OR REBUILD DOMESTIC WATER SYSTEMS AND SEWAGE DISPOSAL SYSTEMS

Permission is hereby granted ---------- of ---------- to construct, build, or rebuild a ----------

(Specify water system, sewage disposal system)

on the following described privately owned lands within Yosemite National Park, over which the United States exercises exclusive jurisdiction ----------

----

subject to the general provisions and any special conditions stated on the reverse hereof.

Issued at ---------- this ------ day of ----------, 19--.

(Superintendent)

The undersigned hereby accepts this permit subject to the terms, covenants, obliga-

tions, and reservations, expressed or implied therein.

[1] _____
Address _____
_____
Address _____

Two witnesses to signature(s):

_____
Address _____
_____
Address _____

[1] Sign name or names as written in body of permit; for copartnership, permittees should sign as "Members of firm"; for corporation, the officer authorized to execute contracts, etc., should sign, with title, the sufficiency of such signature being attested by the secretary, with corporate seal, in lieu of witnesses.

REVERSE OF PERMIT

GENERAL REGULATORY PROVISIONS OF THIS PERMIT

1. Permittee shall construct, build, or rebuild a domestic water system and/or a sewage disposal system in accordance with the standards of the Mariposa County Health Department.

2. Permittee shall not occupy constructed dwelling or establishment until completion of a bona fide, operational sewage disposal system.

3. Failure of the permittee to comply with all State and county laws and ordinances applicable to domestic water supplies and the disposal of sewage, including household waste, or with the conditions imposed by this permit will be grounds for requiring the permittee to vacate the dwelling or establishment until compliance.

4. Permittee shall take all reasonable precautions to prevent forest fires and shall assist the Superintendent to extinguish forest fires within the vicinity of the structure herein permitted.

5. This permit may not be transferred or assigned without the consent, in writing, of the Superintendent.

6. The following special provisions are made a part of this permit:

_____
_____

JOHN C. PRESTON,
Superintendent,
Yosemite National Park.

[F.R. Doc. 64-2956; Filed, Mar. 26, 1964; 8:47 a.m.]

DEPARTMENT OF AGRICULTURE

Agricultural Research Service

[7 CFR Part 362]

INSECTICIDES, FUNGICIDES, AND RODENTICIDES

Notice of Extension of Time for Filing Comments

On September 6, 1963, there was published in the FEDERAL REGISTER (F.R. Doc. 63-9541) a notice of proposed rule making concerning the revision of the regulations (7 CFR Part 362) for the enforcement of the Federal Insecticide, Fungicide, and Rodenticide Act. Interested persons were given until November 30, 1963, to submit written data, views, or arguments. In view of the comments received, certain changes were made and, on January 16, 1964, the proposed revision of said regulations was published in the FEDERAL REGISTER (F.R. Doc. 64-392) for further consideration. Interested persons were given twenty days in which to submit written data, views, or arguments.

Requests have been received for a further extension of time for submission of views with respect to the proposal to amend § 362.14(a)(5). Accordingly, the time within which comments may be submitted to the Director, Pesticides Regulation Division, Agricultural Research Service, United States Department of Agriculture, Washington, D.C., 20250, is hereby extended to include the thirtieth day after publication hereof in the FEDERAL REGISTER.

Done at Washington, D.C., this 23d day of March 1964.

M. R. CLARKSON,
Acting Administrator,
Agricultural Research Service.

[F.R. Doc. 64-2986; Filed, Mar. 26, 1964; 8:47 a.m.]

FEDERAL TRADE COMMISSION

[16 CFR Part 152]

HOSIERY INDUSTRY

Notice of Proposed Rule Making

Notice is hereby given that pursuant to the Federal Trade Commission Act, as amended, 15 U.S.C. 41, et seq., and provisions of Part 1, Subpart F, of the Commission's procedures and rules of practice (July 1963), the Federal Trade Commission proposes to revise § 152.7 Deceptive price representations of the Trade Practice Rules for the Hosiery Industry promulgated August 30, 1960, to read as follows:

§ 152.7 **Deceptive price representations.**

Members of the industry shall not represent directly or indirectly in advertising or otherwise that an industry product may be purchased for a specified price, or at a saving, or at a reduced price, when such is not the fact; or otherwise deceive purchasers or prospective purchasers with respect to the price of any product offered for sale; or furnish any means or instrumentality by which others engaged in the sale of industry products may make any such representation.

NOTE: On December 20, 1963 the Commission adopted Guides Against Deceptive Pricing which became effective on January 8, 1964 and which supersede the Guides on this subject as adopted October 2, 1958. The 1964 Guides are set forth as an appendix to these rules. [Rule 7]

Interested or affected parties may submit their views, suggestions, objections or other information concerning the proposed revision to the Chief, Division of Trade Practice Conferences and Guides, Bureau of Industry Guidance, Federal Trade Commission, Sixth Street and Pennsylvania Avenue NW., Washington, D.C., 20580, in writing not later than April 30, 1964. Due consideration will be given by the Commission to all comments received before final action is taken in this matter.

Approved: March 9, 1964.

By direction of the Commission.

[SEAL] JOSEPH W. SHEA,
Secretary.

[F.R. Doc. 64-2965; Filed, Mar. 26, 1964; 8:48 a.m.]

SECURITIES AND EXCHANGE COMMISSION

[17 CFR Part 240]

[Release 34-7275]

BROKERS AND DEALERS

Proposed Rule Making Regarding Fictitious Quotations

Notice is hereby given that the Securities and Exchange Commission has under consideration a proposal to adopt 17 CFR 240.15c2-7 (Rule 15c2-7 under the Securities Exchange Act of 1934, and particularly section 15(c)(2) of the Act), which authorizes the Commission to adopt rules and regulations designed to prevent fictitious quotations by brokers and dealers.

Under the proposed rule it would be unlawful for a broker or dealer to furnish a quotation to an inter-dealer-quotation-system unless certain conditions were met. First, the broker-dealer submitting the quotation would have to disclose whether it is submitted in furtherance of one or more of the following arrangements: (A) he is acting as a correspondent for another broker-dealer, (B) the quotation is furnished for the joint account of the broker-dealer and another broker-dealer, or (C) it is furnished in furtherance of some other arrangement (including a guarantee of profit, guarantee against loss, a commission, markup, or markdown) with any other broker-dealer, or as an accommodation for any other broker-dealer. Secondly, the broker-dealer furnishing the quotation would have to disclose the identity of the other broker or dealer, except in those arrangements (under (C) above) where neither the broker-dealer submitting the quotation, nor the other broker-dealer, has any similar arrangement involving the same security with any third broker or dealer. (Even where the identity of the other broker-dealer need not be disclosed, the existence of the arrangement must be disclosed.) Thirdly, the quotation would have to be submitted to an inter-dealer-quotation-system which makes it a general practice, by symbol or otherwise, to differentiate the different types of arrangements referred to above, and discloses the identity of the broker or dealer for whom the quotation is furnished where the identity of such broker-dealer is required to be supplied to the quotation system under the provisions of the rule. The inter-dealer-quotation-system could use any simple feasible identification,

such as a numbering or coding system, to identify particular broker-dealers.

The proposed rule implements a recommendation of the Report of the Special Study of Securities Markets designed to improve the reliability and informativeness of the wholesale quotations system through which dealers advertise their buying or selling interests in securities traded over-the-counter. The report points out that the wholesale quotations system is important because it tells at any given time and over spans of time what dealer interest exists, the basic price levels at which particular securities are capable of being bought and sold, and the spread between these levels. The report also states that the depth of dealer interest and the identity of dealers making a market are extremely pertinent in evaluating the marketability of a particular security. However, the report notes that broker-dealers inserting quotations in wholesale quotation systems are not required to differentiate quotations entered on behalf of another broker-dealer nor are they required to indicate the kind of arrangements involving this practice.

While the report recognizes that there may be legitimate reasons for a broker-dealer to insert a quotation for another firm, it also points out that this practice may create a misleading impression (such as when one firm has a number of firms appear in the quotation system for a particular security in order to give an appearance of increased trading interest and activity in such security), and may be used for other improper purposes. The report therefore recommended that broker-dealers using an inter-dealer-quotation-system should be required to designate quotations entered on behalf of another, with clear differentiation between correspondent arrangements and other arrangements involving this practice, so that there will be a clear indication where two or more quotations in different names represent a single quotation.

The text of the proposed rule is as follows:

§ 240.15c2–7 Identification of quotations.

(a) It shall constitute an attempt to induce the purchase or sale of a security by making a "fictitious quotation," within the meaning of section 15(c)(2) of the Act, for any broker or dealer to furnish or submit, directly or indirectly, any quotation to an inter-dealer-quotation-system unless:

(1) The inter-dealer-quotation-system is informed, if such is the case, that the quotation is furnished or submitted

(i) by a correspondent broker or dealer for the account or on behalf of another broker or dealer, and if so, the identity of such other broker or dealer; and/or

(ii) for the joint account of the broker or dealer furnishing or submitting the quotation and another broker or dealer, and if so, the identity of such other broker or dealer; and/or

(iii) in furtherance of any other arrangement (including a guarantee of profit, guarantee against loss, a commission, markup or markdown) between the broker or dealer furnishing or submitting the quotation and any other broker or dealer, or as an accommodation for any other broker or dealer, and if so, the identity of such other broker or dealer, except that the identity of such other broker or dealer need not be supplied if neither the broker or dealer submitting the quotation, nor the other broker or dealer, has any similar arrangement involving the same security with any third broker or dealer; and

(2) The inter-dealer-quotation-system to which the quotation is furnished or submitted makes it a general practice to disclose with each published quotation, by appropriate symbol or otherwise, all of the specific categories (subparagraph (1)(i), (ii) and (iii) of this paragraph) in furtherance of which the quotation is submitted, and the identity of the broker or dealer for whom the quotation is furnished or submitted where the identity of such broker or dealer is required to be supplied to the inter-dealer-quotation-system under the provisions of subparagraph (1) of this paragraph.

(b) For purposes of this section:

(1) The term "inter-dealer-quotation-system" shall mean any system of general circulation to brokers and dealers which regularly disseminates quotations.

(2) The term "quotation" shall mean any bid or offer, or any indication of interest (such as OW or BW) in any bid or offer.

(3) The term "joint account" shall mean an agreement, option, or right (whether or not in writing), pursuant to which two or more brokers or dealers are to share in the purchase, sale or ownership of securities with equal or proportionate risk or financial participation.

(Secs. 15(c)(2), 23(a), 48 Stat. 895, 901, as amended, 15 U.S.C. 78o, 78w)

All interested persons are invited to submit their views and comments in writing to the Securities and Exchange Commission, Washington, D.C., 20549, on or before April 20, 1964. Except where it is requested that such communications not be disclosed, they will be considered available for public inspection.

By the Commission.

[SEAL] ORVAL L. DUBOIS, *Secretary.*

MARCH 24, 1964.

[F.R. Doc. 64–2982; Filed, Mar. 26, 1964; 8:50 a.m.]

Notices

DEPARTMENT OF THE TREASURY

Coast Guard

[CGFR 64–13]

EQUIPMENT, INSTALLATIONS, OR MATERIALS

Approval and Termination of Approval Notice

1. Various items of lifesaving, firefighting, and miscellaneous equipment, installations, and materials used on merchant vessels subject to Coast Guard inspection or on certain motorboats and other pleasure craft are required by law and various regulations in 46 CFR Chapter I to be of types approved by the Commandant, United States Coast Guard. The procedures governing the granting of approvals and the cancellation, termination or withdrawal of approvals are set forth in 46 CFR 2.75–1 to 2.75–50, inclusive. For certain types of equipment, installations, and materials, specific specifications have been prescribed by the Commandant and are published in 46 CFR Parts 160 to 164, inclusive (Subchapter Q—Specifications), and detailed procedures for obtaining approvals are also described therein.

2. The Commandant's approval of a specific item is intended to provide a control over its quality. Therefore, such approval applies only to the item constructed or installed in accordance with the applicable requirements and the details described in the specific approval. If a specific item when manufactured does not comply with the details in the approval, then such item is not considered to have the Commandant's approval, and the certificate of approval issued to the manufacturer does not apply to such modified item. For example, if an item is manufactured with changes in design or material not previously approved, the approval does not apply to such modified item.

3. After a manufacturer has submitted satisfactory evidence that a particular item complies with the applicable laws and regulations, a Certificate of Approval (Form CGHQ–10030) will be issued to the manufacturer certifying that the item specified complies with the applicable laws and regulations and approval is given, which will be in effect for a period of 5 years from the date given unless sooner canceled or suspended by proper authority.

4. The purpose of this document is to notify all concerned that certain approvals were granted or terminated, as described in this document during the period from September 12, 1963, to January 21, 1964 (List No. 2–64). These actions were taken in accordance with procedures set forth in 46 CFR 2.75–1 to 2.75–50, inclusive.

5. The delegations of authority for the Coast Guard's actions, with respect to approvals may be found in section 632, of Title 14, U.S. Code, and Treasury Department Orders 120 dated July 31, 1950 (15 F.R. 6521), 167–14 dated November 26, 1954 (19 F.R. 8026), 167–15 dated January 3, 1955 (20 F.R. 840), 167–20 dated June 18, 1956, (21 F.R. 4894), CGFR 56–28 dated July 24, 1956 (21 F.R. 5659), or 167–38 dated October 26, 1959 (24 F.R. 8857), and the statutory authority may be found in R.S. 4405, as amended, 4462, as amended, 4488, as amended, 4491, as amended, secs. 1, 2, 49 Stat. 1544 as amended, sec. 17, 54 Stat. 166, as amended, sec. 3, 54 Stat. 346, as amended, sec. 3, 70 Stat. 152 (46 U.S.C. 375, 416, 481, 489, 367, 526p, 1333, 390b), sec. 4(e), 67 Stat. 462 (43 U.S.C. 1333(e), or sec. 3(c), 68 Stat. 675 (50 (U.S.C. 198), and implementing regulations in 46 CFR Chapter I or 33 CFR Chapter I.

6. In Part I of this document are listed the approvals granted which shall be in effect for a period of 5 years from the dates granted, unless sooner canceled or suspended by proper authority.

7. In Part II of this document are listed the approvals which have been terminated. Notwithstanding this termination of approvals of the items of equipment as listed in Part II such equipment may be used so long as such equipment is in good and serviceable condition.

PART I—APPROVALS OF EQUIPMENT, INSTALLATIONS, OR MATERIALS

SIGNALS, DISTRESS, HAND RED FLARE

Approval No. 160.021/5/2, Coston's hand red flare distress signal, 500 candlepower, 2-minute burning time, assembly dwg. No. FXC–740, Rev. 1, dated October 26, 1961, manufactured by Harvell-Kilgore Corporation, Toone, Tennessee, for Coston Supply Co., Inc., 31 Water Street, New York 4, New York, effective January 8, 1964. (Formerly Kilgore, Inc., and Harvell-Kilgore Sales Corp., respectively.) It supersedes Approval No. 160.021/5/2 dated July 2, 1962, to show change of name and address of manufacturer.)

Approval No. 160.021/6/2, International's hand red flare distress signal, 500 candlepower, 2-minute burning time, assembly dwg. No. FXC–740, Rev. 1, dated October 26, 1961, manufactured by Harvell-Kilgore Corporation, Toone, Tennessee, effective January 8, 1964. (Formerly Kilgore, Inc., and Harvell-Kilgore Sales Corp., respectively). (It supersedes Approval No. 160.021/6/2 dated July 2, 1962, to show change of name and address of manufacturer.)

SIGNALS, DISTRESS, FLOATING ORANGE SMOKE

Approval No. 160.022/5/0, Kilgore Model K–5 floating orange smoke distress signal, assembly dwg. No. GXC–323, Rev. 2, dated December 18, 1953, manufactured by Harvell-Kilgore Corporation, Toone, Tennessee, effective January 8, 1964. (Formerly Kilgore, Inc., and Harvell-Kilgore Sales Corp., respectively.) (It supersedes Approval No. 160.022/5/0, dated June 25, 1959, to show change of name and address of manufacturer.)

Approval No. 160.022/8/0, Model K–5A floating orange smoke distress signal, assembly dwg. No. GXC–413, Rev. 4, dated October 5, 1961, manufactured by Harvell-Kilgore Corporation, Toone, Tennessee, effective January 8, 1964. (Formerly Kilgore, Inc., and Harvell-Kilgore Sales Corp., respectively.) (It supersedes Approval No. 160.022/8/0 dated April 23, 1962, to show change of name and address of manufacturer.)

LIFE FLOATS

Approval No. 160.027/58/0, 12.0′ x 7.58′ (15¼′′ x 15′′ boy section) rectangular life float, fibrous glass reinforced plastic (FRP) shell with unicellular polyurethane foam core, 60-person capacity, dwg. No. B–80470, Rev. C dated December 31, 1963, manufactured by Welin Davit and Boat Division of Continental Copper and Steel Industries, Inc., Perth Amboy, New Jersey, effective January 10, 1964.

LIFEBOATS

Approval No. 160.035/15/3, 20.0′ x 6.5′ x 2.6′ steel, oar-propelled lifeboat, 20-person capacity, identified by general arrangement dwg. No. G–2020 dated April 1958 and revised December 31, 1963, manufactured by C. C. Galbraith and Son, Inc., 99 Park Place, New York 7, New York, effective January 21, 1964. (If mechanical disengaging apparatus is fitted, it shall be of an approved type and installed in accordance with drawings approved by the Commandant.) (It reinstates and supersedes Approval No. 160.035/15/2 terminated December 31, 1963.)

SIGNALS, DISTRESS, HAND-HELD ROCKET-PROPELLED PARACHUTE RED FLARE

Approval No. 160.036/2/0, Model K–500 hand-held rocket-propelled parachute red flare distress signal, general arrangement dwg. No. GK–500, Rev. 2, dated January 14, 1958, Parts List dwg. No. B/M 173 dated March 26, 1953, manufactured by Harvell-Kilgore Corporation, Toone, Tennessee, effective January 8, 1964. (Formerly Kilgore, Inc., and Harvell-Kilgore Sales Corp., respectively.) (It supersedes Approval No. 160.036/2/0 dated April 23, 1962, to show change of name and address of manufacturer.)

SIGNALS, DISTRESS, HAND ORANGE SMOKE

Approval No. 160.037/1/2, Coston's hand orange smoke distress signal, dwg. Nos. CXC–117, Rev. 4, dated June 17, 1957, and CXC–118, Rev. 5, dated October 5, 1961, manufactured by Harvell-Kilgore Corporation, Toone, Tennessee, for Coston Supply Co., Inc., 31 Water Street, New York 4, New York, effective January 8, 1964. (Formerly Kilgore, Inc., and Harvell-Kilgore Sales Corp., respectively.) (It supersedes Approval No. 160.037/1/2 dated September 27,

1963, to show change of name and address of manufacturer.)

Approval No. 160.037/2/2, International's hand orange smoke distress signal, dwg. Nos. CXC–117, Rev. 4, dated June 17, 1957, and CXC–118, Rev. 5, dated October 5, 1961, manufactured by Harvell-Kilgore Corporation, Toone, Tennessee, effective January 8, 1964. (Formerly Kilgore, Inc., and Harvell-Kilgore Sales Corp., respectively.) (It supersedes Approval No. 160.037/2/2 dated April 25, 1962, to show change of name and address of manufacturer.)

BUOYANT VESTS, KAPOK OR FIBROUS GLASS, ADULT AND CHILD

NOTE: Approved for use on motorboats of Classes A, 1, or 2 not carrying passengers for hire.

Approval No. 160.047/393/0, Type I, Model AK–1, adult kapok buoyant vest, U.S.C.G. Specification Subpart 160.047, manufactured by Swan Products Co., Inc., 130–30 180th Street, Springfield Gardens 34, N.Y., effective January 8, 1964. (It supersedes Approval No. 160.047/393/0 dated June 21, 1960, to show change of address of manufacturer.)

Approval No. 160.047/394/0, Type I, model CKM–1, child kapok buoyant vest, U.S.C.G. Specification Subpart 160.047, manufactured by Swan Products Co., Inc., 130–30 180th Street, Springfield Gardens 34, N.Y., effective January 8, 1964. (It supersedes Approval No. 160.047/394/0 dated June 21, 1960, to show change of address of manufacturer.)

Approval No. 160.047/395/0, Type I, Model CKS–1, child kapok buoyant vest, U.S.C.G. Specification Subpart 160.047, manufactured by Swan Products Co., Inc., 130–30 180th Street, Springfield Gardens 34, N.Y., effective January 8, 1964. (It supersedes Approval No. 160.047/395/0 dated June 21, 1960, to show change of address of manufacturer.)

Approval No. 160.047/405/0, Type I, Model AK–1, adult kapok buoyant vest, U.S.C.G. Specification Subpart 160.047, manufactured by Brunswick Corporation, Brunswick Sports Division, Eminence, Kentucky, for the S and M Company, Arthur and Kennedy Streets NE., Minneapolis, Minnesota, effective January 9, 1964. (It supersedes Approval No. 160.047/405/0 dated June 21, 1960, to show change of name and address of manufacturer.)

Approval No. 160.047/406/0, Type I, Model CKM–1, child kapok buoyant vest, U.S.C.G. Specification Subpart 160.047, manufactured by Brunswick Corporation, Brunswick Sports Division, Eminence, Kentucky, for the S and M Company, Arthur and Kennedy Streets NE., Minneapolis, Minnesota, effective January 9, 1964. (It supersedes Approval No. 160.047/406/0 dated June 21, 1960, to show change of name and address of manufacturer.)

Approval No. 160.047/407/0, Type I, Model CKS–1, child kapok buoyant vest, U.S.C.G. Specification Subpart 160.047, manufactured by Brunswick Corporation, Brunswick Sports Division, Eminence, Kentucky, for the S and M Company, Arthur and Kennedy Streets NE., Minneapolis, Minnesota, effective January 9, 1964. (It supersedes Approval No. 160.047/407/0 dated June 21, 1960, to show change of name and address of manufacturer.)

Approval No. 160.047/565/0, Type I, Model AK–1, adult kapok buoyant vest, U.S.C.G. Specification Subpart 160.047, manufactured by Buddy Schoellkopf Products, Inc., 8200 Sovereign Row, Dallas 7, Texas, for Coast-to-Coast Stores, 7500 Excelsior Boulevard, Minneapolis 26, Minnesota, effective January 10, 1964.

Approval No. 160.047/566/0, Type I, Model CKM–1, child medium kapok buoyant vest, U.S.C.G. Specification Subpart 160.047, manufactured by Buddy Schoellkopf Products, Inc., 8200 Sovereign Row, Dallas 7, Texas, for Coast-to-Coast Stores, 7500 Excelsior Boulevard, Minneapolis 26, Minnesota, effective January 10, 1964.

Approval No. 160.047/567/0, Type I, Model CKS–1, child small kapok buoyant vest, U.S.C.G. Specification Subpart 160.047, manufactured by Buddy Schoellkopf Products, Inc., 8200 Sovereign Row, Dallas 7, Texas, for Coast-to-Coast Stores, 7500 Excelsior Boulevard, Minneapolis 26, Minnesota, effective January 10, 1964.

BUOYANT CUSHIONS, KAPOK OR FIBROUS GLASS

NOTE: Approved for use on motorboats of Classes A, 1, or 2 not carrying passengers for hire.

Approval No. 160.048/229/0, group approval for rectangular and trapezoidal kapok buoyant cushions, U.S.C.G. Specification Subpart 160.048, sizes and weights of kapok filling to be as per Table 160.048–4(c)(1)(i), manufactured by Buddy Schoellkopf Products, Inc., 8200 Sovereign Row, Dallas 7, Texas, for Coast-to-Coast Stores, 7500 Excelsior Boulevard, Minneapolis 26, Minnesota, effective January 10, 1964.

Approval No. 160.048/230/0, special approval for 14" x 17" x 2" rectangular ribbed-type kapok buoyant cushions, 21-oz. kapok, Schoellkopf dwg. No. 160.048–7(C)–1, Rev. 1 dated November 6, 1963, manufactured by Buddy Schoellkopf Products, Inc., 8200 Sovereign Row, Dallas 7, Texas, for Coast-to-Coast Stores, 7500 Excelsior Boulevard, Minneapolis 26, Minnesota, effective January 10, 1964.

BUOYANT CUSHIONS, UNICELLULAR PLASTIC FOAM

NOTE: Approved for use on motorboats of Classes A, 1, or 2 not carrying passengers for hire.

Approval No. 160.049/61/0, group approval for rectangular and trapezoidal unicellular plastic foam buoyant cushions, U.S.C.G. Specification Subpart 160.049, sizes to be as per Table 160.049–4(c)(1), manufactured by Buddy Schoellkopf Products, Inc., 8200 Sovereign Row, Dallas 7, Texas, for Coast-to-Coast Stores, 7500 Excelsior Boulevard, Minneapolis 26, Minnesota, effective January 10, 1964.

BUOYANT VESTS, UNICELLULAR PLASTIC FOAM, ADULT AND CHILD

NOTE: Approved for use on motorboats of Classes A, 1, or 2 not carrying passengers for hire.

Approval No. 160.052/274/0, Type II, Model No. 100, adult unicellular plastic foam buoyant vest, Schoellkopf dwg. Nos. 1 and 4, Rev. 1 dated March 8, 1963, and Bill of Materials dated February 15, 1963, manufactured by Buddy Schoellkopf Products, Inc., 8200 Sovereign Row, Dallas 7, Texas, for Coast-to-Coast Stores, 7500 Excelsior Boulevard, Minneapolis 26, Minnesota, effective January 10, 1964.

Approval No. 160.052/275/0, Type II, Model No. 200, child medium unicellular plastic foam buoyant vest, Schoellkopf dwg. Nos. 2 and 4, Rev. 1 dated March 8, 1963, and Bill of Materials dated February 15, 1963, manufactured by Buddy Schoellkopf Products, Inc., 8200 Sovereign Row, Dallas 7, Texas, for Coast-to-Coast Stores, 7500 Excelsior Boulevard, Minneapolis 26, Minnesota, effective January 10, 1964.

Approval No. 160.052/276/0, Type II, Model No. 300, child small unicellular plastic foam buoyant vest, Schoellkopf dwg. Nos. 3 and 4, Rev. 1 dated March 8, 1963, and Bill of Materials dated February 15, 1963, manufactured by Buddy Schoellkopf Products, Inc., 8200 Sovereign Row, Dallas 7, Texas, for Coast-to-Coast Stores, 7500 Excelsior Boulevard, Minneapolis 26, Minnesota, effective January 10, 1964.

Approval No. 160.052/280/0, Type II, Model No. BDA, adult unicellular plastic foam buoyant vest with vinyl dip coating, Billy Boy dwg. Nos. 1 and 5 dated October 9, 1962, manufactured by Billy Boy Products, Inc., Quincy, Michigan, for Bulldog Marine Products, Inc., 5825 S. Western Avenue, Chicago 36, Illinois, effective January 15, 1964.

Approval No. 160.052/281/0, Type II, Model BDM, child medium unicellular plastic foam buoyant vest with vinyl dip coating, Billy Boy dwg. Nos. 2 and 5 dated October 9, 1962, manufactured by Billy Boy Products, Inc., Quincy, Michigan, for Bulldog Marine Products, Inc., 5825 S. Western Avenue, Chicago 36, Illinois, effective January 15, 1964.

Approval No. 160.052/282/0, Type II, Model BDC–1, child small unicellular plastic foam buoyant vest with vinyl dip coating, Billy Boy dwg. Nos. 3 and 5 dated October 9, 1962, manufactured by Billy Boy Products, Inc., Quincy, Michigan, for Bulldog Marine Products, Inc., 5825 S. Western Avenue, Chicago 36, Illinois, effective January 15, 1964.

VALVES, PRESSURE-VACUUM RELIEF AND SPILL

Approval No. 162.017/95/0, 4" vacuum relief valve, Fig. 4103–05X, cast aluminum with stainless steel trim, for liquefied inflammable gas and anhydrous ammonia at a minimum temperature of 50° F., S and J Co., dwgs. TM–4903–1, EM–1039, EM–1040, and Specification Sheets No. 10 (6/13/62) and No. 23 (10/27/61), manufactured by Shand and Jurs Co., 2600 Eighth Street, Berkeley 10, California, effective January 21, 1964.

Approval No. 162.017/96/0, 6" vacuum relief valve, Fig. 4100–07X, cast steel impact tested for −50° F. service, with aluminum and stainless steel trim, for liquefied inflammable gas and anhydrous ammonia at a minimum temperature of −50° F., S and J Co., dwgs. No. 4100–07X, EM–1037; and Specification Sheet No. 10 (6/13/62), manufactured by Shand and Jurs Co., 2600 Eighth Street,

Berkeley 10, California, effective January 21, 1964.

FIRE EXTINGUISHING SYSTEMS, CARBON DIOXIDE TYPE

Approval No. 162.038/1/0, Kidde Carbon Dioxide Type Fire Extinguishing Systems, Typical Installation dwg. Nos. R-98686, Rev. C dated February 27, 1963; R-98687, Rev. C dated February 27, 1963; and L-98688, Rev. C dated February 27, 1963; and Parts List revised December 31, 1963, manufactured by Walter Kidde and Company, Inc., Industrial and Marine Division, Belleville 9, New Jersey, effective January 7, 1964. (For parts used exclusively for the Type RB Audible and Visual, Supervised Smoke Detecting Systems, see Certificate of Approval No. 161.002/6/0.)

PART II—TERMINATIONS OF APPROVAL OF EQUIPMENT, INSTALLATIONS OR MATERIALS

WINCHES, LIFEBOAT

Termination of Approval No. 160.015/73/1, Type H-55A lifeboat winch for use with Type G-55P gravity davit, approved for a maximum working load of 5,500 pounds pull at the drums (2,750 pounds per fall), identified by sectional view dwg. 3684-3, Rev. C dated May 8, 1958, manufactured by Welin Davit and Boat Division of Continental Copper and Steel Industries, Inc., Perth Amboy, New Jersey, effective January 6, 1964. (Used only with Type G-55P gravity davit.) (Approval No. 160.032/158/1.)

DAVITS

Termination of Approval No. 160.032/158/1, gravity davit, Type G-55P, for use with Type H-55A lifeboat winch, approved for a maximum working load of 11,000 pounds per set (5,500 pounds per arm), using two-part falls, identified by general arrangement dwg. 3684, revision G dated July 30, 1963, manufactured by Welin Davit and Boat Division of Continental Copper and Steel Industries, Inc., Perth Amboy, New Jersey, effective January 6, 1964.

Dated: March 12, 1964.

[SEAL] E. J. ROLAND,
Admiral, U.S. Coast Guard,
Commandant.

[F.R. Doc. 64-2992; Filed, Mar. 26, 1964; 8:50 a.m.]

Office of the Secretary

REDEMPTION OF SILVER CERTIFICATES

Pursuant to the authority vested in me by the Act of June 4, 1963 (Public Law 88-36), silver certificates shall hereafter be exchangeable for silver on demand only at the United States Assay Office at New York and the United States Assay Office at San Francisco, and only for silver bullion of equivalent value computed at the monetary value of silver of $1.292929292 per fine troy ounce. Pursuant to the Act of August 27, 1935 (31 U.S.C. 773a), silver certificates will continue to be exchangeable at the United States Treasury for coins and currency other than silver dollars.

The Treasury will also continue to accept, under the procedure established July 22, 1963,[1] requests for silver bullion in fine silver bars of approximately 1,000 ounces accompanied by tenders of funds other than silver certificates. Under this procedure, a person desiring silver bullion in this form may request the Federal Reserve Bank of New York, at New York, or the Federal Reserve Bank of San Francisco, at San Francisco, to acquire for his account silver certificates in an equivalent amount and, upon acquisition of the required amount of silver certificates, to accept them for the account of the assay office for exchange for silver bullion. Funds other than silver certificates thus tendered must be in a form satisfactory to the Federal Reserve Bank and must be equal to the monetary value of the silver bullion requested raised to the next higher dollar.

Dated: March 25, 1964.

[SEAL] DOUGLAS DILLON,
Secretary of the Treasury.

[F.R. Doc. 64-3041; Filed, Mar. 25, 1964; 3:00 p.m.]

DEPARTMENT OF THE INTERIOR

Bureau of Land Management

CALIFORNIA

Notice of Termination of Proposed Withdrawal and Reservation of Lands

MARCH 20, 1964.

The United States Department of Agriculture has cancelled its Proposed Withdrawal Application Serial No. Sacramento 067685 for withdrawal and reservation of lands published as Federal Register Document 62-11818, on Page 11821 of the issue for November 30, 1962. Therefore pursuant to the regulations contained in 43 CFR Part 295, such lands will be at 10:00 a.m. on April 20, 1964, relieved of the segregative effect of the above-mentioned application.

The lands involved in this notice of termination are:

MOUNT DIABLO MERIDIAN

PLUMAS NATIONAL FOREST

T. 18 N., R. 7 E.,
Sec. 5, Lots 1, 2, 3, and 4, S½NE¼, S½NW¼ and SE¼;
Sec. 6, Lots 1, 2, 3, 4, 5, 6, and 7, S½NE¼, SE¼NW¼ and E½SW¼.
T. 19 N., R. 7 E.,
Sec. 31, Lots 5, 7, and 8, NE¼SW¼ and S½SE¼.

The area described totals approximately 1,580.70 acres in the Plumas National Forest and was patented in the Soper-Wheeler Company Forest Exchange, Serial No. Sacramento 066463.

WALTER E. BECK,
Manager, Land Office,
Sacramento.

[F.R. Doc. 64-2955; Filed, Mar. 26, 1964; 8:46 a.m.]

[1] 28 F.R. 7530.

OUTER CONTINENTAL SHELF OFF OREGON, WASHINGTON, AND LOUISIANA

Oil and Gas Lease Offer

The notice published in the FEDERAL REGISTER on February 19, 1964 (29 F.R. 2562) and the notice published on February 26, 1964 (29 F.R. 2703) as amended by correction notice published on March 5, 1964 (29 F.R. 3018) invited, respectively, the submission of sealed bids for the lease of oil and gas in certain areas of the Outer Continental Shelf adjacent to the States of Oregon and Washington, and adjacent to the State of Louisiana.

The foregoing notices are hereby amended to require that each bidder submit the certification required by § 60-1.6 (b)(1), Title 43 CFR, of the rules and regulations of the President's Committee on Equal Employment Opportunity as amended September 7, 1963 (28 F.R. 9812).

Copies of Form 4-1729 which may be obtained from the Manager, Bureau of Land Management, Pacific Coast Outer Continental Shelf Office, Bartlett Building, Room 1130, 215 West 7th Street, Los Angeles, California and; Manager, Bureau of Land Management, T-9003 Federal Office Building, 701 Loyola Avenue, New Orleans, Louisiana, may be utilized for this purpose.

CHARLES H. STODDARD,
Director,
Bureau of Land Management.

Approved: March 20, 1964.

JAMES K. CARR,
Acting Secretary of the Interior.

[F.R. Doc. 64-2943; Filed, Mar. 26, 1964; 8:45 a.m.]

REORGANIZATION AND EDITORIAL REVISION OF REGULATIONS

The revised regulations of the Bureau of Land Management (Title 43, Code of Federal Regulations) will be published as Part II of the FEDERAL REGISTER issue of Tuesday, March 31, 1964. These rules pertain to the public lands. The FEDERAL REGISTER issue will be the only official version of the revised rules available until approximately May 1, 1964, at which time a paperback supplement to Title 43, Code of Federal Regulations, will be available. Persons interested in the rules and regulations for public lands are urged to place orders for these rules as soon as possible with the Superintendent of Documents. The price for Part II of the FEDERAL REGISTER issue of March 31, 1964, will be 50 cents a copy.

Orders for copies of either or both the Part II of the FEDERAL REGISTER issue and the paperback supplement of Title 43 should be placed as soon as possible and should be addressed to:

Superintendent of Documents,
U.S. Government Printing Office,
Washington, D.C., 20402.

Do not address orders to the Department of the Interior. Remittance should be by check or money order payable to the Superintendent of Docu-

ments. Currency may be sent at the senders risk.

STEWART L. UDALL,
Secretary of the Interior.

[F.R. Doc. 64-3077; Filed, Mar. 26, 1964; 10:33 a.m.]

DEPARTMENT OF AGRICULTURE

Office of the Secretary

[Secretary's Memorandum 1489, Rev.]

ASSIGNMENT OF DEFENSE RESPONSIBILITIES IN USDA

Section 1—General—1. *Purpose.* This Memorandum outlines the defense responsibilities of the Department of Agriculture and the organization for carrying them out at the national, regional, State and county levels. It establishes responsibility for Departmental direction and coordination, and assigns major defense functions to USDA agencies doing related work, so as to build full capability into existing organization. Other defense assignments may be made from time to time. Defense responsibilities will be regarded as equal in importance to regular programs and activities.

2. *Summary of USDA defense responsibilities.* The Department of Agriculture has been delegated defense program responsibilities relating to:

a. Processing, storage and distribution of food from the farm through the wholesaler level;

b. Food production on farms;

c. Domestic distribution of farm equipment and fertilizer;

d. Use of facilities associated with food production, processing, storage, and distribution and domestic distribution of farm equipment and fertilizer;

e. Salvage of food and rehabilitation of food facilities;

f. Stockpiling of food;

g. Protection of crops, livestock, and products thereof from biological and chemical warfare;

h. Purity and wholesomeness of livestock, meat and meat products, poultry and poultry products in establishments subject to USDA inspection and commodities owned by the Commodity Credit Corporation or the Secretary. This includes monitoring for fallout on such foods;

i. Research on matters relating to defense;

j. Defense information and education program;

k. Emergency credit;

l. Rural fire defense and timber production, including production and utilization of forest products;

m. Emergency use of soils and water;

n. Agricultural statistics relating to defense;

o. Radiological defense for agricultural purposes;

p. Assessment of effects of attack on assigned resources;

q. Claiming manpower, equipment, supplies and services needed to support food and other program responsibilities;

r. Analyzing food requirements and supplies;

s. Cooperation with the Office of Emergency Planning on economic stabilization and rationing policies.

Section 2—Responsibilities at National Headquarters—3. *Direction, coordination and liaison*—a. *The Special Assistant to the Secretary on Defense* (referred to hereafter as Special Assistant) is responsible to the Secretary for directing the total defense program of USDA. This includes maintaining liaison with executive departments and the Congress with respect to policy matters, supervision and direction of USDA National, State and County Defense Boards, the USDA defense representative at the regional level, the USDA part of the National Defense Executive Reserve Program, and providing policy guidance to USDA agencies in carrying out specific defense assignments. In an emergency, the Special Assistant would serve as a principal staff assistant to the Secretary for defense matters including estimating effects of the emergency and serving as claimant for requisites for the food and other USDA programs.

b. *USDA National Defense Board.* A USDA National Defense Board made up of the heads of agencies with major defense assignments has been established to provide help and counsel as may be required by the Special Assistant in directing and coordinating the defense work of the Department. This Board will advise the Secretary on defense matters. Members of the Board as heads of their agencies will be responsible for carrying out the pre-emergency defense planning and providing technical direction to agency representatives in the field as needed to carry out their agency and the Departmental program.

4. *Agricultural Marketing Service.* The Agricultural Marketing Service is responsible for pre-emergency and emergency operations relating to management of food from the time it enters marketing channels until it ceases to be a USDA responsibility: *Provided, however,* That ASCS shall be responsible for seed and feed, and provided further that responsibility for grain and grain products shall be shared with the ASCS as follows: ASCS shall be responsible for the storage and movement of all grain in raw form including grain and grain products used for feed and seed. AMS shall determine civilian requirements for grain and will advise ASCS concerning movement of grain for processing into products for human consumption and shall be responsible for the processing, storage, and distribution of grain products for human consumption.

Subject to the above limitations, the AMS responsibilities include:

a. Emergency food orders and plans relating to food processing, storage, and distribution through the wholesaler level and the direct procurement of food as necessary under emergency conditions;

b. Analysis of food processing, storage, and distribution capability, and developing emergency programs as needed for these areas;

c. Programs for emergency salvage of food that is an AMS responsibility, and for the use and rehabilitation of food facilities for which AMS is assigned responsibility;

d. Programs to provide assistance to food processing, storage, and distribution industries and advising food industry groups of USDA plans for post-attack food management;

e. Determination of requirements of the food processing, storage, and distribution industries for nonfood requisites including manpower, equipment, supplies, services, and credit and reporting these requirements to the ASCS for consolidation with requirements submitted by other USDA agencies;

f. Development, in cooperation with ASCS, of plans for meeting emergency transportation needs of farmers and food handlers;

g. Presentation of claims for food for the civilian population to the Economic Research Service;

h. Cooperation with ERS in the development of recommendations concerning economic stabilization and rationing policies;

i. Inspection and grading of agricultural commodities and inspection to insure the purity and wholesomeness of poultry and poultry products in slaughtering and processing plants subject to continuous AMS inspection.

j. Maintenance of a capability for radiological monitoring of the poultry slaughtering and processing plants subject to continuous AMS inspection and for agricultural commodities (including grain owned by the Commodity Credit Corporation or USDA (except those stored on farms, ranches, or at bin sites);

k. Development and management in the pre-emergency period of programs relating to stockpiles of processed foods and the management of such stockpiles in the emergency period. This includes cooperation with ASCS in rotation of CCC stocks of processed foods;

l. Designation and training of staff (including Executive Reservists) to carry out AMS emergency assignments;

m. Market quality and transportation and facilities research on matters related to AMS defense responsibilities.

5. *Agricultural Research Service.* The Agricultural Research Service is responsible for pre-emergency and emergency operations covering:

a. Defense against biological and chemical warfare in relation to crops, livestock and products thereof and determination of the extent and effects of biological and chemical warfare agents employed by an enemy on agriculture;

b. Inspection to insure the purity and wholesomeness of livestock, meat and meat products in slaughtering and processing plants subject to continuous inspection of ARS;

c. Research in support of defense needs and anticipated emergency operations except as noted under "Agricultural Marketing Service", "Economic Research Service", "Forest Service", and the "Cooperative State Experiment Station Service";

d. Determination of requirements for and information and advice on equipment, chemicals and other requisites needed in support of the assigned activities;

e. Maintaining a capability for radiological monitoring at meat slaughtering and processing plants and stockyards subject to continuous ARS inspection;

f. Organization and direction of a system of radiological montoring, including (1) arrangements with OCD–DOD for the acquisition,use, and disposition of monitoring equipment; (2) training of instructors in the use of monitoring equipment and general assistance to agencies of the Department in coordinating radiological training; and (3) development and formulation of guidelines for use in determining the most efficient countermeasures for production, processing, and distribution of agricultural commodities. These guidelines are the results of research studies conducted in cooperation with other Federal departments, including the Department of Defense, the Atomic Energy Commission, and the Department of Health, Education, and Welfare;

g. Administrative functions on behalf of the Secretary relating to radiological safety within the Department.

6. *Agricultural Stabilization and Conservation Service.* The Agricultural Stabilization and Conservation Service is responsibile for pre-emergency and emergency operations relating to production of crops and livestock, and to the processing, storage, and distribution of feed and seed and to the domestic distribution of farm equipment and fertilizer. ASCS responsibilities include:

a. Production goals and food production program actions involving use of production facilities;

b. Assistance to farmers, grain storage industry, the domestic farm equipment and fertilizer distribution industries and the feed and seed industries including determination of requirements for manpower, equipment, supplies, and services;

c. Programs relating to the management and stockpiling of CCC-owned commodities. Such plans shall be coordinated with AMS stockpile management operations;

d. Programs for emergency period controls on feed and seed and on domestic distribution of farm equipment and fertilizer, and for advising industry of control plans;

e. Programs for salvaging of food and for use and rehabilitation of facilities within the areas of ASCS' assignment, and for farm land;

f. Programs for handling, storage and distribution of all grain prior to export, processing for human consumption or industrial use. Grain for livestock feed including mixed feed and grain for seed are assigned to ASCS at all levels;

g. Supplying ERS with information on livestock, feed, and seed requirements for food production purposes and on food production capabilities, based on known or assumed level of availability of essential production requisites;

h. Cooperation with ERS in developing recommended economic stabilization and rationing policies;

i. Designation and training of staff (including Executive Reservists) to carry out ASCS' emergency assignments.

The following additional functions will be performed by ASCS as a coordinating service for the Special Assistant:

j. Consolidation of all claims for manpower, equipment, supplies and services needed to support food and other program responsibilities of USDA. Supplying to AMS, ARS, ERS, and FS information on availability of non-food requisites for the USDA programs;

k. Representing USDA at interagency meetings relative to defense, as designated or upon request;

l. Servicing of USDA State and County Defense Boards;

m. Developing a readiness of assigned USDA personnel to function as a USDA Regional Defense Board to provide policy direction if, in an emergency, USDA State Defense Boards are cut off from National direction; maintaining liaison with regional offices of OEP and OCD (DOD) and representatives of other Federal agencies at the regional level;

n. Coordinating activities relating to assessment of attack effects on food and related facilities and other resources that are USDA responsibilities and processing data from sources within USDA needed for defense;

o. Assembly of defense reports of various USDA agencies on defense activities, preparing defense reports for the Department and advising on the maintenance of records needed for emergency action.

7. *Cooperative Extension Service.* The Cooperative Extension Service is responsible for pre-emergency and emergency operations through the State Extension Services covering:

a. Information to farmers, other rural people and individual members of the food industry concerning their role in an emergency and educational assistance in reducing vulnerability of homes, crops, livestock and forests to either covert or overt attack;

b. Maintaining close working relationships with organizations and groups serving the community and information media to obtain understanding and support of USDA defense activities;

c. Information and education services essential to carrying out the defense programs of USDA;

d. Information and education services essential to application of science and technology to meet emergency agricultural production goals;

e. Under delegation from the Office of Civil Defense, carrying out the rural shelter program.

8. *Cooperative State Experiment Station Service.* The Cooperative State Experiment Station Service is responsible for utilizing the services of cooperating State agencies in carrying out the Department's emergency defense responsibilities. It shall also encourage research by cooperating agencies to support the program of the U.S. Department of Agriculture and assure coordination of such work with the USDA defense program responsibilities.

9. *Economic Research Service.* The Economic Research Service is responsible for conducting economic analysis and maintaining related economic data in support of defense programs and emergency operations, including current and projected supplies of and requirements for food and fiber, production capacity and adjustment potentials for food and fiber, and needs for and substitution possibilities for farm production goods and marketing services, both domestically and for foreign countries. Such data shall be developed cooperatively with the appropriate agencies of the Department.

The following functions shall be performed by ERS for the Special Assistant:

a. Maintaining a centralized system to provide intelligence currently on the agricultural and overall food situation and making appropriate projections based on such intelligence;

b. Recommending basic food allocations to major food claimants on the basis of ERS estimates of supplies and requirements, taken into consideration the claims and other data furnished by AMS, ASCS, FAS, and other Federal agencies with assigned food claimancy responsibilities;

c. Recommending economic stabilization and rationing policies after consultation with AMS, ASCS, and FAS on effects of proposed recommendations. Upon request, representing USDA at interagency meetings relative to these recommendations.

10. *Farmers Home Administration.* The Farmers Home Administration is responsible for pre-emergency and emergency operations covering:

a. Emergency credit to farmers in support of the food production program;

b. Technical assistance relating to guarantees and other credit arrangements for food processors and distributors in support of the food management program.

11. *Foreign Agricultural Service.* The Foreign Agricultural Service is responsible for pre-emergency and emergency operations relating to:

a. Assistance to ERS in the acquiring and analysis of information related to food and agricultural commodities on a worldwide basis by commodities;

b. In cooperation with the Department of State, the assembling and analyses of food requirements for foreign allies and making recommendations regarding allocations;

c. In cooperation with the Canadian Government, assemble and present Canadian food requirements whenever food allocations are to be made;

d. Export controls under the Export Control Act, and import controls of agricultural commodities;

e. Support of the activities of international defense organizations, such as NATO and SEATO and their respective suborganizations concerned with food and agriculture whether carried on in this or other countries.

12. *Forest Service.* The Forest Service is responsible for pre-emergency and emergency operations covering:

a. Prevention and control of fires in rural areas caused by effects of enemy

attack (in cooperation with State government and appropriate Federal agencies) and determining damage to National Forests and other forested areas resulting from enemy attack;

b. Emergency protection, management, and utilization of National Forest timber, range, water, and related resources;

c. Emergency production, availability and utilization of timber and timber products by agreement with the Department of Commerce which has primary responsibility under Executive orders;

d. Determination of requirements for and information and advice on equipment, manpower, fuels, chemicals, and other requisites needed for carrying out the assigned activities;

e. Guidance and coordination of monitoring for rural fire control and operational monitoring on lands within National Forest boundaries and all State or privately owned forest and range land protected by the Forest Service under cooperative agreement;

f. Research in support of defense and emergency operations relating to management, utilization of forest resources, and defense against rural land fires.

13. *Rural Electrification Administration.* The Rural Electrification Administration is responsible for pre-emergency and emergency operations covering:

a. Emergency credit to REA-financed rural electrification and communications systems;

b. Technical assistance and advice on restoration of electric power and telephone service, and in meeting emergency conditions, including facilities protection; estimating electric power requirements and supply capabilities of REA-financed systems; and preparation of plans to claim materials, manpower, equipment, supplies and services needed by REA-financed systems and to meet the requirements of their customers.

14. *Soil Conservation Service.* The Soil Conservation Service is responsible for pre-emergency and emergency operations relating to:

a. Radiological monitoring of agricultural lands and water, farm commodities stored or harvestable on farms, ranches, and at bin sites, and advising on safety for livestock;

b. Providing technical assistance to farmers and others in the selection of land for food and fiber production; and use, conservation, disposal and control of water so as to assure adequate usable water and flood prevention.

15. *Statistical Reporting Service.* The Statistical Reporting Service is responsible for obtaining and supplying agricultural statistics necessary to support defense planning and emergency operations. This shall include development of procedures for adapting available statistics to defense needs. SRS will represent ERS personnel located in the State on the State Defense Board and will be prepared to arrange for ERS participation in evaluating farm production problems and potential in a cut-off situation.

16. *Office of Budget and Finance.* The Office of Budget and Finance is responsible for pre-emergency and emergency operations for the budgeting and financing of both administrative and program defense activities and for establishing budget and finance operations at USDA relocation sites.

17. *Office of General Counsel.* The Office of General Counsel is responsible for advice and assistance to legal aspects of food orders, and other proposed defense actions in pre-emergency and emergency periods.

18. *Office of Information.* The Office of Information is responsible for defense information services at the national level in pre-emergency and emergency circumstances and for providing assistance and advice regarding proper use of informational media in the field. It shall also determine and institute actions to obtain any additional informational materials not prepared by appropriate USDA agencies.

19. *Office of Personnel.* The Office of Personnel is responsible for pre-emergency and emergency activities relating to personnel, including information to employees on safety and survival actions, assistance to other USDA agencies in staffing USDA emergency headquarters and in developing procedures for recruiting and appointing personnel under post-attack conditions and developing plans for safety of families of USDA personnel.

It shall, as a service to the Special Assistant, develop a training program and materials for the USDA unit of the National Defense Executive Reserve, keep such records as are needed and manage necessary personnel operations. It shall also coordinate executive reserve training programs of individual USDA agencies with the Departmental program.

20. *Office of Plant and Operations.* The Office of Plant and Operations is responsible for pre-emergency and emergency activities relating to alerting employees in event of an emergency, office space for employees, office equipment and supplies, reproduction of material, coordination of employee transportation, communications and other administrative services essential under emergency conditions.

21. *Agency Coordination, organization and staffing*—a. *Coordination.* Each USDA agency or office with a defense assignment will coordinate its responsibility with related responsibilities of other USDA agencies or offices.

b. *Emergency Organization and Staffing.* The head of each agency or office given a defense assignment will consider the internal organization and staff which he would need in an emergency to carry out his assigned area of responsibility at the headquarters level. This organization will conform as nearly as possible to existing organization and existing organization units will be used whenever possible.

c. *Assistance to Agencies.* Where existing units appear to be insufficient to carry out defense assignments, the responsible agency will work out arrangements for either setting up defense committees, establishing an executive reserve, or utilizing staffs of other agencies to perform the necessary defense functions. The Special Assistant will continuously evaluate emergency functions of USDA agencies in order to determine priorities for emergency assignments to USDA personnel.

d. *Approval of Emergency Organization Plans.* When adaptations of current organization to meet an emergency have been worked out, they shall be submitted to the Special Assistant for approval.

Section 3—Responsibilities of USDA regional level offices—22. *USDA Regional Representation.* Since USDA agency operations are not normally carried out on a uniform regional basis, USDA has designated a person to become USDA Regional Defense Representative in an emergency at each of the eight OEP–OCD (DOD) Regional Offices. They shall be assisted at these sites by representatives of the following agencies:

(1) Agricultural Marketing Service
(2) Agricultural Stabilization and Conservation Service
(3) Agricultural Research Service
(4) Cooperative Extension Service
(5) Farmers Home Administration
(6) Forest Service
(7) Soil Conservation Service

In the event it is impossible to contact USDA national headquarters in an emergency, each Regional Defense Representative and the agency representatives designated to assist him will constitute a Regional Defense Board.

a. *Pre-Emergency.* The USDA Regional Defense Representatives and the USDA agency representatives designated to assist them will receive training and assistance in developing readiness to carry out emergency Board responsibilities from the ASCS national headquarters. Agency representatives will also receive technical advice from their individual agencies. (Liaison between USDA and regional offices of the OEP–OCD (DOD) and regional offices of other Federal agencies in the pre-emergency period will be carried out by ASCS national headquarters for the Special Assistant.)

b. *Emergency Responsibilities.* In an emergency, each USDA Regional Defense Representative will be responsible to an appropriate national level official for:

(1) Liaison with OEP–OCD (DOD) and other agencies of Government at the regional level;

(2) Claiming necessary manpower, equipment, supplies, and services needed to support essential USDA functions within the region;

(3) Keeping USDA representatives in the field and at national headquarters informed; and

(4) Providing technical assistance to the Chairman of USDA State Defense Boards.

If communications with higher authority are cut off, each Chairman of a USDA Regional Defense Board is responsible for providing policy direction for all USDA programs in his region until communications are restored. This includes policy direction to Chairman of USDA State Defense Boards.

23. *AMS Food Distribution Area Offices.* The AMS Food Distribution Area Offices for defense purposes are parts of the national office organization and do not come under the emergency control of USDA State or Regional Defense

Boards. However, when communications with USDA national headquarters are cut off, program direction to the USDA State Defense Board Chairmen will be through and with concurrence of the Chairman of the USDA Regional Defense Board. When communications are intact, program direction to the State Defense Board Chairmen will be through and with concurrence of USDA national headquarters. If communications with both the USDA Regional Defense Board and USDA national headquarters are cut off, the AMS Food Distribution Area Offices are authorized to carry out the following functions listed below without other concurrence. With respect to its assigned geographical area and subject to conditions stated above, each AMS Food Distribution Area Office shall, under direction of national headquarters, develop a capability to carry out in an emergency the following functions:

a. Obtaining and analyzing data from USDA State Defense Boards and other sources on the food supply-requirements situation and reporting the results to national headquarters and to appropriate USDA Regional Defense Boards;

b. Assisting USDA State Boards and in a cut-off situation the USDA Regional Defense Boards by arranging for inter-State readjustment of food supplies within its area including: (1) Requisitioning of "stranded food shipments" so they can be used; (2) requesting ASCS Commodity Offices to supply CCC stocks to meet critical deficits; (3) when appropriate, request ASCS Commodity Offices to arrange for the procurement and shipment of other food to meet urgent needs of other areas; (4) programming utilization of other Government-owned stocks of processed foods; and (5) providing technical guidance to the food management representatives on USDA State Defense Boards in carrying out USDA food distribution functions within a State when both are cut off from national office direction;

c. Administering food orders, as assigned by those orders;

d. Continuing regular functions of AMS Food Distribution Area Offices which, as appropriately modified, would be essential during the emergency period and taking other steps, not inconsistent with this memorandum, which the Area Office Supervisor may deem appropriate to reduce inequities in the food supply in his area.

24. *ASCS Commodity Offices.* The ASCS Commodity Offices for defense purposes are parts of the national office organization and do not come under emergency control of USDA State or Regional Defense Boards. However, when communications with USDA national headquarters are cut off, program direction to the USDA State Defense Board Chairmen will be through and with concurrence of the Chairman of the USDA Regional Defense Board. When communcations are intact, program direction to the State Defense Board Chairmen will be through and with concurrence of USDA national headquarters. If communications with both the USDA Regional Defense Board and USDA national headquarters are cut off, the ASCS Commodity Offices are authorized to carry out the following functions listed below without other concurrence. Each ASCS Commodity Office, with respect to its assigned commodity responsibilities and subject to conditions stated above, under the direction of national headquarters, shall develop a capability to carry out in an emergency the following functions:

a. Managing stocks, including stockpiles, owned or managed by the Commodity Credit Corporation at the time of attack or subsequently acquired, including storage, handling, arranging for processing to another form, and shipment in accordance with instructions from national headquarters or as cooperatively worked out with AMS Food Distribution Area Offices in a cut-off situation to meet State needs;

b. Procuring agricultural commodities of the types normally handled by the Commodity Offices to meet inter-State needs which cannot be met by normal trade operations;

c. Working with AMS Food Distribution Area Offices in procuring and shipping food as required by the emergency situation following national direction or national policy guidance;

d. Providing technical guidance to USDA State Defense Boards with respect to carrying out CCC stocks management functions for the Commodity Offices;

e. Administering food orders, as assigned by those orders;

f. Continuing regular functions of Commodity Offices which, as appropriately modified, would be essential during the emergency period and taking such other steps, not inconsistent with this memorandum, as the Director may deem appropriate in maximizing the utilization of Government-owned stocks of agricultural commodities.

25. *USDA Research Stations and Forest Service Regional Offices.* The USDA Research Stations and Forest Service Regional Offices shall be regarded as arms of the national office of the USDA in carrying out the defense responsibilities of the Department and do not come under the control of USDA State or Regional offices. If in an emergency, communication between the National office and the Regions-Stations are inoperative, emergency activities will be directed by the Director or Acting Chief as provided in a chain of command designation until such time as communication with national headquarters is restored.

The following delegations of responsibility shall be in effect in an emergency:

a. If a cut-off of communications precludes directing activities by national headquarters, each Research Station Director and Regional Forester is authorized to make all emergency program decisions relating to Departmental research activities and National Forest administration within their respective territory;

b. If USDA Research or National Forest Offices are cut off from communications with their respective Research Stations or Regional Offices, direction of emergency activities will be in accordance with the respective Research Station Director's or Regional Forester's predetermined delegation and plan; and

c. In a cut-off situation, the Research Station Directors and Regional Foresters will keep the appropriate USDA State and Regional Defense Board Chairman advised of actions taken and utilize the assistance of these offices to obtain needed requisites to carry out related Departmental responsibilities.

Section 4—Responsibilities at the State level—26. *USDA State Defense Boards.* The USDA has a USDA State Defense Board in each State, plus one covering Puerto Rico and the Virgin Islands. A USDA Defense Board for the District of Columbia has also been established and shall be guided by directions to USDA State Defense Boards except in matters of membership. Membership of each USDA State Defense Board includes a representative of each of the following agencies:

a. Agricultural Marketing Service
b. Agricultural Stabilization and Conservation Service (Chairman)
c. Agricultural Research Service
d. Cooperative Extension Service
e. Farmers Home Administration
f. Forest Service
g. Soil Conservation Service
h. Statistical Reporting Service.

To assist the USDA State Defense Board members, agencies with limited field personnel may arrange for personnel of other agencies to represent them on USDA State Defense Boards. If such an arrangement is needed, the National offices of the agencies involved shall be requested to approve the proposed assignments. The Chairman of the USDA State Defense Board is generally the ASCS State Executive Director, who also represents ASCS on the Board. The ASCS State Office will provide supporting services, such as typing, filing, reproduction and mailing for the Board.

27. *Pre-Emergency.* The Chairman of the USDA State Defense Board, under direction of the Special Assistant, is responsible for:

a. Maintaining liaison with the State government defense organization and other appropriate agencies and officials at the State level;

b. Assuring that his Board members have an adequate organization and staff to carry out USDA responsibilities at the State level in event of emergency;

c. Assuring that programs are adequate at the State level covering assessment of attack effects; food requirements and allocations, claimancy for manpower, equipment, supplies and services, etc.;

d. Coordinating and guiding representatives of each USDA agency at the State level in fulfilling their agency defense assignments as listed in Section 2 above;

e. Supervising and directing defense work by Chairmen and members of USDA Defense Boards at the county level;

f. Collecting and reporting data needed to support defense programs.

28. *Emergency responsibilities.* In an emergency, the Chairman of the USDA State Defense Board will be responsible, under direction of an appropriate official at the national level for coordinating the

administration of all USDA programs at the State level. This will include:

a. Maintaining liaison with the Chairman of the USDA Regional Defense Board, if such a Board is operating and representing USDA in relations with State government officials and with representatives of other appropriate agencies at the State level;

b. Obtaining attack data and coordinating assessment of effects of attack;

c. Determining food requirements and supply situation;

d. Claiming necessary manpower, equipment, supplies and services from control authorities;

e. Directing and coordinating activities of the various USDA agency representatives at the State level in accordance with assignments in Section 2 above;

f. Directing the activity of the Chairmen of the USDA County Defense Boards.

The Chairman will be assisted by other members of the Board and by the additional staff designated in the pre-emergency period. Each Board member, under the direction of the Chairman, shall carry out his agency's National level assignments as listed in Section 2 above within the State, following National office policy directives. When communications with USDA national headquarters are cut off, the Chairman of the USDA State Defense Board will seek policy guidance from the Chairman of the appropriate USDA Regional Defense Board. Failing this, the Chairman of the USDA State Defense Board has authority to make all necessary program decisions following USDA National policy guidelines.

It shall be the responsibility of the USDA State Defense Board Chairman to establish and provide over-all direction to the USDA County or Metropolitan Area Defense Boards. Agency members of the USDA State Defense Board will name their members to USDA County Defense Boards and provide them with instructions for carrying out agency responsibilities.

Section 5—Responsibilities at the local level—29. *USDA County Defense Board.* The USDA shall have a County Defense Board in each county or metropolitan area. Membership of each Board shall include, where available, a representative of the following agencies:

a. Agricultural Stabilization and Conservation Service

b. Cooperative Extension Service

c. Farmers Home Administration

d. Soil Conservation Service.

Where possible, representation from Agricultural Research Service and Forest Service will be provided. In a metropolitan area it will usually be possible for an AMS representative to serve on the Board. Where there is a shortage of qualified personnel, agencies may arrange for personnel of other agencies to represent them on USDA County Defense Boards. If such an arrangement is made, the Chairman of the USDA State Defense Board will be notified. Except in certain metropolitan areas or other special situations, the Chairman of the USDA County Defense Board is the ASCS County Office Manager, who also serves as ASCS representative on the Board. The ASCS county office will provide supporting services such as typing, filing, reproduction, and mailing for the Board. In the case of a USDA Metropolitan Area Defense Board, the Food Management Member shall be Chairman and the AMS office shall provide supporting services. USDA Metropolitan Area Defense Boards shall be in only one State but may cooperate with USDA Defense Boards in adjoining States.

30. *Pre-Emergency.* The Chairman of the USDA County Defense Board, in cooperation with other Board members and under direction of the Chairman of the USDA State Defense Board, is responsible for:

a. Maintaining liaison with the county government defense organization and other officials in the county as necessary;

b. Developing within his County Board an adequate organization and staff to carry out USDA responsibilities at the county level in event of an emergency;

c. Developing programs for (1) assessment of effects of attack, (2) estimating food requirements and supplies, and (3) claiming non-food requisites from local civil authorities;

d. Coordinating and guiding the planning done by representatives of each USDA agency at the county level in fulfilling their agency assignments as listed in Section 2 above;

e. Collecting and reporting data needed to support defense planning.

31. *Emergency responsibilities.* In an emergency when communications are in tact, the Chairman of the USDA County (or Metropolitan Area) Defense Board will be responsible to the Chairman of the USDA State Defense Board for the following functions:

a. Maintaining liaison with county government and other officials at the county level;

b. Obtaining attack information and reporting observed or otherwise known effects of attack;

c. Coordinating development of food requirements and supply data;

d. Claiming non-food materials and manpower;

e. Directing and coordinating activities of USDA agency representatives in the county, in accordance with assignments listed in section 2 above.

At the county level, all USDA responsibilities shall be carried out jointly by the Chairman and the representatives of all the USDA agencies represented on the Board in the county.

In an emergency, when communications with higher authority are cut off, the Chairman of the USDA County (or Metropolitan Area) Defense Board has authority to make all program decisions necessary to carry out USDA responsibilities.

Section 6—Supersedence of existing directives—32. *Superseded documents.* This Memorandum supersedes and cancels the original version of Secretary's Memorandum 1489 dated February 1, 1962.

33. *Review of other documents.* Each Official of USDA given responsibility by this Memorandum will examine the defense documents which he or his predecessor has issued. Any which are inconsistent with provisions of this Memorandum will be cancelled or updated.

The effective date of this memorandum is February 7, 1963.

(E.O. 10998, dated February 16, 1962, 27 F.R. 1524, E.O. 10958, dated August 14, 1961, 26 F.R. 7571)

ORVILLE L. FREEMAN,
Secretary of Agriculture.

MARCH 20, 1964.

[F.R. Doc. 64-2934; Filed, Mar. 26, 1964; 8:45 a.m.]

[USDA Emergency Delegation 1]

EMERGENCY DELEGATION OF PRIORITIES AND ALLOCATIONS POWERS

1. *Authority.* This emergency delegation of authority is issued pursuant to the Defense Production Act of 1950, as amended (50, Appendix U.S.C. 2071, et seq.), Executive Order 10480 (18 F.R. 4939), as amended, and Defense Mobilization Order 8400.1 (28 F.R. 12164), and implements Secretary's Memorandum No. 1489 (Revised) dated February 7, 1963 (F.R.), or as it may be subsequently revised.

2. *General.* (a) Subject to the provisions of paragraph 3, in the event of an attack on the United States the priorities and allocations powers provided in section 101(a) of the Defense Production Act of 1950, as amended, and the power and authority provided in sections 704, 705 and 706 of such Act, as they are now vested in the Secretary of Agriculture or may hereafter be vested in him with respect to food and with respect to the domestic distribution of farm equipment and commercial fertilizer, are hereby delegated as set forth below:

(1) To the Administrator of Agricultural Marketing Service with power to redelegate for the functions assigned that agency in Memorandum of the Secretary No. 1489 (Revised), or as it may be sub-

sequently revised and to the Administrator of Agricultural Stabilization and Conservation Service with power to redelegate for the functions assigned that agency in such Memorandum, or as it may be subsequently revised;

(2) To each Chairman of each USDA Regional Defense Board within his region, during such periods of time as communications are inoperative between the USDA Regional Defense Board and the national headquarters of the U.S. Department of Agriculture (hereafter called "national headquarters");

(3) To each Chairman of each USDA State Defense Board within his State or assigned area, during such periods of time as communications are inoperative between the headquarters of such Board and both the USDA Regional Defense Board and the national headquarters;

(4) To each Chairman of each USDA County or Metropolitan Defense Board within his county or assigned area, during such periods of time as communications are inoperative between the headquarters of such Board and the headquarters of the appropriate USDA State Defense Board, the headquarters of the USDA Regional Defense Board, and the national headquarters;

(5) To each Director of each ASCS Commodity Office with respect to food during such period of time as communications are inoperative between such Commodity Office and the national headquarters. This authority shall be exercised in accordance with responsibilities assigned to ASCS Commodity Offices in Secretary's Memorandum 1489 (Revised), or as it may be subsequently revised.

(b) The geographic boundaries of the USDA Regional Defense Board regions as shown in Schedule A of this emergency delegation.

(c) The text of section 101(a) of the Defense Production Act of 1950, as amended, is shown in Schedule B of this emergency delegation.

(d) The types of action which might be taken under the priorities and allocations powers are shown in Schedule C of this emergency delegation.

(e) The nature of the authority provided for in sections 704, 705 and 706 of the Defense Production Act of 1950, as amended, is shown in Schedule D of this emergency delegation.

3. *Limitations.* (a) The authority delegated by paragraph 2 shall be exercised in the interests of national defense to control production, distribution and use of "food", and the domestic distribution and use of "farm equipment" and "fertilizer", as defined in section 601-(h), (i) and (j) of Executive Order 10480, as amended.

(b) The authority delegated by paragraph 2 shall be exercised in conformity with policies, rules, regulations, and orders of the Office of Emergency Planning and the USDA National Defense Board, or their successor agencies.

This delegation shall take effect March 20, 1964.

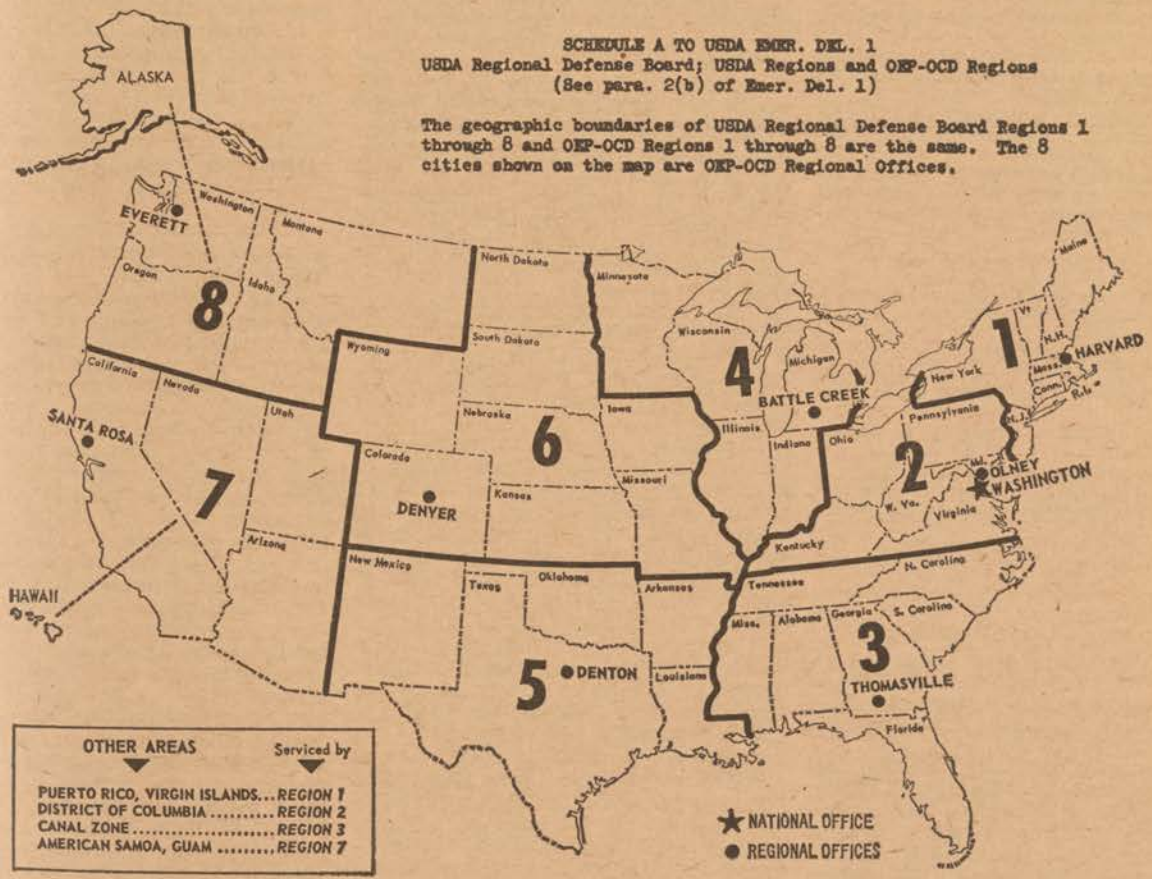
Done at Washington, D.C., this 20th day of March 1964.

(50 Appen. U.S.C. 2071, et seq.; E.O. 10480 (18 F.R. 4939), as amended; Defense Mobilization Order 8400.1 (28 F.R. 12164))

ORVILLE L. FREEMAN,
Secretary of Agriculture.

SCHEDULE A TO USDA EMER. DEL. 1
USDA Regional Defense Board; USDA Regions and OEP-OCD Regions
(See para. 2(b) of Emer. Del. 1)

The geographic boundaries of USDA Regional Defense Board Regions 1 through 8 and OEP-OCD Regions 1 through 8 are the same. The 8 cities shown on the map are OEP-OCD Regional Offices.



SCHEDULE B TO USDA EMER. DEL. 1

TEXT OF SECTION 101(A) OF DEFENSE PRODUCTION ACT OF 1950, AS AMENDED

(See para. 2(c) of Emer. Del. 1)

"The President is hereby authorized (1) to require that performance under contracts or orders (other than contracts of employment) which he deems necessary or appropriate to promote the national defense, shall take priority over performance under any other contract or order, and for the purpose of assuring such priority, to require acceptance and performance of such contracts or orders in preference to other contracts or orders by any person he finds to be capable of their performance, and (2) to allocate materials and facilities in such manner, upon such conditions, and to such extent as he shall deem necessary or appropriate to promote the national defense."

SCHEDULE C TO USDA EMER. DEL. 1

TYPES OF PRIORITIES AND ALLOCATIONS ACTIONS

(See para. 2(d) of Emer. Del. 1)

Among the types of action which might be taken under the priorities and allocations powers are the following:

(1) To authorize use of priorities and to issue directives.
(2) To require preference in the performance of a contract or order.
(3) To require rescheduling of production and deliveries.
(4) Issuance of "set-aside" order requiring producer to reserve part of production for certain purposes.
(5) Require use of a producer's facilities for production of designated products (allocation of facilities).
(6) Establishment of inventory restrictions.
(7) Limit delivery of materials to designated purchasers or classes of purchasers (allocation of materials).

SCHEDULE D TO USDA EMER. DEL. 1

NATURE OF AUTHORITY PROVIDED FOR IN CERTAIN SECTIONS OF DEFENSE PRODUCTION ACT OF 1950, AS AMENDED

(See para. 2(a) of Emer. Del. 1)

Section 704 provides authority to issue regulations.
Section 705 provides authority to obtain information.
Section 706 provides authority to apply to courts for injunctive relief restraining violations or enforcing compliance with orders and regulations.

[F.R. Doc. 64-2935; Filed, Mar. 26, 1964; 8:45 a.m.]

[USDA Emergency Delegation 2]

SECRETARY OF THE INTERIOR

Delegation of Authority With Respect to Fishery Commodities or Products

The Department of the Interior has certain responsibilities and exercises certain functions with respect to the production of the Nation's supply of fishery commodities. It is highly desirable in order to insure the necessary production that the exercise of all functions with respect to the production of fish be closely coordinated. To effectuate this purpose and to utilize to the fullest extent possible the technical knowledge and experience of the fishery staff of the Department of the Interior, it is the purpose of the Secretary of Agriculture to delegate to the Secretary of the Interior certain defense functions delegated to the Secretary of Agriculture.

Therefore, pursuant to the provisions of section 602(b) of Executive Order 10480 (18 F.R. 4939), as amended, the Secretary of Agriculture hereby delegates, subject to the terms and conditions set forth herein, to the Secretary of the Interior the following functions vested in the Secretary of Agriculture by and under Executive Order 10480:

1. The priorities and allocations functions set forth in section 201(a)(2) of Executive Order 10480, as amended, with respect to the production of fishery commodities or products.

2. The claimant functions with respect to all materials and facilities requisite to the production of fishery commodities or products: *Provided*, That the Secretary of the Interior shall submit to or through the Secretary of Agriculture claims for (1) container supply and (2) materials and any additional facilities to be used in common for the processing of fish and other foods; and, further, that such claims and allocations of materials therefor may be adjusted by the Secretary of Agriculture, if necessary, in light of his over-all responsibilities for food supply.

3. Such functions relating to financial aids and incentives to expansion of productive capacity and supply as are delegated or assigned to the Secretary of Agriculture by or under sections 301, 302(a), 303, and 312 of Excutive Order 10480, as amended, with respect to the production of fishery commodities or products.

4. Such functions relating to labor supply as are delegated to the Secretary of Agriculture under section 401(b) of Executive Order 10480, as amended, with respect to the production of fishery commodities or products.

5. The functions delegated to the Secretary of Agriculture under sections 501, 602(a) and 602(b) of Executive Order 10480, as amended, with respect to the production of fishery commodities or products.

The term "production" as used herein means the catching and harvesting of any form of aquatic animal or plant life and the processing thereof.

The term "fishery commodities or products" as used herein means any edible or nonedible fish, any form of aquatic animal or plant life, or any other commodity or product, including fats and oils, of marine or fresh water origin, which is within the meaning of the term "food" as defined in section 601(h) of Executive Order 10480, as amended.

The function hereby delegated to the Secretary of the Interior shall be exercised with respect to the production of fishery commodities or products to fulfill the requirements for military, essential civilian, and foreign needs, as determined by the Secretary of Agriculture.

Nothing herein shall be construed to delegate to the Secretary of the Interior functions vested in the Secretary of Agriculture with respect to (1) the distribution of unprocessed fishery commodities after delivery to the initial purchaser; or (2) the distribution or procurement of completely processed fishery commodities or products. This delegation shall apply to planning as well as emergency functions.

Defense Food Delegation No. 2, as revised March 17, 1952 (17 F.R. 2369), is hereby revoked.

This delegation shall take effect March 20, 1964.

Done at Washington, D.C., this 20th day of March 1964.

(E.O. 10480, 18 F.R. 4939)

ORVILLE L. FREEMAN,
Secretary of Agriculture.

[F.R. Doc. 64-2936; Filed, Mar. 26, 1964; 8:45 a.m.]

[USDA Emergency Delegation 3]

DESIGNATION OF CLAIMANT AGENCIES WITH RESPECT TO FOOD

In accordance with the description of responsibilities set forth in section 201 of Executive Order No. 10480 (18 F.R. 4939), as amended, and Defense Mobilization Order I-7 (18 F.R. 5366, 6736), as amended, the following agencies of the Government are hereby designated as claimant agencies before the Secretary of Agriculture with respect to food as defined in section 601(h) of Executive Order 10480:

1. Department of Defense with respect to military requirements for all persons eating out of military supplies. (Such Department shall advise the Departments of State and Agriculture of requirements by countries whenever the military requirements submitted include food for foreign civilians or for foreign forces.)

2. Department of Commerce with respect to requirements for food for nonfood industrial uses.

3. Department of State with respect to requirements, other than military requirements, of foreign nations for food produced in the United States unless valid international arrangements stipulate other procedures. (The Foreign Agricultural Service of the Department of Agriculture shall advise and cooperate with the Department of State in developing a procedure for foreign countries to use in supplying estimates of their food requirements for United States sources. The Foreign Agricultural Service will further advise and cooperate with the Department of State in analyzing such requirements and in developing estimates of requirements in the absence of a submission by the countries concerned.)

4. Department of the Interior with respect to requirements for food for civilians in United States possessions, territories, and trust territories other than those included in the military requirements and areas cited in 5 below. (Requirements for food from sources other than the United States shall be reported separately.)

5. Department of Agriculture, through such official or agency thereof as may be designated by the Secretary, with respect to requirements for food for all persons eating out of civilian supplies and for all other domestic nonindustrial uses (e.g., feed, seed) in the States of the United States, Puerto Rico, the Virgin Islands, and the District of Columbia. The Department of Agriculture, in co-

operation with the foreign governments concerned, will also present food requirements on behalf of countries which have valid arrangements with the United States for such procedure. (The Department of Defense will advise regarding civilian food requirements whenever its functions under Executive Order 10952 (26 F.R. 6577), dated July 20, 1961, are concerned).

This designation of claimant agencies supersedes the "Designation of Claimant Agencies with Respect to Food" which was approved on the 23d day of December 1957, and filed with the FEDERAL REGISTER on the 27th day of December 1957 (22 F.R. 10964). This designation of claimant agencies shall apply to planning as well as to emergency operations.

This delegation shall take effect March 20, 1964.

Done at Washington, D.C., this 20th day of March 1964.

(50, Append. U.S.C. 2071, et seq.; E.O. 10480 (18 F.R. 4939), as amended; Defense Mobilization Order I–7 (18 F.R. 5366, 6736), as amended)

ORVILLE L. FREEMAN,
Secretary of Agriculture.

[F.R. Doc. 64–2937; Filed, Mar. 26, 1964; 8:45 a.m.]

[USDA Emergency Delegation 4]

CENSUS BUREAU

Delegation of Authority With Respect to Certain Reports Under Defense Production Act

Pursuant to the authority vested in me by section 602(b) of Executive Order No. 10480 (18 F.R. 4939), the Director of the Bureau of the Census, Department of Commerce is hereby authorized to exercise the authority vested in the Secretary of Agriculture by section 602(a) of Executive Order No. 10480 to secure reports under section 705(a) of the Defense Production Act of 1950 (50, Appendix U.S.C. 2155(a)), in compliance with the request of any authorized official of the Department of Agriculture.

The authority delegated hereby may be exercised by the Director of the Bureau of the Census through such officials and employees of that Bureau as he may designate.

Nothing contained herein shall be construed as limiting the authority of the Secretary of Agriculture to exercise any functions vested in him by the aforesaid Executive Order.

This delegation supersedes United States Department of Agriculture "Defense Food Delegation No. 6" (16 F.R. 1963).

This delegation shall become effective immediately.

(E.O. 10480, 18 F.R. 4939)

Done at Washington, D.C., this 20th day of March 1964.

ORVILLE L. FREEMAN,
Secretary of Agriculture.

[F.R. Doc. 64–2938; Filed, Mar. 26, 1964; 8:45 a.m.]

[USDA Emergency Delegation 5]

PROCUREMENT AND USE OF CCC COMMODITIES

Emergency Delegation

1. *Authority.* The authority to procure agricultural commodities and to make available agricultural commodities in Commodity Credit Corporation stocks as requested by the President or his delegate during the existence of a state of civil defense emergency, in accordance with sections 201(h), 302, and 303 of the Federal Civil Defense Act, is delegated as follows:

(1) To each Chairman of each USDA Regional Defense Board with respect to commodities stored within his region, during such periods of time as communications are inoperative between the USDA Regional Defense Board and the national headquarters of the United States Department of Agriculture (hereinafter referred to as "national headquarters");

(2) To each Chairman of each USDA State Defense Board with respect to commodities stored within his State or assigned area, during such periods of time as communications are inoperative between the headquarters of such Board and both the headquarters of the USDA Regional Defense Board and the national headquarters;

(3) To each Chairman of each USDA County or Metropolitan Defense Board with respect to commodities stored within his county or assigned area, during such periods of time as communications are inoperative between the headquarters of such Board and the headquarters of the appropriate USDA State Defense Board, the headquarters of the USDA Regional Defense Board, and the national headquarters;

(4) To each Director of each ASCS Commodity Office for commodities under his jurisdiction, during such period of time as communications are inoperative between such Commodity Office and the national headquarters. This authority shall be exercised in accordance with the responsibilities assigned to ASCS Commodity Offices in Secretary's Memorandum 1489 (Revised), dated February 7, 1963, or as it may be subsequently revised.

2. *Limitations.* The powers and authorities delegated herein shall be exercised in conformity with policies, rules, regulations, and orders of the Director of the Office of Emergency Planning, Commodity Credit Corporation Board, President or Executive Vice President of the Commodity Credit Corporation, and Secretary of Agriculture, or their successors.

This delegation shall take effect March 20, 1964.

Done at Washington, D.C., this 20th day of March 1964.

(Commodity Credit Corporation Charter Act, 15 U.S.C. 714; Federal Civil Defense Act, 50 U.S.C., app., 2281(h), 2292, 2293)

ORVILLE L. FREEMAN,
Secretary of Agriculture.

[F.R. Doc. 64–2939; Filed, Mar. 26, 1964; 8:45 a.m.]

[USDA Emergency Delegation 6]

ADMINISTRATION OF ASCS PROGRAMS

Emergency Delegation

1. *Authority.* In the event of an attack upon the United States, the powers and authorities vested in the Administrator, ASCS, under the regulations governing the Conservation Reserve Program, the 1963 Land Use Adjustment Program, the Cropland Conversion Program, the Feed Grain Programs, Wheat Stabilization Programs, and the Agricultural Conservation Program are delegated as follows:

(1) To each Chairman of each USDA State Defense Board within his State or assigned area, during such periods of time as communications are inoperative between the headquarters of such Board and national headquarters of the United States Department of Agriculture (hereinafter referred to as "national headquarters"); and

(2) To each Chairman of each USDA County Defense Board within his county or assigned area, during such periods of time as communications are inoperative between the headquarters of such Board and the headquarters of the appropriate USDA State Defense Board and the national headquarters.

2. *Limitations.* The powers and authorities delegated herein shall be exercised in conformity with policies, rules, regulations, and orders of the Administrator, ASCS, and the Secretary of Agriculture or their successors.

This delegation shall take effect March 20, 1964.

Done at Washington, D.C., this 20th day of March 1964.

ORVILLE L. FREEMAN,
Secretary of Agriculture.

[F.R. Doc. 64–2940; Filed, Mar. 26, 1964; 8:45 a.m.]

[USDA Emergency Delegation 7]

ADMINISTRATION OF COMMODITY CREDIT CORPORATION ACTIVITIES

Emergency Delegation

1. *Authority.* In the event of an attack upon the United States, the powers and authorities vested in the Executive Vice President, CCC, to carry out activities of the Commodity Credit Corporation are delegated to each Director of each ASCS Commodity Office, within his assigned area of responsibility, during such period of time as communications are inoperative between such Commodity Office and the national headquarters of the U.S. Department of Agriculture.

2. *Limitation.* This authority shall be exercised in accordance with the bylaws of Commodity Credit Corporation and applicable programs, policies, and procedures.

3. *Revocation.* Delegation of authority with respect to Commodity Credit Corporation's inventory and procurement in case of national defense emergency (Ca–52) of May 18, 1955 (20 F.R. 3645) is hereby revoked.

This delegation shall take effect March 20, 1964.

Done at Washington, D.C., this 20th day of March 1964.

(Commodity Credit Corporation Charter Act, 15 U.S.C. 714)

ORVILLE L. FREEMAN,
Secretary of Agriculture.

[F.R. Doc. 64-2941; Filed, Mar. 26, 1964; 8:46 a.m.]

PENNSYLVANIA

Designation of Area for Emergency Loans

For the purpose of making emergency loans pursuant to section 321 of the Consolidated Farmers Home Administration Act of 1961 (7 U.S.C. 1961), it has been determined that in Chester County, Pennsylvania, a natural disaster has caused a need for agricultural credit not readily available from commercial banks, cooperative landing agencies, or other responsible sources.

Pursuant to the authority set forth above, emergency loans will not be made in the above-named county after December 31, 1964, except to applicants who previously received emergency or special livestock loan assistance and who can qualify under established policies and procedures.

Done at Washington, D.C., this 23d day of March 1964.

ORVILLE L. FREEMAN,
Secretary.

[F.R. Doc. 64-2963; Filed, Mar. 26, 1964; 8:48 a.m.]

WISCONSIN

Designation of Area for Emergency Loans

For the purpose of making emergency loans pursuant to section 321 of the Consolidated Farmers Home Administration Act of 1961 (7 U.S.C. 1961), it has been determined that in the counties of Crawford and Jefferson in the State of Wisconsin, a natural disaster has caused a need for agricultural credit not readily available from commercial banks, cooperative lending agencies, or other responsible sources.

Pursuant to the authority set forth above, emergency loans will not be made in the above-named counties after December 31, 1964, except to applicants who previously received emergency or special livestock loan assistance and who can qualify under established policies and procedures.

Done at Washington, D.C., this 23d day of March 1964.

ORVILLE L. FREEMAN,
Secretary.

[F.R. Doc. 64-2964; Filed, Mar. 26, 1964; 8:48 a.m]

DEPARTMENT OF COMMERCE

Bureau of International Commerce

[File No. 23-836]

AKKU LICHT G. WUNSCH

Order Denying Export Privileges for an Indefinite Period

In the matter of Gunther Wunsch, trading as Akku Licht G. Wunsch, Ziegeloffengasse 17, Vienna 5, Austria; File 23-836; respondent.

The Director, Export Control Investigations Division, Bureau of International Commerce, U.S. Department of Commerce, has applied for an order denying to the above named respondent all export privilegs for an indefinite period because the said respondent failed to furnish answers to interrogatories and failed to furnish certain records and other writings specifically requested, without good cause being shown. This application was made pursuant to § 382.15 of the Export Regulations (Title 15, Chapter III, Subchapter B, Code of Federal Regulations).

In accordance with the usual practice, the application for an indefinite denial order was referred to the Compliance Commissioner, Bureau of International Commerce, who after consideration of the evidence has recommended that the application be granted.

The report of the Compliance Commissioner and the evidence in support of the application have been considered.

The evidence presented shows that Gunther Wunsch, trading as Akku Licht G. Wunsch has a place of business in Vienna, Austria; that the aforesaid Investigations Division is conducting an investigation into the disposition of certain strategic commodities of U.S. origin which were exported to Austria; that the respondent participated in a transaction involving one of such commodities. It is impracticable to subpoena the respondent and relevant and material interrogatories and request to furnish certain specific documents were served on him pursuant to § 382.15 of the Export Regulations. Said respondent has failed to furnish answers to said interrogatories or to furnish the documents requested, as required by said section, and he has not shown good cause for such failure. I find that an order denying export privileges to said respondent for an indefinite period is reasonably necessary to protect the public interest and to achieve effective enforcement of the Export Control Act of 1949, as amended.

Accordingly, it is hereby ordered:

I. All outstanding validated export licenses in which respondent appears or participates in any manner or capacity are hereby revoked and shall be returned forthwith to the Bureau of International Commerce for cancellation.

II. The respondent, his successors or assigns, partners, representatives, agents, and employees hereby are denied all privileges of participating, directly or indirectly, in any manner or capacity, in any transaction involving commodities or technical data exported from the United States in whole or in part, or to be exported, or which are otherwise subject to the Export Regulations. Without limitation of generality of the foregoing, participation prohibited in any such transaction, either in the U.S. or abroad, shall include participation, directly or indirectly, in any manner or capacity, (a) as a party or as a representative of a party to any validated export license application, (b) in the preparation or filing of any export license application or reexportation authorization, or any document to be submitted therewith, (c) in the obtaining or using of any validated or general export license or other export control document, (d) in the carrying on of negotiations with respect to, or in the receiving, ordering, buying, selling, delivering, storing, using, or disposing of any commodities or technical data in whole or in part exported or to be exported from the United States, and (e) in the financing, forwarding, transporting, or other servicing of such commodities or technical data.

III. Such denial of export privileges shall extend not only to the respondent, but also to his agents and employees and to any successor and to any person, firm, corporation, or business organization with which he now or hereafter may be related by affiliation, ownership, control, position of responsibility, or other connection in the conduct of trade or services connected therewith.

IV. This order shall remain in effect until the respondent provides responsive answers, written information and documents in response to the interrogatories heretofore served upon him or gives adequate reasons for failure to do so, except insofar as this order may be amended or modified hereafter in accordance with the Export Regulations.

V. No person, firm, corporation, partnership or other business organization, whether in the United States or elsewhere, without prior disclosure to and specific authorization from the Bureau of International Commerce, shall do any of the following acts, directly or indirectly, or carry on negotiations with respect thereto, in any manner or capacity, on behalf of or in any association with the respondent or any related party, or whereby the respondent or related party may obtain any benefit therefrom or have any interest or participation therein, directly or indirectly: (a) Apply for, obtain, transfer, or use any license, shipper's export declaration, bill of lading, or other export control document relating to any exportation, reexportation, transshipment, or diversion of any commodity or technical data exported or to be exported from the United States, by, to, or for any such respondent or related party denied export privileges; or (b) order, buy, receive, use, sell, deliver, store, dispose of, forward, transport, finance, or otherwise service or participate in any exportation, reexportation, transshipment, or

diversion of any commodity or technical data exported or to be exported from the United States.

VI. A copy of this order shall be served on respondent.

VII. In accordance with the provisions of § 382.15 of the Export Regulations, the respondent may move at any time to vacate or modify this indefinite denial order by filing with the Compliance Commissioner, Bureau of International Commerce, U.S. Department of Commerce, Washington, D.C., 20230, an appropriate motion for relief, supported by substantial evidence, and may also request an oral hearing thereon, which, if requested shall be held before the Compliance Commissioner at Washington, D.C., at the earliest convenient date.

This order shall become effective on March 24, 1964.

Dated: March 16, 1964.

FORREST D. HOCKERSMITH,
Director,
Office of Export Control.

[F.R. Doc. 64-2976; Filed, Mar. 26, 1964; 8:49 a.m.]

Maritime Administration

[Docket No. S-165]

MOORE-MCCORMACK LINES, INC.

Notice of Application and of Hearing

Notice is hereby given of the application of Moore-McCormack Lines, Inc., for written permission of the Maritime Administrator, under section 805(a) of the Merchant Marine Act, 1936, as amended, 46 U.S.C. 1223, to permit its owned vessel, the "SS Robin Mowbray," which is under time charter to States Marine Lines, Inc., for a period of about three to six months from January 10, 1964, to load lumber and/or lumber products, commencing about April 7, 1964, for carriage on one eastbound voyage from U.S. North Pacific ports to U.S. Atlantic ports.

This application may be inspected by interested parties in the Chief Hearing Examiner's Office, Maritime Subsidy Board/Maritime Administration, Room 3043, GAO Building, 441 G Street NW., Washington, D.C.

A hearing on the application has been set for April 1, 1964, at 10:00 a.m. in Room 4519, General Accounting Office Building, 441 G Street NW., Washington 25, D.C. Any person, firm, or corporation having any interest (within the meaning of section 805(a)) in such application and desiring to be heard on issues pertinent to section 805(a) must, before the close of business on March 31, 1964, notify the Secretary, Maritime Subsidy Board/Maritime Administration in writing, in triplicate, and file petition for leave to intervene which shall state clearly and concisely the grounds of interest, and the alleged facts relied on for relief. Notwithstanding anything in Rule 5(n) of the rules of practice and procedure, Maritime Subsidy Board/Maritime Administration, petitions for leave to intervene received after the close of business on March 31, 1964, will not be granted in this proceeding.

By order of the Maritime Administrator.

Dated: March 25, 1964.

JAMES S. DAWSON, Jr.,
Secretary.

[F.R. Doc. 64-3052; Filed, Mar. 26, 1964; 8:52 a.m.]

Office of the Secretary

[Dept. Order No. 90 (Rev.)]

NATIONAL BUREAU OF STANDARDS

Authority and General Functions

The following order was issued by the Secretary of Commerce on January 30, 1964. This material supersedes Department Order No. 90 (Revised) appearing at 28 F.R. 6590 of June 26, 1963; Department Order No. 179 (Revised) appearing at 28 F.R. 6661-6662 of June 27, 1963; and Section 4-4 of Amendment No. 1 of June 21, 1963 to Department Order No. 177 (Revised) appearing at 28 F.R. 6921 of July 6, 1963.

SECTION 1. *Purpose.* The purpose of this order is to delegate authority to the Director and to describe the general functions of the National Bureau of Standards.

SEC. 2. *General.* .01 The National Bureau of Standards, established by Act of March 3, 1901 (31 Stat. 1449; 15 U.S.C. 271) is hereby continued as a primary organization unit of the Department of Commerce. The Bureau may also be identified additionally as the Institutes for Science and Technology. The Bureau is headed by a Director appointed by the President with the advice and consent of the Senate.

.02 The Director, National Bureau of Standards is assisted by a Deputy Director who shall be the principal assistant to the Director and shall perform the functions of the Director during the latter's absence.

SEC. 3. *Delegation of authority.* .01 Pursuant to the authority vested in the Secretary of Commerce by law (including Reorganization Plan No. 5 of 1950), and subject to such policies and directives as the Secretary of Commerce or the Assistant Secretary for Science and Technology may prescribe, the Director is hereby delegated the authority to perform the functions vested in the Secretary of Commerce under:

1 Title 15, Chapter 6 U.S. Code (Weights and Measures and Standard Time);

2 Title 15, Chapter 7 U.S. Code (The Bureau of Standards);

3 15 U.S.C. 1193 (Flammable Fabrics);

4 15 U.S.C. 1213, (Household Refrigerators);

5 15 U.S.C. 1301-1303 (Brake Fluid Regulation);

6 Title 15, Chapter 23 U.S. Code (Dissemination of Technical, Scientific and Engineering Information);

7 Part VI of Reorganization Plan No. 3 of 1946 (Certain functions under the National Bureau of Standards) see text under 5 U.S.C. 133y-16; and

8 Any other existing or subsequent legislation with respect to engineering, mathematics and physical science activities within the special competence of the National Bureau of Standards.

.02 The Director of the National Bureau of Standards may redelegate his authority to appropriate officials of the National Bureau of Standards subject to such conditions in the exercise of such authority as he may prescribe.

SEC. 4. *General Functions.* The National Bureau of Standards shall perform the following functions: (1) Develop and maintain the national standards of measurement, and the provisions of means for making measurements consistent with those standards; (2) determine physical constants and properties of materials; (3) develop methods for testing materials, mechanisms, and structures, and make such tests as may be necessary, particularly for Government agencies; (4) cooperate in the establishment of standard practices for incorporation in codes and specifications; (5) provide advisory service to Government agencies on scientific and technical problems; (6) invent and develop devices to serve special needs of the Government; (7) assist industry, business and consumers in the development and acceptance of commercial standards and simplified trade practice recommendations; (8) conduct programs, in cooperation with United States business groups and standards organizations, for the development of international standards of practice; (9) administer the Civilian Industrial Technology Program; and (10) maintain a clearinghouse for the collection and dissemination of scientific, technical, and engineering information.

SEC. 5. *Transfer of Personnel, Funds, Records, and Property.* .01 The personnel, funds, records, and property of the Office of Technical Services, Office of the Secretary, are transferred to the National Bureau of Standards.

.02 The personnel, funds, records, and property assigned to the Civilian Technology Program in the Office of the Secretary, and the administration of the program, are hereby transferred to the National Bureau of Standards.

.03 The Assistant Secretary for Administration, acting through the appropriate offices of the Department, shall determine and arrange for the transfer of personnel, funds, records, and property of the Office of Technical Services as provided herein.

.04 The Assistant Secretary for Administration, acting through the appropriate offices of the Department, shall determine and arrange for the transfer of personnel, funds, records, and property assigned to the Civilian Technology Program in the Office of the Secretary, and the administration of the program, as provided herein.

SEC. 6. *Saving Provisions.* All rules, regulations, orders, certificates, and delegations of authority issued by or relating to the National Bureau of Standards or

the Office of Technical Services or any official thereof shall remain in effect until specifically revoked or amended by proper authority.

Effective date: January 30, 1964.

HERBERT W. KLOTZ,
Assistant Secretary for Administration.

[F.R. Doc. 64-2950; Filed, Mar. 26, 1964; 8:46 a.m.]

[Organization and Function Supp. (Rev.) Dept. Order No. 90 (Rev.)]

NATIONAL BUREAU OF STANDARDS

Organization and Assignment of Functions

The following Organization and Function Supplement to Department Order No. 90 (Revised) of January 30, 1964, supersedes the Organization and Function Supplement of June 7, 1963 to Department Order No. 90 (Revised) appearing at 28 F.R. 6590-6592 of June 26, 1963 and the organization and Function Supplement of August 22, 1963 to Department Order No. 179 (Revised) appearing at 28 F.R. 9677-9678 of September 4, 1963.

SECTION 1. *Purpose.* The purpose of this Organization and Function Supplement is to prescribe the organization and assignment of functions within the National Bureau of Standards.

SEC. 2. *Organization.* .01 The National Bureau of Standards is a principal focal point in the Federal Government for assuring maximum application of the physical and engineering sciences to the advancement of technology in industry and commerce. To this end the Bureau's research and central national services are conducted in four broad program areas: (1) Basic measurement standards, (2) materials research, (3) engineering standards and applied technology, and (4) radio propagation. An "Institute" is established for each of three program areas to facilitate coordination and management of programs involving similar technical objectives, staff, and facilities. A "Laboratory" is established for the same purposes in the radio propagation area.

.02 The Institute for Basic Standards conducts programs of basic measurements standards, which include research and services oriented toward the needs of the scientific and engineering community of the nation. The Institute comprises a series of divisions, each serving a classical subject matter area of science and engineering.

.03 The Institute for Materials Research conducts materials research and provides associated reference material services. Beyond their direct interest to the nation's scientists and engineers, the activities of this Institute yield services which are essential to the advancement of technology in industry and commerce. The Institute comprises a series of divisions organized primarily by technical field.

.04 The Central Radio Propagation Laboratory conducts research and provides related services on basic radio propagation phenomena. These programs are of particular value to other agencies of Government as well as to science and industry.

.05 The Institute for Applied Technology stimulates technical innovation and industrial use of the results of modern science and technology. The principal elements of the Institute are: (1) A Textiles and Apparel Technology Center furnishing specialized technical services to that industry; (2) technical divisions which provide services in technology of more general applicability, and (3) the Office of Technical Services which promotes widest effective use by the scientific community, industry, and commerce of current information in all fields of industrial technology.

.06 The National Bureau of Standards shall comprise the organization units enumerated in subsequent sections of this order.

SEC. 3. *Office of the Director.* .01 The Director determines the policies of the Bureau and directs the development and execution of its programs.

.02 The Deputy Director assists the Director in the direction of the Bureau, with particular regard to planning and internal coordination of its programs, and performs the functions of the Director in the latter's absence.

SEC. 4. *Special Offices Reporting to the Director.* .01 The Manager, Boulder Laboratories plans and provides technical and administrative management services in support of the technical programs conducted at the Bureau's Boulder Laboratories, Boulder, Colorado; plans and directs basic programs and employee development activities to improve efficiency of management of programs and/or services over which he has been assigned responsibility; undertakes independent appraisals for the Director of the effectiveness with which the technical programs of the Boulder Laboratories are conducted; and serves as the principal representative of the Director in interpreting and applying the general administrative policies of the National Bureau of Standards to the operation of the Boulder Laboratories, and in negotiations concerning the Laboratories with officials of other Federal agencies and representatives of state and local government, industry, commerce, universities, and private organizations with respect to those matters over which he has cognizance and/or responsibility.

.02 The Office of Public Information conducts the public information activities of the Bureau, including: coordination of relations with the general press; provision of an inquiry service for the general public; and the operation of exhibits, tours, and informational films programs.

.03 The Technical Analysis Group conducts broad studies utilizing operations research and other modern techniques to determine the impact of technology on the economy. This group is concerned with the collection, organization, and analysis of information needed to assure the most effective orientation of the Department's technical programs toward the needs of American industry.

.04 The Office of Program Planning and Evaluation coordinates advisory services to the Bureau; develops estimates of resources required to carry out long-range plans; explores alternative resources (intramural vs. extramural) for the conduct of Bureau programs; studies the relation of the Bureau's programs to those of other Government agencies; and assists in the evaluation of progress made toward mission objectives.

.05 The Director will have available to him the services of a legal counsel under the supervision of the General Counsel of the Department of Commerce to provide necessary legal advice. This includes preparation of legislation, providing legal advice regarding patent questions, advising on legal problems connected with grants and contracts, and advising on problems connected with the use of proprietary rights and in the applications of standards of practice. He also provides legal assistance, where necessary, in negotiations with private industry to establish cooperative research associations and in the negotiation of grants and contracts.

SEC. 5. *Institute for Basic Standards.* .01 The Institute for Basic Standards provides the central basis within the United States of a complete and consistent system of physical measurement; coordinates that system with the measurement systems of other nations; and furnishes essential services leading to accurate and uniform physical measurements throughout the nation's scientific community, industry, and commerce.

.02 The Director, Institute for Basic Standards, directs the development, execution, and evaluation of the programs of the Institute. The Deputy Director assists in the direction of the Institute and performs the functions of the Director in the latter's absence.

.03 The Office of Standard Reference Data administers the National Standard Reference Data System which provides critically evaluated data in the physical sciences on a national basis. This requires arrangement for the continuing systematic review of the national and international scientific literature in the physical sciences, the evaluation of the data it contains, the stimulation of research needed to fill important gaps in the data, and the compilation and dissemination of evaluted data through a variety of publication and reference services tailored to the user needs in science and industry.

.04 The Divisions of the Institute for Basic Standards are as follows:

Electricity.
Metrology.
Heat.
Radiation Physics.
Mechanics.
Applied Mathematics.
Atomic Physics.
Physical Chemistry.
Laboratory Astrophysics.
*Radio Standards Laboratory.
Radio Standards Physics.
Radio Standards Engineering.

*The closely allied Radio Standards Physics and Radio Standards Engineering Divisions are grouped under the Radio Standards Laboratory for facility in administration.

Each division except the Applied Mathematics Division engages in such of the following functions as are appropriate to the subject matter field indicated generally by the division title:

1 Develop and maintain the national standards for physical measurement, develop appropriate multiples and submultiples of prototype standards, and develop transfer standards and standard instruments;

2 Determine important fundamental physical constants which may serve as reference standards, and analyze the self-consistencies of their measured values;

3 Conduct experimental and theoretical studies of fundamental physical phenomena of interest to scientists and engineers with the general objective of improving or creating new measurement methods and standards to meet existing or anticipated needs;

4 Conduct general research and development on basic measurement techniques and instrumentation, including research on the interaction of basic measuring processes on the properties of matter and physical and chemical processes;

5 Calibrate instruments in terms of the national standards, and provide other measurement services to promote accuracy and uniformity of physical measurements;

6 Correlate with other nations the national standards and definitions of the units of measurement; and

7 Provide advisory services to Government, science, and industry on basic measurement problems.

The Applied Mathematics Division:

1 Conducts research in various fields of mathematics important to physical and engineering sciences with emphasis on statistical and numerical analysis and mathematical physics;

2 Provides computation and consultative services to the Bureau and other Federal agencies; and

3 Develops tools for mathematical work, such as mathematical tables, manuals, and computer programs and advises on their use.

SEC. 6. *Institute for Materials Research.* .01 The Institute for Materials Research assists and stimulates industry in the development of new and improved products by supplying increased understanding of basic properties of materials. The main functions of the Institutes are: (1) Conduct research on the fundamental properties of matter and materials which are of importance to science, industry, and commerce, and the collection and dissemination of data on these properties; (2) develop techniques for the preparation of experimental materials and for the measurement of their properties; (3) develop criteria by which the performance characteristics of basic materials may be evaluated; and (4) develop, produce, and distribute standard reference materials which provide a basis for comparison of measurements on materials and aid in the control of production processes in industry.

.02 The Director, Institute for Materials Research, directs the development, execution and evaluation of the programs of the Institute. The Deputy Director assists in the direction of the Institute and performs the functions of the Director in the latter's absence.

.03 The Office of Standard Reference Materials evaluates the requirements of science and industry for carefully characterized reference materials, stimulates the Bureau's efforts to develop methods for production of needed reference materials and directs their production and distribution.

.04 The Divisions of the Materials Research Institute are as follows:

Analytical Chemistry.
Polymers.
Metallurgy.
Inorganic Materials.
Reactor Radiations.
Cryogenics.

Each division engages in such of the following functions as are appropriate to the subject matter field indicated generally by the division title:

1 Conduct research on the chemical and physical constants, properties, constitution, and structure of matter;

2 Devise and improve methods for the preparation, purification, analysis, and characterization of materials;

3 Investigate fundamental chemical, metallurgical, and physical phenomena of importance to science and industry such as fatigue and fracture, crystal growth and imperfections, stress corrosion, etc.;

4 Develop techniques for measurement of the properties of materials under carefully controlled conditions extending to the extremes of high and low temperature and pressure, and exposure to different types of radiation;

5 Assist in the development of standard methods and equipment for testing materials;

6 Conduct research and develop methodology leading to the production of standard reference materials and produce these materials; and

7 Provide advisory services to Government, science and industry on basic materials problems.

SEC. 7. *Central Radio Propagation Laboratory.* .01 The Central Radio Propagation Laboratory is the central agency of the Federal Government for the collection, analysis, and dissemination of information on the propagation of radio waves at all frequencies along the surface of the earth, in the atmosphere, and in space, and performs studies looking toward new techniques for the efficient use and conservation of the radio spectrum.

.02 The Director, Central Radio Propagation Laboratory, directs the development, execution, and evaluation of the programs of the Laboratory. The Deputy Director assists in the direction of the Laboratory and performs the functions of the Director in the latter's absence.

.03 The Divisions of the Central Radio Propagation Laboratory are as follows:

Ionospheric Research and Propagation.
Troposphere and Space Telecommunications.
Radio Systems.
Upper Atmosphere and Space Physics.

Each division engages in such of the following functions as are appropriate to the subject matter field indicated generally by the division title:

1 Conducts basic research on the nature of radio waves, the pertinent properties of the media through which radio waves are transmitted, the interaction of radio waves with those media, and on the nature of radio noise and interference effects;

2 Performs studies of specific radio propagation mechanisms and performs scientific studies looking toward the development of techniques for efficient use and conservation of the radio spectrum;

3 Furnishes advisory and consultative services on radio wave propagation, on radio frequency utilization, and on radio system problems to other organizations in the United States, public and private;

4 Prepares and issues predictions of radio wave propagation and noise conditions and warnings of disturbances in these conditions;

5 Acts as a central repository for data, reports, and information in the field of radio wave propagation; and

6 Performs scientific liaison and exchanges data and information with other nations to advance knowledge of radio wave propagation and interference phenomena and spectrum conservation techniques, including liaison required by international responsibilities and agreements.

SEC. 8. *Institute for Applied Technology.* .01 The Institute for Applied Technology provides a variety of industry-oriented technical services to facilitate and promote the use by industry of available technology and to facilitate technological innovation. The main functions of the Institute are: (1) Identify and evaluate obstacles to technical innovation in industry; (2) develop a technical basis for the evaluation of technological products and services; (3) maintain continuous cooperation with public and private organizations leading to the development of technological standards such as codes, methods of test, and engineering standards; and (4) disseminate technical information.

.02 The Director, Institute for Applied Technology, directs the development, execution, and evaluation of the programs of the Institute. The Deputy Director assists in the direction of the Institute and performs the functions of the Director in the latter's absence.

.03 The Office of Technical Services is a central clearinghouse for the collection and dissemination of scientific and technical information from domestic and foreign sources. Its purpose is to make the results of science and technology more readily available to industry, commerce, and the general public. Through the Technical Documentation Center it provides: (1) a center for technical reference, referral, documents sales and reference to technical work in progress for Federally generated research and development in the public domain; (2) a clearinghouse for information on available technical translations; and (3) an inquiry-responding

service concerning the application of available technology.

.04 The Office of Industrial Services (1) cooperate with private industrial research organizations and associations in the United States and abroad to stimulate private research competence and to promote the interchange of technical information; (2) encourages private groups to undertake with their own resources research and development of importance to industry and provides information and guidance to industrial associations concerning the organization and management of such research projects; (3) coordinates the Bureau's industrial research associates program; and (4) provides general analysis of the needs for and problems associated with technological innovation in broad areas of industry, including studies of the similarities and differences in the technical problems of various industries.

.05 The Office of Weights and Measures provides technical services to the States, business and industry with regard to testing, specifications, and tolerances for weighing and measuring devices; the design, construction, and use of standards of weight and measure and associated instruments; and the training of State and local weights and measures officials.

.06 The Office of Engineering Standards serves as a focal point for cooperation with other standardizing organizations and trade associations in the development of engineering and industrial standards, provides central coordination of the Bureau's participation in such standardizing activities, and is responsible for cooperation in international standards activities.

.07 The Textiles and Apparel Technology Center: (1) Cooperates with trade associations and other appropriate organizations to identify obstacles to technical innovation in the textile industry and to formulate programs to overcome these; (2) collects, analyzes and disseminates technical information of particular importance to the industry; (3) develops criteria for evaluation of textiles and apparel; (4) cooperates in the development of industry standards; and (5) provides support for research in private laboratories on problems of general importance in the industry.

.08 Divisions of the Institute for Applied Technology and the functions of each are as follows:

1 The Building Research Division develops criteria for performance standards of building products, structures, and systems; and cooperates with industry, other Government agencies, and the professional associations of the industry in the development of standards and methods of measurement.

2 The Industrial Equipment Technology Division develops criteria for evaluation of products and services in the general field of industrial production equipment; cooperates with appropriate trade associations in identifying needs for improved equipment technology; and cooperates in the development of standards, codes, and specifications.

3 The Information Technology Division develops criteria for evaluation of products and services in the general field of information storage, retrieval, and processing; cooperates with appropriate trade associations in identifying needs for improved technology; and cooperates in the development of standards, codes, and specifications.

4 The Performance Test Development Division develops data on end product materials essential to permit formulation of methods for testing and evaluation of new products, particularly those to be used by the Federal Government. This activity involves extensive cooperation with other Federal agencies having responsibility for procurement of supplies and materials.

5 The Instrumentation Division develops criteria for the evaluation of products and services in the general field of industrial instrumentation; cooperates with appropriate trade associations in identifying needs for improved instrumentation technology; and cooperates in the development of standards, codes, and specifications.

6 The Transport Systems Division develops methodology and models to permit measurement and evaluation of the engineering, economic, and social factors essential to the understanding of the transportation function and to decision making on national transportation policies. Technical assistance is provided to other organization units of the Department and Government concerned with transportation research.

SEC. 9. *Office of the Associate Director for Administration.* .01 The Associate Director for Administration makes certain that the Bureau's programs are carried forward within applicable regulatory and procedural restraints, plans and operates centralized services in the fields of administrative management, and serves as the Director's principal staff adviser on management matters. On matters pertaining to administration and management, the Office of the Associate Director for Administration and all other organizational components, as applicable, of the National Bureau of Standards are subject to the authorities of the staff service offices in the Office of the Assistant Secretary for Administration as provided in Department Order No. 134 (Revised) of July 1, 1963, and Organization and Function Supplements thereto.

.02 Functions of each of the organization units reporting to the Associate Director for Administration are:

1 The Accounting Division administers the official system of central fiscal records, payments and reports, provides test administration service, and provides staff assistance on accounting and related matters;

2 The Personnel Division advises on personnel policy and utilization, and administers recruitment, placement, classification, training and employee relations activities, and assists operating officials of these and other aspects of personnel management;

3 The Budget and Management Division advises on financial management and provides staff assistance in the preparation of estimates and the utilization of funds, provides staff assistance in improvement of management practices, makes organization and procedures studies, provides advisory service on administrative requirements of technical programs, develops and maintains allied programs such as issuances, records and forms management, and coordinates administrative procedures and actions where several administrative divisions are affected;

4 The Administrative Services Division has staff responsibility for security, safety, emergency relocation planning, and civil defense activities, and administers custodial functions, duplicating service, and local transportation service;

5 The Internal Audit Division assists the Director and other Bureau officials by conducting independent, objective, and constructive appraisals of the effectiveness and efficiency with which the Bureau's operating administrative and financial programs are being carried out and reporting its findings and recommendations for consideration and action;

6 The Supply Division performs or facilitates the procurement and distributon of material, keeps records and promotes effective utilization of property, acts as the contracting office for all research, construction, supply, and lease contracts entered into by the Bureau, and administers communication services; and

7 The Plant Division maintains the physical plant at Washington, and performs staff work in planning and providing grounds, buildings, and improvements at all Bureau locations.

SEC. 10. *Office of the Associate Director for Technical Support.* .01 The Associate Director for Technical Support plans and operates centralized technical services which directly support the Bureau's technical programs. He also serves as the Director's principal staff adviser on technical support matters.

.02 The functions of each of the organization units reporting to the Associate Director for Technical Support are:

1 The Technical Publications Division assists in the preparation, scheduling, printing, and distribution of Bureau publications, and maintains relations with the technical press to foster the outward communication of the Bureau's scientific findings and related technical information to science and industry;

2 The Research Information Division furnishes diversified information services to the staff of the Bureau, including conventional library services, bibliographic, reference, and translation services, and conducts studies associated with the mechanization of the foregoing services;

3 The Radiation Safety Division is responsible for radiation safety in the Bureau, operation of health physics activities, A.E.C. licensing for radiation sources, and accountability for radioactive materials;

4 The Professional Development Division serves as the focal point for the Bureau's cooperation with the academic sector, coordinates arrangements for staff exchanges between the Bureau and academic institutions, and provides information to colleges and universities regarding career opportunities in the Bureau; and

5 The Instrument Shops Division designs, constructs, and repairs precision scientific instruments and auxiliary equipment.

Effective date: January 30, 1964.

HERBERT W. KLOTZ,
Assistant Secretary for Administration.

APPENDIX A (REVISED)

NATIONAL BUREAU OF STANDARDS—FIELD ORGANIZATION

Field Organization	*Location*
Boulder Laboratories	Boulder, Colo.
Materials Testing Laboratories.	San Francisco, Calif., Denver, Colo., Seattle, Wash.
Visual Landing Aids Field Laboratory.	Arcata, Calif.
Master Railway Track Scale Depot.	Clearing, Ill.

[FR. Doc. 64-2951; Filed, Mar. 26, 1964; 8:46 a.m.]

DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE

Food and Drug Administration

AMERICAN ANILINE AND EXTRACT CO., INC.

Notice of Filing of Petition Regarding Food Additives

Pursuant to the provisions of the Federal Food, Drug, and Cosmetic Act (sec. 409(b)(5), 72 Stat. 1786; 21 U.S.C. 348(b)(5)), notice is given that a petition (FAP 1349) has been filed by American Aniline and Extract Co., Inc., Venango and F Streets, Philadelphia 34, Pa., proposing the amendment to §§ 121.2520 and 121.2571 to provide for the use of glycidyl methacrylate as a monomer in polymers used in compounding adhesives and in coatings for paper and paperboard that contact dry food.

Dated: March 20, 1964.

MALCOLM R. STEPHENS,
Assistant Commissioner for Regulations.

[F.R. Doc. 64-2960; Filed, Mar. 26, 1964; 8:47 a.m.]

DIAMOND ALKALI CO.

Notice of Filing of Petition Regarding Pesticide Chemical Dimethyl 2,3,5,6-Tetrachloroterephthalate

Pursuant to the provisions of the Federal Food, Drug, and Cosmetic Act (sec. 408(d)(1), 68 Stat. 512; 21 U.S.C. 346a(d)(1)), notice is given that a petition (PP 411) has been filed by Diamond Alkali Company, P.O. Box 348, Painesville, Ohio, proposing the establishment of tolerances for residues of the herbicide dimethyl, 2,3,5,6-tetrachloroterephthalate in or on the raw agricultural commodities named:

5 parts per million in or on mustard greens, peanuts, peanut hay, peavine hay, and turnip greens.

1 part per million in or on broccoli, brussels sprouts, cabbage, cantaloupes, cauliflower, collards, cowpeas (dry and succulent), cowpea vine hay, cucumbers, eggplants, field beans (dry), garlic (green or dry), honeydew melons, kale, lettuce, lima beans (dry and succulent), lima bean vine hay, mung beans (dry and succulent), onions (green or dry), peas (dry and succulent), peppers, pimentos, potatoes, snap beans, soybeans (dry and succulent), soybean hay, strawberries, summer squash, sweetpotatoes, tomatoes, turnips, watermelons, winter squash, and yams.

The analytical methods proposed in the petition for determining residues of dimethyl 2,3,5,6-tetrachloroterephthalate and of its metabolites monomethyl 2,3,5,6-tetrachloroterephthalate and 2,3,5,6-tetrachloroterephthalic acid are (1) the colorimetric method of Shuldt et al., as published in Contributions, Boyce Thompson Institute, volume 21, page 163 (1961); and (2) extraction of the residues with methylene chloride, cleanup by passage through an alumina column, and determination of the residues by a microcoulometric gas chromatographic technique.

Dated: March 20, 1964.

MALCOLM R. STEPHENS,
Assistant Commissioner for Regulations.

[F.R. Doc. 64-2961; Filed, Mar. 26, 1964; 8:47 a.m.]

UNION CARBIDE CORP.

Notice of Filing of Petition Regarding Pesticide Carbaryl

Pursuant to the provisions of the Federal Food, Drug, and Cosmetic Act (sec. 408(d)(1), 68 Stat. 512; 21 U.S.C. 346a(d)(1)), notice is given that a petition (PP 405) has been filed by Union Carbide Corporation, 270 Park Avenue, New York, New York, proposing the establishment of a tolerance of 100 parts per million for residues of the insecticide carbaryl in or on each of the raw agricultural commodities green fodder and straw and a tolerance of zero in or on grain of wheat, barley, oats, and rye.

The analytical method proposed in the petition for determining residues of carbaryl is that described in the FEDERAL REGISTER of January 9, 1959 (24 F.R. 238), except that the method determines simultaneously the total residues of carbaryl and accompanying residues of its degradation product 1-naphthol.

Dated: March 20, 1964.

MALCOLM R. STEPHENS,
Assistant Commissioner for Regulations.

[F.R. Doc. 64-2962; Filed, Mar. 26, 1964; 8:48 a.m.]

CHEMICAL AFFILIATES, INC.

Notice of Filing of Petition Regarding Food Additives

Pursuant to the provisions of the Federal Food, Drug, and Cosmetic Act (sec. 409(b)(5), 72 Stat. 1786; 21 U.S.C. 348(b)(5)), notice is given that a petition (FAP 1312) has been filed by Chemical Affiliates, Inc., 274 Madison Avenue, New York 16, New York, proposing that paragraph (b) of § 121.2566 *Antioxidants and/or stabilizers for polymers* be amended by inserting in the "List of substances" the following additional items:

BHT. Sorbitan monostearate.
Calcium benzoate.

Dated: March 20, 1964.

MALCOLM R. STEPHENS,
Assistant Commissioner for Regulations.

[F.R. Doc. 64-2983; Filed, Mar. 26, 1964; 8:50 a.m.]

ATOMIC ENERGY COMMISSION

[Docket No. 70-774]

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

Notice of Issuance of License

Notice is hereby given that the Atomic Energy Commission, on March 19, 1964 issued Special Nuclear Materials License No. SNM-745 to National Aeronautics and Space Administration which authorizes the licensee to ship irradiated PBR fuel elements from the Plum Brook Reactor Facility to the Commission's Idaho Chemical Processing Plant in the type of cask specified and in accordance with the procedures described in the application. For further details see (1) the application dated June 12, 1963 as supplemented, and (2) a Safety Analysis by the Fuels Processing Branch of the Division of Licensing and Regulation (see Docket No. 70-774), which are on file at the AEC's Public Document Room. A copy of the Safety Analysis by the Fuels Processing Branch is available upon request addressed to the Atomic Energy Commission, Washington, D.C., 20545, Attention: Director, Division of Licensing and Regulation.

Dated at Bethesda, Md., this 19th day of March 1964.

For the Atomic Energy Commission.

R. LOWENSTEIN,
Director, Division of Licensing and Regulation.

[F.R. Doc. 64-2949; Filed, Mar. 26, 1964; 8:46 a.m.]

CIVIL AERONAUTICS BOARD

[Docket No. 13777; Order E-20603]

INTERNATIONAL AIR TRANSPORT ASSOCIATION

Order Amending Approval of Agreement

Adopted by the Civil Aeronautics Board at its office in Washington, D.C., on the 23d day of March 1964.

Agreement adopted by the traffic conference of the International Air Transport Association relating to charters; Docket No. 13777, Agreement C.A.B. 16847, R–7.

By Order E–19426, adopted March 28, 1963, the Board approved Resolution R–7, filed as part of Agreements C.A.B. 16847, the Charter Resolution (045) of the International Air Transport Association (IATA), subject to certain conditions contained in an appendix to the order. Among these conditions were numerous restrictions on the activities of travel agents in connection with charter flights (see conditions (d)(1) through (d)(6) of the appendix to that order). These conditions were originally imposed by the Board in 1959[1] in order to make the charter operations of the IATA carriers subject to the same restrictions with respect to agent activities as were then applicable to transatlantic passenger charters of United States supplemental and all-cargo carriers pursuant to the provisions of Part 295 of the Board's Economic Regulations.

In its decision in the Transatlantic Charter Investigation (Orders E–20530 and E–20531, served March 3, 1964, in Docket 11908 et al.), the Board issued a revision of Part 295 to be effective April 18, 1964, which, among other things, liberalizes various provisions of that regulation. These liberalizations include revision of the restrictions on travel agent activities, which if carried over into the Board's conditions on the LATA Resolution, would involve rescission of conditions (d) (1), (2), (3), and (5). Thus, an agent would be permitted to assist in the organization or assembly of a charter group, solicit individual members of the organization both for the flight or land tours, receive individual deposits, distribute literature to individual members, and extend credit to the chartering organization in connection with expenses of solicitation or administration.[2] The prohibition on commission where an agent is a member of the chartering organization would also be removed. However, two restrictions would remain in effect: (1) The agent could not receive a commission from both the carrier and the charterer for the same service, and (2) he could not make payments or extend gratuities to any member of a chartering organization.

Consistent with the Board's findings in Docket 11908 that certain restrictions on agent activities are no longer necessary or desirable, we will remove the equivalent restrictions, as above described, from our approval of the IATA Charter Resolution. Such action will become effective on April 18, 1964 (i.e., concurrent with the effective date of the revisions in Part 295), unless before that time we should find reason to do otherwise as would be indicated by subsequent order. In this connection we will provide that any interested person may submit comments within a period of 15 days from the date of service of this order.

Accordingly, it is ordered:

1. That Order E–19426 be and it hereby is amended so as to rescind paragraph (d) in the appendix thereto and substitute therefor the following:

"(d) With respect to passenger charters in air transportation, as defined in the Act, where the cost of the charter is partially or wholly passed on to the passengers: [3]

(1) A travel agent may not receive a commission from both the direct air carrier and the charterer for the same service.

(2) A travel agent shall make no payments not extend gratuities of any kind, directly or indirectly, to any member of a chartering organization, whether in relation to air transportation or otherwise. Nothing in this paragraph is intended to restrict the travel agent from offering each member of the charter group such advertising and good will items as are customarily extended to individually ticketed passengers (e.g., a canvas traveling bag or a money exchange computer).

2. That this amendment shall take effect on April 18, 1964, unless previously modified or rescinded by order of the Board; and

3. That any interested person may, within 15 days from the date of service of this order, submit a statement in writing containing reasons deemed appropriate, together with supporting data, in support of or in opposition to the Board's action herein.[4]

This order will be published in the FEDERAL REGISTER.

By the Civil Aeronautics Board.

[SEAL] HAROLD R. SANDERSON, *Secretary.*

[F.R. Doc. 64–2988; Filed, Mar. 26, 1964; 8:50 a.m.]

[1] Order E–13681, adopted March 30, 1959.

[2] Nothing herein is designed to permit a travel agent to take the initiative in organizing a charter, or to proceed with the solicitation of members of an organization without the approval and cooperation of such organization. This is patent from the requirement, among others, that there be a central membership list against which individual eligibility can be checked by those responsible for administration of the charter. Since maintenance and authentication of such membership lists is a primary responsibility of the organization, approval and cooperation of the organization is a prime requisite before any agency action may be undertaken. See also section 295.36 and the appended Statement of Supporting Information referred to therein, particularly Section B of Part II of the Statement which requires the signatures of the chief officer of the chartering organization and the person within the organization in charge of charter arrangements.

[3] Paragraph (d) is not applicable to those charters exempted from Resolution 045 by subparagraph (2)(a) thereof.

[4] An original and 19 copies of such statements should be filed with the Board's Docket Section. Since we have provided for a period of time to respond to this order, petitions for reconsideration will not be entertained.

[Docket No. 14868]

LAKE CENTRAL AIRLINES, INC. "USE IT OR LOSE IT" AND ROUTE ALIGNMENT INVESTIGATION

Notice of Postponement of Prehearing Conference

Notice is hereby given that a prehearing conference in the above-entitled matter which was assigned to be held on April 7, 1964, is hereby reassigned to be held on April 9, 1964, at 10:00 a.m. e.s.t., in Room 725, Universal Building, Connecticut and Florida Avenues NW., Washington, D.C., before the undersigned examiner.

Dated at Washington, D.C. March 23, 1964.

[SEAL] EDWARD T. STODOLA, *Hearing Examiner.*

[F.R. Doc. 64–2989; Filed, Mar. 26, 1964; 8:50 a.m.]

FEDERAL COMMUNICATIONS COMMISSION

[Docket No. 15368]

RICHARD J. LOVETT

Order To Show Cause

In the matter of Richard J. Lovett, Vallejo, California, order to show cause why there should not be revoked the license for Radio Station KFC–1335 in the Citizens Radio Service.

The Commission, by the Chief, Safety and Special Radio Services Bureau, under delegated authority, having under consideration the matter of certain alleged violations of the Commission's rules in connection with the operation of the above-captioned station;

It appearing, that, pursuant to § 1.89 (formerly § 1.76) of the Commission's rules, written notice of violation of the Commission's rules was served upon the above-named licensee at his address of record as follows: Official Notice of Violation dated November 15, 1963, alleging violation of §§ 19.33 and 19.61(a) (now §§ 95.45 and 95.81(a)) of the Commission's rules.

It further apearing, that said licensee did not reply to such communication or to a follow-up letter dated December 10, 1963, also mailed to the licensee at his address of record; and

It further appearing, that, in view of the foregoing, the licensee has repeatedly violated § 1.89 of the Commission's rules; and

It further appearing, that the violations of § 1.89 of the Commission's rules and the related facts create apparent liability by the respondent to a monetary forfeiture of $100 under section 510 of the Communications Act of 1934, as amended, and § 1.80 of the Commission's rules; and also subject the license of the above-captioned station to revocation under the provisions of section 312 of the Communications Act of 1934, as amended; but further proceedings in this Docket should be limited to action

looking toward a determination as to whether an order of revocation should be issued;

It is ordered, This 12th day of March, 1964, pursuant to section 312(a)(4) and (c) of the Communications Act of 1934, as amended, and § 0.331(b)(8) of the Commission's rules, that licensee show cause why the license for the above-captioned radio station should not be revoked, and appear and give evidence in respect thereto at a hearing to be held at a time and place to be specified by subsequent order; and

It is further ordered, That the Secretary send a copy of this order by certified mail—return receipt requested to licensee at his last known address of 2014 Indiana Street, Vallejo, California.

Released: March 12, 1964

FEDERAL COMMUNICATIONS COMMISSION,
[SEAL] BEN F. WAPLE,
Secretary.

[F.R. Doc. 64-2993; Filed, Mar. 26, 1964; 8:50 a.m.]

[Docket No. 15392]

JACK R. ULRICH

Order To Show Cause

In the matter of Jack R. Ulrich, Bell Gardens, California, order to show cause why the license for radio station KEJ-7444 in the Citizens Radio Service should not be revoked.

The Commission, by the Chief, Safety and Special Radio Services Bureau, under delegated authority, having under consideration the matter of certain alleged violations of the Commission's rules in connection with the operation of the above-captioned station;

It appearing, that, pursuant to § 1.89 of the Commission's rules, written notice of violation of the Commission's rules was served upon the above-named licensee at his address of record as follows: Official Notice of Violation dated November 19, 1963, alleging violation of section 19.33 (now § 95.45) of the Commission's rules.

It further appearing, that the licensee did not reply to that communication or to a follow-up letter dated December 23, 1963, also mailed to the licensee at his address of record; and

It further appearing, that the foregoing communications from the Commission called for responses by the licensee within 10 and 15 days, respectively; and

It further appearing, that, in view of the foregoing, the licensee has repeatedly violated § 1.89 of the Commission's rules; and

It further appearing, that the violations of § 1.89 of the Commission's rules and the related facts create apparent liability by the respondent to a monetary forfeiture of $100 under section 510 of the Communications Act of 1934, as amended, and § 1.80 of the Commission's rules; and also subject the license of the above-captioned station to revocation under the provisions of section 312 of the Communications Act of 1934, as amended; but further proceedings in this Docket should be limited to action looking toward a determination as to whether an order of revocation should be issued;

It is ordered, This 23rd day of March 1964, pursuant to section 312(a)(4) and (c) of the Communications Act of 1934, as amended, and § 0.331(b)(8) of the Commission's rules, that licensee show cause why the license for the above-captioned radio station should not be revoked, and appear and give evidence in respect thereto at a hearing to be held at a time and place to be specified by subsequent order; and

It is further ordered, That the Secretary send a copy of this order by certified mail—return receipt requested to licensee at 6104 Buell, Bell Gardens, California, and 14814 San Antonio, Paramount, California.

Released: March 24, 1964.

FEDERAL COMMUNICATIONS COMMISSION,
[SEAL] BEN F. WAPLE,
Secretary.

[F.R. Doc. 64-2994; Filed, Mar. 26, 1964; 8:50 a.m.]

[Docket No. 15344]

RICHARD R. ZIMPEIMAN

Order To Show Cause

In the matter of Richard R. Zimpeiman, Spring Lake, North Carolina, order to show cause why there should not be revoked the license for radio station KCI-1019 in the Citizens Radio Service.

The Commission, by the Chief, Safety and Special Radio Services Bureau, under delegated authority, having under consideration the matter of certain alleged violations of the Commission's rules in connection with the operation of the above-captioned station;

It appearing, that, pursuant to § 1.89 (formerly § 1.76) of the Commission's rules, written notice of violation of the Commission's rules was served upon the above-named licensee at his address of record as follows: Official Notice of Violation dated December 27, 1963, alleging violation of § 95.81(a) (formerly § 19.61 (a)) of the Commission's rules.

It further appearing, that said licensee did not reply to such communication or to a follow-up letter dated January 7, 1964, also mailed to the licensee at his address of record; and

It further appearing, that, in view of the foregoing, the licensee has repeatedly violated § 1.89 of the Commission's rules; and

It further appearing, that the violations of Section 1.89 of the Commission's rules and the related facts create apparent liability by the respondent to a monetary forfeiture of $100 under section 510 of the Communications Act of 1934, as amended, and § 1.80 of the Commission's rules; and also subject the license of the above-captioned station to revocation under the provisions of section 312 of the Communications Act of 1934, as amended; but further proceedings in this Docket should be limited to action looking toward a determination as to whether an order of revocation should be issued;

It is ordered, This 27th day of February 1964, pursuant to section 312(a)(4) and (c) of the Communications Act of 1934, as amended, and § 0.331(b)(8) of the Commission's rules, that licensee show cause why the license for the above-captioned radio station should not be revoked, and appear and give evidence in respect thereto at a hearing to be held at a time and place to be specified by subsequent order; and

It is further ordered, That the Secretary send a copy of this order by certified mail—return receipt requested to licensee at his last known address of Route 1, Box 800, Spring Lake, North Carolina.

Released: February 27, 1964.

FEDERAL COMMUNICATIONS COMMISSION,
[SEAL] BEN F. WAPLE,
Secretary.

[F.R. Doc. 64-2995; Filed, Mar. 26, 1964; 8:51 a.m.]

[Docket Nos. 15384-15387; FCC 64-231]

BERKSHIRE BROADCASTING CORP. (WLAD) ET AL.

Order Designating Applications for Consolidated Hearing on Stated Issues

In re applications of the Berkshire Broadcasting Corporation (WLAD), Danbury, Connecticut, has 800 kc, 250 w, Day, requests 800 kc, 1 kw, Day, Docket No. 15384, File No. BP-13925; Chambersburg Broadcasting Company (WCHA), Chambersburg, Pennsylvania, has 800 kc, 1 kw, Day, requests 800 kc, 5 kw, Day, Docket No. 15385, File No. BP-14743; South Jersey Broadcasting Co. (WKDN), Camden, New Jersey, has 800 kc, 1 kw, Day, requests 800 kc, 5 kw, DA, Day, Docket No. 15386, File No. BP-14986; Richard M. Brescia, Jack Wormser and Marnette L. Saz, d/b as Eaglecon, Rockville, Connecticut, requests 800 kc, 1 kw, DA, Day, Docket No. 15387, File No. BP-14491; for construction permits.

At a session of the Federal Communications Commission held at its offices in Washington, D.C., on the 18th day of March, 1964;

The Commission having under consideration the above-captioned and described applications and a "Petition to Deny" the application of the Chambersburg Broadcasting Company, filed June 5, 1962 by the Reese Broadcasting Corporation, licensee of standard broadcast Station WCBG, Chambersburg, Pennsylvania and other documents related thereto;

It appearing, that, except as indicated by the issues specified below, each of the applicants is legally, technically and otherwise qualified to construct and operate as proposed, The Berkshire Broadcasting Corporation, Chambersburg Broadcasting Company and the South Jersey Broadcasting Co. are financially qualified, but for reasons hereinafter indicated, it cannot be determined that Eaglecon is financially qualified; and

It further appearing, that the following matters are to be considered in con-

nection with the aforementioned issues specified below:

1. With respect to The Berkshire Broadcasting Corporation (WLAD) application, it appears that the following matters must be considered in connection with the issues specified below:

(a) The Berkshire Broadcasting proposal may receive interference from the existing operations of Stations WKDN, Camden, New Jersey, and WGY, Schenectady, New York, affecting more than 10 percent of the population within the normally protected primary service area, in contravention of § 73.28(d) (3) of the Commission's Rules. With regard to the interference involved, field intensity measurement data submitted by this applicant were not made strictly in accordance with § 73.186 of the rules to establish that interference would not be involved.

(b) The proposal may involve mutual co-channel interference with the above-captioned Eaglecon and South Jersey Broadcasting Co. (WKDN) proposals.

(c) The proposal may involve mutual adjacent channel interference, 10 kilocycles removed, with the existing operation of Station WGY, Schenectady, New York and mutual co-channel interference with the existing operation of WKDN.

2. With respect to the Chambersburg Broadcasting Company (WCHA) application, it appears that the following matters must be considered in connection with the issues specified below:

(a) The Chambersburg Broadcasting proposal would receive interference from the existing operations of Stations WKDN, Camden, New Jersey, and CKLW, Windsor, Ontario, Canada, affecting more than 10 percent of the population within its normally protected primary service area, in contravention of § 73.28(d) (3) of the rules.

(b) The proposal would involve mutual co-channel interference with the existing operation and the above-described proposed operation of Station WKDN.

(c) The Reese Broadcasting Corporation, licensee of standard broadcast Station WCBG, Chambersburg, Pennsylvania, has filed a "Petition to Deny" the Chambersburg Broadcasting proposal for the reasons set forth in subparagraphs (a) and (b). The petitioner contends, correctly, that it has standing as a party in interest with respect to the Chambersburg Broadcasting application since a grant of that application might result in economic injury to the petitioner. Federal Communications Commission v. Sanders Brothers Radio Station, 309 U.S. 470, 9 R.R. 2008 (1940).

3. With respect to the South Jersey Broadcasting Co. (WKDN) application, the proposal would cause interference to the existing and proposed operation of Station WLAD and would receive interference from the proposal of WLAD. Measurement data utilized by the applicant to indicate that interference would not be caused are not considered adequate in accordance with the requirements of § 73.186 of the rules.

4. With respect to the Eaglecon application, it appears that the following matters must be considered in connection with the issues specified below:

(a) The financial information submitted by Eaglecon is not sufficiently complete to provide a basis for a finding that the firm is financially qualified to meet the costs of construction and initial operation of the proposed station. The balance sheets of Messrs. Brescia and Saz do not show cash and/or liquid assets in the amount required to meet their commitments to partnership capital. Eaglecon has submitted a letter from an equipment manufacturer showing an estimated cost of equipment as $32,435 while section III of the application shows an estimate of the total cost of the station as $27,900. This discrepancy requires clarification.

(b) The Eaglecon proposal may receive interference from existing stations and from the proposed operation of WLAD affecting more than 10 percent of the population within its normally protected primary service area, in contravention of § 73.28(d) (3) of the Commission rules.

(c) The proposal may involve mutual interference with the above-captioned Berkshire Corporation (WLAD) proposal and with the existing operations of WGY, Schenectady, New York and WCCM, Lawrence, Massachusetts. Measurement data made on Station WGY and submitted with the Eaglecon proposal are not considered adequate in accordance with the provisions of § 73.186 of the rules to establish that no interference would be involved with Station WGY.

(d) Richard M. Brescia, one of the Eaglecon partners, is general manager of Station WDEW, Westfield, Massachusetts, which lies within the proposed service area and serves a substantial portion of the area which would receive the signal of the Eaglecon proposal. Therefore, in the event of a grant of the Eaglecon application, program tests will not be authorized until the permittee has submitted evidence that Brescia has severed his connections with WDEW.

It further appearing, that the proposed operation of WKDN would involve slight mutual interference with an operation proposed in the application (File No. BP-5970) of The Chesapeake Broadcasting Corporation, which requests authority to increase power of former Station WABW (now WYRE), Annapolis, Maryland; that the present provisions of the Commission's rules do not permit consideration of the Annapolis proposal; that the licensee who filed the Annapolis proposal is no longer licensee of the station; that the mutual interference between the WKDN proposal and the Annapolis proposal is not significant but that any grant of the WKDN application will be subject to the condition that the permittee shall accept any interference that may result in the event of a subsequent grant of the Annapolis proposal; and

It further appearing, that the Eaglecon proposal is in contravention of § 1.569 of the Commission's rules (formerly § 1.351) with respect to Class I–A channels within 30 kilocycles of the proposed frequency but that studies indicate the proposed operation would not materially prejudice future consideration of the Class I–A channels and, accordingly, the Commission, on its own motion, will waive the provisions of said rule; and

It further appearing, that, in view of the foregoing, the Commission is unable to make the statutory finding that a grant of the applications would serve the public interest, convenience and necessity, and is of the opinion that the applications must be designated for hearing in a consolidated proceeding on the issues set forth below:

It is ordered, That, pursuant to section 309(e) of the Communications Act of 1934, as amended, the applications are designated for hearing in a consolidated proceeding, at a time and place to be specified in a subsequent Order, upon the following issues:

1. To determine the areas and populations which would receive primary service from the Eaglecon proposal and the availability of other primary service to such areas and populations.

2. To determine the areas and populations which may be expected to gain or lose primary service from the proposed operations of Stations WLAD, WCHA, and WKDN and the availability of other primary service to such areas and populations.

3. To determine the nature and extent of the interference, if any, that each of the proposals would cause to and receive from each other and the interference that each of the proposals would receive from all other existing standard broadcast stations, the areas and populations affected thereby, and the availability of other primary service to the areas and populations affected by interference from any of the proposals.

4. To determine whether the proposal of The Berkshire Broadcasting Corporation would cause objectionable interference to Station WGY, Schenectady, New York, and WKDN, Camden, New Jersey, or any other existing standard broadcast stations, and, if so, the nature and extent thereof, the areas and populations affected thereby, and the availability of other primary service to such areas and populations.

5. To determine whether the proposal of the Chambersburg Broadcasting Company would cause objectionable interference to Station WKDN, Camden, New Jersey, or any other existing standard broadcast stations, and, if so, the nature and extent thereof, the areas and populations affected thereby, and the availability of other primary service to such areas and populations.

6. To determine whether the proposal of South Jersey Broadcasting Co. would cause objectionable interference to Station WLAD, Danbury, Connecticut, or any other existing standard broadcast stations, and, if so, the nature and extent thereof, the areas and populations affected thereby, and the availability of other primary service to such areas and populations.

7. To determine whether the proposal of Eaglecon would cause objectionable interference to Stations WGY, Schenectady, New York and WCCM, Lawrence, Massachusetts, or any other existing standard broadcast stations, and, if so, the nature and extent thereof, the areas and populations affected there-

by, and the availability of other primary service to such areas and populations.

8. To determine whether the interference received by each proposal from any of the other proposals herein and any existing stations would affect more than ten percent of the population within its normally protected primary service area in contravention of § 73.28(d)(3) of the Commission rules and, if so, whether circumstances exist which would warrant a waiver of said section.

9. To determine whether Eaglecon is financially qualified to construct and operate its proposed station.

10. To determine, in the light of section 307(b) of the Communications Act of 1934, as amended, which of the proposals would best provide a fair, efficient and equitable distribution of radio service.

11. To determine, in the light of the evidence adduced pursuant to the foregoing issues which, if any, of the applications should be granted.

It is further ordered, That the General Electric Company, licensee of Station WGY, Schenectady, New York; the Curt Gowdy Broadcasting Corporation, licensee of Station WCCM, Lawrence, Massachusetts; and the Reese Broadcasting Corporation, licensee of Station WCBG, Chambersburg, Pennsylvania, are made parties to the proceeding.

It is further ordered, That The Berkshire Broadcasting Corporation (WLAD), Chambersburg Broadcasting Company (WCHA), and the South Jersey Broadcasting Co. (WKDN), are made parties respondent with respect to their existing operations.

It is further ordered, That the petition filed June 5, 1962 by Reese Broadcasting Corporation is granted to the extent indicated above and is denied in all other respects.

It is further ordered, That the burden of proceeding with the introduction of evidence and the burden of proof, with respect to the above-stated issues referred to in the Reese Broadcasting petition is hereby placed upon the applicant.

It is further ordered, That the provisions of § 1.569 of the Commission's rules are waived with respect to the Eaglecon proposal.

It is further ordered, That in the event of a grant of the South Jersey Broadcasting Co. application, the construction permit shall contain the following condition:

> Permittee shall accept any interference which may result in the event of a subsequent grant of the application filed by The Chesapeake Radio Corporation, File No. BP-5970, to increase the power of Station WABW (now WYRE), Annapolis, Maryland, to one kilowatt.

It is further ordered, That, in the event of a grant of the application of The Berkshire Broadcasting Corporation and the Chambersburg Broadcasting Company, the construction permits shall include the following condition:

> Permittee shall submit with the application for license antenna resistance measurements made in accordance with § 73.54 of the Commission's rules.

It is further ordered, That, in the event of a grant of the application of Eaglecon, program tests will not be authorized until the permittee has submitted evidence that Richard M. Brescia has severed his connections with Station WDEW, Westfield, Massachusetts.

It is further ordered, That, to avail themselves of the opportunity to be heard, the applicants and parties respondent herein, pursuant to § 1.221(c) of the Commission rules, in person or by attorney, shall within 20 days of the mailing of this Order, file with the Commission in triplicate, a written appearance stating an intention to appear on the date fixed for the hearing and present evidence on the issues specified in this Order.

It is further ordered, That the applicants herein shall, pursuant to section 311(a)(2) of the Communications Act of 1934, as amended, and § 1.594 of the Commission's rules, give notice of the hearing, either individually or, if feasible and consistent with the rules, jointly, within the time and in the manner prescribed in such rule, and shall advise the Commission of the publication of such notice as required by § 1.594(g) of the rules.

It is further ordered, That, the issues in the above-captioned proceeding may be enlarged by the Examiner, on his own motion or on petition properly filed by a party to the proceeding, and upon sufficient allegations of fact in support thereof, by the addition of the following issue: To determine whether the funds available to the applicant will give reasonable assurance that the proposals set forth in the application will be effectuated.

Released: March 24, 1964.

FEDERAL COMMUNICATIONS COMMISSION,[1]
[SEAL] BEN F. WAPLE,
Secretary.

[F.R. Doc. 64-2996; Filed, Mar. 26, 1964; 8:51 a.m.]

[Docket Nos. 12865, 12866; FCC 64M-247]

CHRONICLE PUBLISHING CO. (KRON-TV) AND AMERICAN BROADCASTING-PARAMOUNT THEATRES, INC. (KGO-TV)

Order Scheduling Prehearing Conference

In re applications of Chronicle Publishing Company (KRON-TV), San Francisco, California, Docket No. 12865, File No. BPCT-2168; American Broadcasting-Paramount Theatres, Inc. (KGO-TV), San Francisco, California, Docket No. 12866, File No. BPCT-2401; for construction permits.

Pursuant to a prehearing conference as of this date: *It is ordered,* This 23d day of March 1964, that the hearing in the above-entitled proceeding, now scheduled for May 6, 1964, be and the same is hereby cancelled;

It is further ordered, That there will be a further prehearing conference herein on April 13, 1964, 9:00 a.m., in the Commission's Offices, Washington, D.C.

Released: March 24, 1964.

FEDERAL COMMUNICATIONS COMMISSION,
[SEAL] BEN F. WAPLE,
Secretary.

[F.R. Doc. 64-2997; Filed, Mar. 26, 1964; 8:51 a.m.]

[Docket Nos. 15260, 15261; FCC 64M-245]

COOSA VALLEY RADIO CO. AND ROME BROADCASTING CORP.

Order Continuing Hearing

In re applications of Coosa Valley Radio Company, Rome, Georgia, Docket No. 15260, File No. BPH-4108; Rome Broadcasting Corporation, Rome, Georgia, Docket No. 15261, File No. BPH-4136; for construction permits.

The Hearing Examiner having under consideration a motion filed March 18, 1964 by Rome Broadcasting Corporation, requesting that the hearing herein, presently scheduled to commence on April 13, 1964, be continued for a period of 60 to 90 days, and that the dates agreed upon for procedural matters be cancelled;

It appearing, that there is the possibility of allocating another FM channel to Rome, Georgia, that there is being prepared by petitioner's consulting radio engineer an engineering report to support a petition for rule making looking toward the allocation of such a channel, that such a petition will be filed within the next two weeks, and that if another channel is allocated the subject proceeding will be unnecessary; and

It further appearing, that counsel for all other parties join in the subject request and that the public interest requires immediate consideration thereof;

It is ordered, This 20th day of March 1964, that the subject motion is granted; that the March 23, 1964 date for exchange of exhibits and the April 6, 1964 date for notification of witnesses, if any, desired for cross-examination are cancelled; and that the hearing, presently scheduled to commence on April 13, 1964, is continued to 10:00 a.m., June 22, 1964.

Released: March 24, 1964.

FEDERAL COMMUNICATIONS COMMISSION,
[SEAL] BEN F. WAPLE,
Secretary.

[F.R. Doc. 64-2998; Filed, Mar. 26, 1964; 8:51 a.m.]

[Docket Nos. 15374-15376; FCC 64M-246]

KTIV TELEVISION CO. (KTIV) ET AL.

Order Continuing Prehearing Conference

In re applications of KTIV Television Company (KTIV), Sioux City, Iowa, Docket No. 15374, File No. BPCT-3127, for construction permit to make changes in the facilities of Television Broadcast Station KTIV; Peoples Broadcasting Corporation (KVTV), Sioux City, Iowa,

[1] Commissioner Bartley absent.

Docket No. 15375, File No. BPCT-3128, for construction permit to make changes in the facilities of Television Broadcast Station KVTV; Central Broadcasting Company (WHO-TV), Des Moines, Iowa, Docket No. 15376, File No. BPCT-3138, for construction permit to make changes in the facilities of Television Broadcast Station WHO-TV.

Upon verbal request by counsel for applicants in the above-entitled proceeding: *It is ordered*, This 23d day of March 1964, that the prehearing conference now scheduled for April 6, 1964, be and the same is hereby rescheduled for 10:00 a.m., April 10, 1964, in the Commission's Offices, Washington, D.C.

Released: March 24, 1964.

FEDERAL COMMUNICATIONS COMMISSION,
[SEAL] BEN F. WAPLE,
Secretary.

[F.R. Doc. 64-2999; Filed, Mar. 26, 1964; 8:51 a.m.]

[Docket No. 15388; FCC 64-232]

SUNDIAL BROADCASTING CORP. (KIBE)

Order Designating Application for Hearing on Stated Issues

In re application of Sundial Broadcasting Corporation (KIBE), Palo Alto, California, has 1220 kc, 1 kw, Day, requests 1220 kc, 5 kw, Day, Docket No. 15388, File No. BP-14755, for construction permit.

At a session of the Federal Communications Commission held at its offices in Washington, D.C., on the 18th day of March 1964;

The Commission having under consideration the above-captioned and described application;

It appearing, that, except as indicated by the issues specified below, the applicant is legally, technically, financially and otherwise qualified to construct and operate KIBE as proposed but that the proposed operation of Station KIBE would increase the interference now being received by Station KLIP, Fowler, California (1220 kc, 250 w, Day); and

It further appearing, that the licensee of Station KWG, Stockton, California, was authorized to increase power in 1961 at which time KWG and KIBE agreed to accept any mutual interference which might result from the previously authorized KWG operation and the presently proposed KIBE operation and that, therefore, mutual interference between KWG and KIBE will not be considered under the issues specified below; and

It further appearing, that, in view of the foregoing, the Commission is unable to make the statutory finding, without a hearing, that a grant of the KIBE application would serve the public interest, convenience and necessity, and is of the opinion that the application must be designated for hearing on the issues specified below;

It is ordered, That, pursuant to section 309(e) of the Communications Act of 1934, as amended, the application is designated for hearing, at a time and place to be specified in a subsequent Order, upon the following issues:

1. To determine the areas and populations which may be expected to gain or lose primary service from the proposed operation of Station KIBE and the availability of other primary service to such areas and populations.

2. To determine whether the proposed operation of Station KIBE would cause objectionable interference to Station KLIP, Fowler, California, or any other existing standard broadcast stations, and, if so, the nature and extent thereof, the areas and populations affected thereby, and the availability of other primary service to such areas and populations.

3. To determine, in the light of the evidence adduced pursuant to the foregoing issues, whether a grant of the application would serve the public interest, convenience and necessity.

It is further ordered, That Morris Mindel, licensee of Station KLIP, is made a party to the proceeding.

It is further ordered, That, to avail themselves of the opportunity to be heard, the applicant and party respondent herein, pursuant to § 1.221(c) of the Commission's rules, in person or by attorney, shall, within twenty (20) days of the mailing of this Order, file with the Commission in triplicate, a written appearance stating an intention to appear on the date fixed for the hearing and present evidence on the issues specified in this Order.

It is further ordered, That the applicant herein shall, pursuant to section 311(a)(2) of the Communications Act of 1934, as amended, and § 1.594 of the Commission's rules, give notice of the hearing, within the time and in the manner prescribed in such rule and shall advise the Commission of the publication of such notice as required by § 1.594(g) of the rules.

Released: March 24, 1964.

FEDERAL COMMUNICATIONS COMMISSION,[1]
[SEAL] BEN F. WAPLE,
Secretary.

[F.R. Doc. 64-3000; Filed, Mar. 26, 1964; 8:52 a.m.]

[Docket No. 15248-15250; FCC 64M-242]

UNITED ARTISTS BROADCASTING, INC., ET AL.

Order Continuing Hearing

In re applications of United Artists Broadcasting, Inc., Cleveland, Ohio, Docket No. 15248, File No. BPCT-3168; Cleveland Telecasting Corp., Cleveland, Ohio, Docket No. 15249, File No. BPCT-3191; The Superior Broadcasting Corp., Cleveland, Ohio, Docket No. 15250, File No. BPCT-3243; for construction permits for new television broadcast stations.

There is pending on behalf of United Artists Broadcasting a Petition for Leave to Amend, the grant of which would result in a removal of that applicant from this hearing. While responsive pleadings are being formed and until decision is had upon the matter, the machinery for moving forward with trial of this proceeding will be held in abeyance. Under the circumstance, the dates now scheduled for the commencement of hearing cannot be met.

Accordingly, it is ordered, This 20th day of March 1964, that the date of May 25, 1964, now scheduled for the beginning of hearing in this proceeding is cancelled and the proceeding is continued to a date to be fixed by subsequent order.

Released: March 23, 1964.

FEDERAL COMMUNICATIONS COMMISSION,
[SEAL] BEN F. WAPLE,
Secretary.

[F.R. Doc. 64-3001; Filed, Mar. 26, 1964; 8:52 a.m.]

[1] Commissioner Bartley absent.

FEDERAL POWER COMMISSION

[Project No. 1971]

IDAHO POWER CO.

Order Approving Continuance of Hearing

MARCH 23, 1964.

Pursuant to the Commission's order issued December 11, 1963, the Presiding Examiner convened a prehearing conference in this proceeding on February 25, 1964. The parties agreed that the report on the evaluation studies made by the fishery agencies would be circulated by May 1, 1964; that by May 15, 1964, all parties would circulate requests for any additional testimony or evidence; and that on June 2, 1964, the hearing would reconvene.

The Presiding Examiner, on February 25, 1964, fixed the continuance of the hearing to the above date.

The Commission finds. In view of the foregoing, the continuance in excess of 30 days granted by the Presiding Examiner to June 2, 1964, should be approved.

The Commission orders:

The continuance granted by the Presiding Examiner to June 2, 1964, is hereby approved.

By the Commission.

[SEAL] JOSEPH H. GUTRIDE,
Secretary.

[F.R. Doc. 64-2969; Filed, Mar. 26, 1964; 8:48 a.m.]

GENERAL SERVICES ADMINISTRATION

PIG TIN HELD IN NATIONAL STOCKPILE

Proposed Disposition

Pursuant to the provisions of section 3(e) of the Strategic and Critical Materials Stock Piling Act, 50 U.S.C. 98b(e), notice is hereby given of a proposed disposition of approximately 98,000 long tons of pig tin now held in the national stockpile.

The Office of Emergency Planning has made a revised determination, pursuant to section 2(a) of the Strategic and Critcial Materials Stock Piling Act, 50

U.S.C. 98a(a), that said pig tin is excess to stockpile needs.

Since the revised determination is not by reason of obsolescence of the pig tin for use in time of war, this proposed disposition is being referred to the Congress for its express approval, as required by section 3(e) of the Strategic and Critical Materials Stock Piling Act.

General Services Administration proposes to make said pig tin available for transfer to other Government agencies, for sale on a competitive basis, or otherwise to dispose of it in the best interest of the Government upon the express approval by the Congress but not earlier than six months after the date of publication of this notice in the FEDERAL REGISTER.

The 98,000 long tons of pig tin will be disposed of over a period of approximately six to eight years. To insure that this disposal program is fully coordinated with other Government programs and objectives it shall be reviewed annually or, if necessary, more frequently, by the Administrator of General Services in consultation with other interested departments and agencies. The rate and conditions of disposal will be established with due regard to the protection of producers, processors, and consumers against avoidable disruption of their usual markets as well as the protection of the United States against avoidable loss.

Dated: March 20, 1964.

BERNARD L. BOUTIN,
Administrator of General Services.

[F.R. Doc. 64-2954; Filed, Mar. 26, 1964; 8:46 a.m.]

[Delegation of Authority No. 117, Revised]

CHAIRMAN, ATOMIC ENERGY COMMISSION

Delegation of Authority To Lease Space in Idaho Falls, Idaho

1. Pursuant to the authority vested in me by the Federal Property and Administrative Services Act of 1949, 63 Stat. 377, as amended, authority is hereby delegated to the Chairman, United States Atomic Energy Commission, to perform all functions in connection with the leasing of not to exceed a total of 70,000 inside gross square feet of office and related storage and special purpose space in or near Idaho Falls, Idaho, for the use of the Idaho Operations Office of the said Atomic Energy Commission.

2. This authority shall include authority to contract by lease and authority thereafter to modify and amend said lease, assign and reassign the space demised, including the operation, maintenance, control and protection thereof. This authorization shall extend to leasing space under authority contained in section 210(h)(1) of the above-cited Act for a firm term of ten years with two renewal terms of five years each.

3. This authority shall be exercised in accordance with the limitations and requirements of the above-cited Act, section 322 of the Act of June 30, 1932, as amended (40 U.S.C. 278a) and other applicable statutes and regulations.

4. The authority herein contained may be redelegated to any officer or employee of the Atomic Energy Commission.

5. This delegation of authority is effective immediately.

Dated: March 23, 1964.

BERNARD L. BOUTIN,
Administrator of General Services.

[F.R. Doc. 64-2990; Filed, Mar. 26, 1964; 8:50 a.m.]

INTERAGENCY TEXTILE ADMINISTRATIVE COMMITTEE

CERTAIN COTTON TEXTILES AND COTTON TEXTILE PRODUCTS UNDER THE LONG TERM ARRANGEMENT REGARDING INTERNATIONAL TRADE IN COTTON TEXTILES

Announcement of ITAC Actions and Restraint Levels

MARCH 16, 1964.

The purpose of this notice is to announce certain actions taken by the United States Government in furtherance of the objectives of, and under the terms of, the Long-Term Arrangement Regarding International Trade in Cotton Textiles, done at Geneva on February 9, 1962.

1. *Bilateral agreements.* Pursuant to Article 4 of the Long-Term Arrangement, a bilateral agreement between Portugal and the United States has been concluded.

In addition, consultations are in progress with India and also with Pakistan concerning trade in cotton textiles with the United States. These talks are being undertaken pursuant to a recommendation by the GATT Cotton Textiles Committee at its meeting in Geneva in December 1963 that individual importing and exporting countries schedule regular periodic consultations on developments in their trade in cotton textiles.

2. *Completed restraint actions.* On March 16, 1964, the Interagency Textile Administrative Committee announced that discussions had been completed with Mexico under Article 3 of the Long-Term Arrangement with regard to the following categories, for a period of twelve months in the amounts indicated:

Category	Restraint level	Effective date
22	100,000 square yards	July 15, 1963
26*	1,000,000 square yards	Feb. 15, 1964

*Exports of duck may not exceed 80 percent of the total permissible shipments under the restraint level.

3. *New actions.* On March 16 the ITAC announced that under Article 3 of the LTA, the Hong Kong authorities have provisionally agreed for a twelve-month period to the following restraint:

Category	Restraint level	Effective date
55	111,500 dozen	Oct. 1, 1963

Discussions were continuing with the governments of several countries concerning the restraint of certain exports of cotton textiles and cotton textile products which are causing or threatening to cause disruption in the United States market as follows:

Country	*Category*
Argentina	1
Brazil	9
Trinidad and Tobago	26 and 61

JAMES S. LOVE, JR.,
Chairman, Interagency Textile Administrative Committee, and Deputy to the Secretary of Commerce for Textile Programs.

[F.R. Doc. 64-2987; Filed, Mar. 26, 1964; 8:50 a.m.]

OFFICE OF EMERGENCY PLANNING

H. BURKE HORTON

Appointee's Statement of Changes in Business Interests

The following statement lists the names and concerns required by subsection 710(b)(6) of the Defense Production Act of 1950, as amended.

No changes since last Statement submitted 1 July 1963, and published in the FEDERAL REGISTER August 15, 1963 (28 F.R. 8391).

Dated: February 15, 1964.

H. BURKE HORTON.

[F.R. Doc. 64-2952; Filed, Mar. 26, 1964; 8:46 a.m.]

WEST VIRGINIA

Notice of Major Disaster

Pursuant to the authority vested in me by the President under Executive Order 10427 of January 16, 1953, Executive Order 10737 of October 29, 1957, and Executive Order 11051 of September 27, 1962 (18 F.R. 407, 22 F.R. 8799, 27 F.R. 9683); Reorganization Plan No. 1 of 1958, Public Law 85-763, and Public Law 87-296; by virtue of the Act of September 30, 1950, entitled "An Act to authorize Federal assistance to States and local governments in major disasters, and for other purposes" (42 U.S.C. 1855-1855g), as amended; notice is hereby given of a declaration of "major disaster" by the President in his letter to me dated March 20, 1964, reading in part as follows:

I hereby determine the damage in the various areas of the State of West Virginia, adversely affected by severe storms and flooding beginning on or about March 9, 1964, to be of sufficient severity and magnitude to warrant disaster assistance by the Federal Government to supplement State and local efforts.

I do hereby determine the following areas in the State of West Virginia to have been adversely affected by the catastrophe declared a major disaster by the President in his declaration of March 20, 1964:

The counties of:

Brooke.	Ohio.
Cabell.	Pleasants.
Hancock.	Tyler.
Jackson.	Wayne.
Marshall.	Wetzel.
Mason.	Wood.

Dated: March 20, 1964.

EDWARD A. MCDERMOTT,
Director, Office of Emergency Planning.

[F.R. Doc. 64-2953; Filed, Mar. 26, 1964; 8:46 a.m.]

SMALL BUSINESS ADMINISTRATION

[Declaration of Disaster Area 459]

CALIFORNIA

Declaration of Disaster Area

Whereas, it has been reported that during the month of March, 1964, because of the effects of certain disasters, damage resulted to residences and business property located in Los Angeles County in the State of California;

Whereas, the Small Business Administration has investigated and has received other reports of investigations of conditions in the area affected;

Whereas, after reading and evaluating reports of such conditions, I find that the conditions in such area constitute a catastrophe within the purview of the Small Business Act, as amended.

Now, therefore, as Executive Administrator of the Small Business Administration, I hereby determine that:

1. Applications for disaster loans under the provisions of section 7(b)(1) of the Small Business Act, as amended, may be received and considered by the Office below indicated from persons or firms whose property, situated in the aforesaid County and areas adjacent thereto, suffered damage or destruction resulting from fire and accompanying conditions occurring on or about March 16, 1964.

Office:
Small Business Administration Regional Office,
312 West Fifth St.,
Los Angeles 13, Calif.

2. Applications for disaster loans under the authority of this Declaration will not be accepted subsequent to September 30, 1964.

Dated: March 17, 1964.

ROSS D. DAVIS,
Executive Administrator.

[F.R. Doc. 64-2957; Filed, Mar. 26, 1964; 8:47 a.m.]

[Declaration of Disaster Area 457]

PENNSYLVANIA

Declaration of Disaster Area

Whereas, it has been reported that during the month of March, 1964, because of the effects of certain disasters, damage resulted to residences and business property located in Clinton, Lycoming, Northumberland, Union, Montour, Snyder and Dauphin Counties in the State of Pennsylvania;

Whereas, the Small Business Administration has investigated and has received other reports of investigations of conditions in the areas affected;

Whereas, after reading and evaluating reports of such conditions, I find that the conditions in such areas constitute a catastrophe within the purview of the Small Business Act, as amended.

Now, therefore, as Executive Administrator of the Small Business Administration, I hereby determine that:

1. Applications for disaster loans under the provisions of section 7(b)(1) of the Small Business Act, as amended, may be received and considered by the Office below indicated from persons or firms whose property, situated in the aforesaid Counties and areas adjacent thereto, suffered damage or destruction resulting from floods and accompanying conditions occurring on or about March 10, 1964.

Office:
Small Business Administration Regional Office,
1015 Chestnut St.,
Philadelphia, Pa.

2. A temporary disaster field office will be established, address to be announced locally.

3. Applications for disaster loans under the authority of this Declaration will not be accepted subsequent to September 30, 1964.

Dated: March 12, 1964.

ROSS D. DAVIS,
Executive Administrator.

[F.R. Doc. 64-2958; Filed, Mar. 26, 1964; 8:47 a.m.]

TARIFF COMMISSION

[AA1921-33]

[TC Publication 122]

STEEL REINFORCING BARS FROM CANADA

Determination of Likelihood of Injury

MARCH 23, 1964.

On December 23, 1963, the Tariff Commission was advised by the Assistant Secretary of the Treasury that steel reinforcing bars from Canada, manufactured by Western Canada Steel Limited through its subsidiary, the Vancouver Rolling Mills Limited of Vancouver, Canada, are being, or are likely to be, sold in the United States at less than fair value as that term is used in the Antidumping Act. Accordingly, the Commission on December 24, 1963, instituted an investigation under section 201(a) of the Antidumping Act, 1921, as amended, to determine whether an industry in the United States is being or is likely to be injured, or is prevented from being established, by reason of the importation of such merchandise into the United States.

Public notices of the institution of the investigation and of a public hearing to be held in connection therewith were published in the FEDERAL REGISTER (28 F.R. 14534 and 29 F.R. 519). The hearing was held on February 11, 1964.

In arriving at a determination in this case, due consideration was given by the Commission to all written submissions from interested parties, all testimony adduced at the hearing, and all information obtained by the Commission's staff.

On the basis of the investigation, the Commission has determined (Commissioners Dorfman, Talbot, and Fenn dissenting)[1] that an industry in the United States is likely to be injured by reason of the importation of steel reinforcing bars from Canada, manufactured by Western Canada Steel Limited through its subsidiary, the Vancouver Rolling Mills Limited of Vancouver, Canada, sold at less than fair value within the meaning of the Antidumping Act, 1921, as amended.

Statement of reasons for affirmative determination. The steel reinforcing bars (re-bars) found by the Assistant Secretary of the Treasury to have been purchased from the subject Canadian plant at less than fair value have been entering the United States since mid 1960. They continue to be imported. At first the imports were sold in a wide area of the United States. However, in 1962 the importer concentrated most of his sales in the Northwest area of the United States (principally Oregon and Washington) which now constitutes the only major competitive market area in which the imported re-bars are sold. This area, except for imports, is served almost exclusively by three domestic mills located within that area. In recent years there have been only rare instances in which special circumstances have made it feasible for other domestic mills to ship re-bars into that competitive market area. This is principally because of the peculiar location of the market area and the higher shipping costs applicable to shipments of the other

[1] The views of Commissioners Dorfman and Talbot and the separate views of Commissioner Fenn follow the statement of reasons for the affirmative determination. (Views filed as part of original document.) Section 201(a) of the Antidumping Act provides that the "Commission shall be deemed to have made an affirmative determination if the Commissioners of the said Commission voting are evenly divided as to whether its determination should be in the affirmative or in the negative."

more distant mills. The price level of re-bars in the Northwest market area is affected only within broad ranges by the general price level of domestic re-bars sold throughout the remainder of the United States.

During the years 1962 and 1963, the importer sold his re-bars at prices materially lower than the price of any domestic re-bars sold in the area with three possible minor exceptions; out of an estimated 800 sales of domestic re-bars, three made in the last quarter of 1963 were sold at prices that may have been slightly lower than the price of the imported re-bars. Adequate data were not at hand to determine whether these three sales were actually made at lower prices.

No evidence obtained in this investigation clearly indicates that other imported re-bars are price leaders in the Northwest area of the United States. Offshore imports come in shorter lengths and frequently contain excessive rust. After taking into consideration the higher waste factors and other facts associated with offshore imports, it is clear that the price level of such imports in the Northwest market area is generally as high or higher than the price of domestic re-bars. Such imports have no appreciable influence on the market price levels for re-bars in the Northwest market area. Moreover, shipments from the Canadian plant have a peculiar advantage over offshore imports in that the importer can make prompt deliveries comparable to deliveries by the domestic mills selling in the Northwest market area.

It is evident that the market price for re-bars in the Northwest area began to soften in late 1959 or early 1960. However, a sharp decline in prices did not occur until the sales of the imported Canadian re-bars were concentrated in that area. The importer, an apparent novice in the steel business, has demonstrated a phenomenal success in establishing a re-bar business in the Northwest area having gross sales in excess of $500,000 per year during each of the years 1962 and 1963. This unusual and easy success can only be attributed to his significant underselling of the prices for all domestic re-bars sold in the market area by the three local mills. These facts are persuasive that his gross underselling of the domestic product helped depress prices in the last two years. The depressed prices cannot be accurately measured, especially within the time directed by statute for this investigation. Nevertheless, it is clear that the price levels have been depressed at least 9 percent and that they may have been depressed by as much as 24 percent in some sales.

The interrelationships among the various influences in this industry are very complex: There are various size and grade combinations; there are at least three clearly different channels of distribution (warehouses, independent fabricators and integrated producer-fabricators plus combinations thereof and changing patterns therein); geographically there is a clearly distinguishable pattern of production and distribution almost exclusive to the states of Oregon and Washington but, at the same time, there are inter-market influences; and the production of end products of the mills can be shifted easily from one product to another, e.g., from merchant bars to re-bars.

Given this multitude of interrelated forces in this particular case, it is difficult during the allotted time for this investigation to appraise accurately and finally all the cause and effect relationships. However, one thing clearly emerges from this complex of circumstances: the likelihood of material injury to the domestic industry if sales at less than fair value continue unabated. Having so concluded, there is no necessity to probe more deeply into the question as to whether material injury has occurred.

As to likelihood of injury, we note the following:

1. Imports at less than fair value continue.

2. Sales of such imports in the United States continue to be made at prices grossly lower than prices of domestic re-bars in the competitive market area as explained heretofore in this statement.

3. Although the importer states that his imports in 1964 will not exceed the level of his imports in the preceding two years because of the non-availability of such re-bars for export to the United States, he nevertheless has a confidential contractual relationship with the Canadian producer that is quite persuasive that such imports will increase.

4. The Canadian producer offers his marginal production of re-bars to the importer under an arrangement which is quite patently designed for the disposal of such marginal production in a market which will not interfere with his home market.

5. The Canadian producer can easily increase his production of re-bars by merely making less merchant bars, bar-size shapes, and small structurals as only a portion of its steel production now goes into re-bars.

Under these circumstances it is clear that such imports would continue to have a price-depressing effect in the Northwest market area and the anti-competitive effect of such imports could be expected to grow if condoned by a negative determination. In view of all the facts that may be properly considered under the Antidumping Act it is our opinion that an industry is likely to be injured by such imports.

We further observe that markets are valuable assets of an industry. In fact, the value of a plant, an organization, or industrial know-how can be destroyed by the loss of markets for the output. The national policy of the United States is to encourage international trade and this certainly has not expressed itself in protecting domestic industries from all lower prices and all market pressures generated by imports. Domestic industry has been expected to adjust. While no industry has unlimited, preemptive or continuing property rights to a market there are some types of competition which the Antidumping Act is intended to control. If one wants to get extremely technical one can argue that the existence or likelihood of injury is a fact relating solely to the party on the receiving end and has nothing to do with the perpetrator of the act. But in the Dominican cement case, a majority of the Commission found that the fact that the foreign producer had both "the capacity and incentive" to continue selling below fair value was relevant to its determination of likelihood of injury. Similar conditions prevail here.

There is also a question of whether and to what extent the condition of the alleged victim should be taken into account in appraising injury. Is an extremely strong person less injured or his rights less violated by a given loss than is a weak person? Men are likely to become more incensed at an attack upon one who is weak than one who is strong and may even be tempted to forgive the first attack on the strong because the immediacy of injury is less apparent. On the other hand, condoning continued attacks on the strong is likely to lead to eventual material injury even to the strong.

The contention has been made during this investigation that the principle of de minimis should be applied in this case because the competitive market area consumes only about 5 percent of all re-bars sold in the United States and as a consequence thereof there could be no injury or likelihood of injury if virtually all the imports at less than fair value are sold in such a limited market area. Such a bare contention is as untenable as the parallel argument that the loss of a hand, which weighs less than one percent of the weight of a man's body, does not constitute material injury to that man. Every case must be decided on the basis of its own peculiar circumstances.

This determination and statement of reasons are published pursuant to 201(c) of the Antidumping Act, 1921, as amended.

By the Commission.

[SEAL] DONN N. BENT,
Secretary.

[F.R. Doc. 64-2959; Filed, Mar. 26, 1964; 8:47 a.m.]

INTERSTATE COMMERCE COMMISSION

[Notice No. 958]

MOTOR CARRIER TRANSFER PROCEEDINGS

MARCH 24, 1964.

Synopses of orders entered pursuant to section 212(b) of the Interstate Commerce Act, and rules and regulations prescribed thereunder (49 CFR Part 179), appear below:

As provided in the Commission's special rules of practice any interested person may file a petition seeking reconsideration of the following numbered proceedings within 20 days from the date of publication of this notice. Pursuant to section 17(8) of the Interstate Commerce Act, the filing of such a petition will postpone the effective date of the order in that proceeding pending its disposition. The matters relied upon by petitioners must be specified in their petitions with particularity.

No. MC–FC 66701. By order of March 23, 1964, The Transfer Board approved the transfer to Laber Russo Trucking Company, Inc., Johnston, R.I., of the operating rights issued by the Commission November 8, 1954, to Elsie Russo, doing business as Laber Russo Trucking, Johnston, R.I., authorizing the transportation, over irregular routes, of ice and liquid petroleum products, between Fall River and Blackstone, Mass., on the one hand, and on the other, Warwick, R.I., and points in Providence County, R.I., Fred Brosco, Brosco & Brosco, 144 Westminster Street, Providence, R.I., Attorney for applicants.

[SEAL] HAROLD D. McCOY, *Secretary.*

[F.R. Doc. 64–2979; Filed, Mar. 26, 1964; 8:49 a.m.]

[Notice No. 958–A]

MOTOR CARRIER TRANSFER PROCEEDINGS

MARCH 24, 1964.

Synopses of orders entered pursuant to section 212(b) of the Interstate Commerce Act, and rules and regulations prescribed thereunder (49 CFR Part 179), appear below:

As provided in the Commission's general rules of practice any interested person may file a petition seeking reconsideration of the following numbered proceedings within 30 days from the date of service of the order. Pursuant to section 17(8) of the Interstate Commerce Act, the filing of such a petition will postpone the effective date of the order in that proceeding pending its disposition. The matters relied upon by petitioners must be specified in their petitions with particularity.

No. MC–FC 66196. By order of March 19, 1964, Division 3, Acting as an Appellate Division, approved the transfer to Roger R. Sitterly, Greenfield, Mass., of the operating rights issued by the Commission January 5, 1954, under Certificate No. MC 42761, to John W. Melbourne, doing business as J. W. Melbourne Moving and Storage, Springfield, Mass., authorizing the transportation, over irregular routes, of household goods, between Springfield, Mass., and points within 15 miles of Springfield, on the one hand, and, on the other, points in New Hampshire, Maine, Vermont, Rhode Island, Connecticut, New York, New Jersey, Pennsylvania, Maryland, Virginia, and the District of Columbia; and boilers, radiators, and boiler and radiator parts, between Springfield, Mass., on the one hand, and, on the other, points in Connecticut.

William L. Mobley 1694 Main St., Springfield, Mass., 01103, Registered Practitioner for Applicants.

[SEAL] HAROLD D. McCOY, *Secretary.*

[F.R. Doc. 64–2980; Filed, Mar. 26, 1964; 8:49 a.m.]

[Rev. S.O. No. 562; Taylor's I.C.C. Order No. 136; Amdt. No. 14]

RUTLAND RAILROAD CORP.

Rerouting of Traffic

Upon further consideration of Taylor's I.C.C. Order No. 136 (Rutland Railroad Corporation) and good cause appearing therefor:

It is ordered, That Taylor's I.C.C. Order No. 136 be, and it is hereby, amended by substituting the following paragraph (g) for paragraph (g) thereof:

(g) *Expiration date.* This order shall expire at 11:59 p.m., June 30, 1964, unless otherwise modified, changed, suspended or annulled.

It is further ordered, That this amendment shall become effective at 11:59 p.m., March 31, 1964, and that this order shall be served upon the Association of American Railroads, Car Service Division, as agent of all railroads subscribing to the car service and per diem agreement under the terms of that agreement, and by filing it with the Director, Office of the Federal Register.

Issued at Washington, D.C., March 23, 1964.

INTERSTATE COMMERCE COMMISSION,
[SEAL] CHARLES W. TAYLOR, *Agent.*

[F.R. Doc. 64–2981; Filed, Mar. 26, 1964; 8:50 a.m.]

CUMULATIVE CODIFICATION GUIDE—MARCH

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(As of January 1, 1964)

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Order from Superintendent of Documents, Government Printing Office, Washington, D.C., 20402

FEDERAL REGISTER

Telephone WOrth 3-3261

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PART II

FEDERAL REGISTER

VOLUME 29 NUMBER 61

Washington, Friday, March 27, 1964

Department of Labor

Bureau of Labor Standards

Safety and Health Regulations for Ship Repairing

Title 29—LABOR

Chapter XIII—Bureau of Labor Standards, Department of Labor

PART 1501—SAFETY AND HEALTH REGULATIONS FOR SHIP REPAIRING

On August 23, 1963, a proposal to amend the safety and health regulations for ship repairing under section 41 of the Longshoremen's and Harbor Workers' Compensation Act (33 U.S.C. 941) was published in the FEDERAL REGISTER (28 F.R. 9291). Interested persons were provided opportunities to submit data, views, and argument both orally and in writing in regard to the proposals. After consideration of all relevant matter presented, I have decided to and do hereby revise 29 CFR Part 1501 to read as set forth below.

The revised regulations shall become effective on April 26, 1964. Moreover, all variations (26 F.R. 9326, 10643 and 11256) granted in accordance with the previous regulations are terminated on April 26, 1964, because the activities permitted by such variations are authorized by the new regulations.

Signed at Washington, D.C., this 20th day of March 1964.

W. WILLARD WIRTZ,
Secretary.

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AUTHORITY: The provisions of this Part 1501, issued under sec. 41, 44 Stat. 1444; sec. 1, 72 Stat. 835; 33 U.S.C. 941.

Subpart A—General Provisions

§ 1501.1 Purpose, scope and responsibility.

(a) The Longshoremen's and Harbor Workers' Compensation Act (44 Stat. 1424; 33 U.S.C. 901 et seq.) provides compensation for injuries suffered by employees when they are working for private employers within the Federal maritime jurisdiction on the navigable waters of the United States, including drydocks. Public Law 85–742, 72 Stat. 835, approved August 23, 1958, which amends section 41 of the Longshoremen's and Harbor Workers' Compensation Act, as amended (44 Stat. 1444; 33 U.S.C. 941) requires, among other things, that every employer of the aforementioned employees "shall install, furnish, maintain, and use such devices and safeguards with particular reference to equipment used by and working conditions established by such employers as the Secretary may determine by regulation or order to be reasonably necessary to protect the life, health, and safety of such employees, and to render safe such employment and places of employment, and to prevent injury to his employees." It is the purpose of the regulations of this part to carry out the intent of Public Law 85–742.

(b) Pursuant to Public Law 85–742 the regulations of this part do not make determinations with respect to matters under the control of the United States Coast Guard within the scope of Title 52 of the Revised Statutes and Acts supplementary or amendatory thereto (46 U.S.C. 1–1388, passim), including, but not restricted to, the master, ship's officers, crew members, design, construction, and maintenance of the vessel, its gear and equipment; to matters within the regulatory authority of the United States Coast Guard to safeguard vessels, harbors, ports, and waterfront facilities under the provisions of the Espionage Act of June 15, 1917, as amended (40 Stat. 220; 50 U.S.C. 191 et seq.; 22 U.S.C. 401 et seq.); including the provisions of Executive Order 10173, as amended by Executive Orders 10277 and 10352 (3 CFR 1949–1953 Comp., pp. 356, 778, and 873); or to matters within the regulatory authority of the United States Coast Guard with respect to lights, warning devices, safety equipment and other matters relating to the promotion of safety of lives and property under section 4(e) of the Outer Continental Shelf Lands Act of August 7, 1953 (67 Stat. 462; 43 U.S.C. 1333).

(c) The responsibility for compliance with the regulations of this part is placed upon "employers" as defined in § 1501.2(c).

(d) It is not the intent of the regulations of this part to place additional responsibilities or duties on owners, operators, agents or masters of vessels unless such persons are acting as employers, nor is it the intent of these regulations to relieve such owners, operators, agents or masters of vessels from responsibilities or duties now placed upon them by law, regulation or custom.

(e) The responsibilities placed upon the competent person herein shall be deemed to be the responsibilities of the employer.

§ 1501.2 Definitions.

(a) The term "shall" indicates provisions which are mandatory.

(b) The term "Secretary" means the Secretary of Labor.

(c) The term "employer" means an employer any of whose employees are employed, in whole or in part, in ship repair or related employments as defined in this section on the navigable waters of the United States, including dry docks, graving docks and marine railways.

(d) The term "employee" means any ship repairman or other person engaged in ship repair or related employments on the navigable waters of the United States, including dry docks, graving docks and marine railways, other than the master, ship's officers, crew of the vessel, or any person engaged by the

master to repair any vessel under 18 net tons.

(e) The term "gangway" means any ramp-like or stair-like means of access provided to enable personnel to board or leave a vessel including accommodation ladders, gangplanks and brows.

(f) The term "vessel" includes every description of watercraft or other artificial contrivance used, or capable of being used, as a means of transportation on water, including special purpose floating structures not primarily designed for or used as a means of transportation on water.

(g) For purposes of § 1501.44, the term "barge" means an unpowered, flat bottom, shallow draft vessel including scows, carfloats and lighters. For purposes of this section, the term does not include ship shaped or deep draft barges.

(h) For purposes of § 1501.44, the term "river tow boat" means a shallow draft, low free board, self-propelled vessel designed to tow river barges by pushing ahead. For purposes of this section, the term does not include other towing vessels.

(i) The term "ship repair" means any repair of a vessel including, but not restricted to, alterations, conversions, installations, cleaning, painting, and maintenance work.

(j) The term "related employments" means any employments performed as an incident to or in conjunction with ship repair work, including, but not restricted to, inspection, testing and employment as a watchman.

(k) The term "hazardous substance" means a substance which by reason of being explosive, flammable, poisonous, corrosive, oxidizing, irritant, or otherwise harmful is likely to cause injury.

(l) The term "competent person" for purposes of this part means a person who is capable of recognizing and evaluating employee exposure to hazardous substances or to other unsafe conditions and is capable of specifying the necessary protection and precautions to be taken to ensure the safety of employees as required by the particular regulation under the condition to which it applies. For the purposes of Subparts B, C, and D, of this part except for §§ 1501.11(a)(1)(iv) and 1501.24(b)(8), to which the above definition applies, the competent person must also meet the additional requirements of § 1501.10.

(m) The term "confined space" means a compartment of small size and limited access such as a double bottom tank, cofferdam, or other space which by its small size and confined nature can readily create or aggravate a hazardous exposure.

(n) The term "enclosed space" means any space, other than a confined space, which is enclosed by bulkheads and overhead. It includes cargo holds, tanks, quarters, and machinery and boiler spaces.

(o) The term "hot-work" means riveting, welding, burning or other fire or spark producing operations.

(p) The term "cold-work" means any work which does not involve riveting, welding, burning or other fire or spark producing operations.

(q) The term "portable unfired pressure vessel" means any pressure container or vessel used aboard ship, other than the ship's equipment, containing liquids or gases under pressure, excepting pressure vessels built to ICC regulations under 49 CFR Part 78, Subparts C and H.

(r) The term "powder actuated fastening tool" means a tool or machine which drives a stud, pin, or fastener by means of an explosive charge.

§ 1501.3 Penalty.

(a) As provided in Public Law 85–742, any employer who, willfully, violates or fails or refuses to comply with the provisions of the regulations of this part and any employer or other person who willfully interferes with, hinders, or delays the Secretary or his authorized representative in carrying out his duties under subsection (c) of section 41 of the Act by refusing to admit the Secretary or his authorized representative to any place, or to permit the inspection or examination of any employment or place of employment, or who willfully hinders or delays the Secretary or his authorized representative in the performance of his duties in the enforcement of the regulations of this part, shall be guilty of an offense, and, upon conviction thereof, shall be punished for each offense by a fine of not less than $100 nor more than $3,000; and in any case where such employer is a corporation, the officer who willfully permits any such violation to occur shall be guilty of an offense, and, upon conviction thereof, shall be punished also for each offense by a fine of not less than $100 nor more than $3,000.

(b) The liability under this provision of Public Law 85–742 shall not affect any other liability of the employer under the Longshoremen's and Harbor Workers' Compensation Act.

§ 1501.4 Variation from the regulations of this part.

As provided in Public Law 85–742, in case of practical difficulties or unnecessary hardships, the Secretary in his discretion may grant variations from the regulations of this part or particular provisions thereof, and permit the use of other or different devices if he finds that the purpose of the regulation will be observed by the variation and the safety of employees will be equally secured thereby. Any person affected by such regulations or his agent, may request the Secretary to grant such variation, stating in writing the grounds on which his request is based. Any authorization by the Secretary of a variation shall be in writing, shall describe the conditions under which the variation shall be permitted, and shall be published as provided in section 3 of the Administrative Procedure Act (ch. 324, 60 Stat. 237), as amended. A properly indexed record of all variations shall be kept in the Office of the Secretary and be open to public inspection.

§ 1501.5 Reference specifications, standards, and codes.

(a) Specifications, standards, and codes of agencies of the United States Government, to the extent specified in the text, form a part of the regulations of this part. In addition, under the authority vested in the Secretary under the Act, the specifications, standards, and codes of organizations which are not agencies of the United States Government, in effect on the date of the promulgation of the regulations of this part as listed below, to the extent specified in the text, form a part of the regulations of this part:

National Fire Protection Association, 60 Batterymarch Street, Boston 10, Mass., Subpart B, § 1501.13(a).

Underwriters' Laboratories, Inc., 207 East Ohio Street, Chicago, Ill., Subpart B, § 1501.12(b) and Subpart C, § 1501.24(b)(7).

American Standard Safety Code for Portable Wood Ladders, A14.1–1959, American Standards Association, Inc., 10 East 40th Street, New York 16, N.Y., Subpart E, § 1501.42(a)(6).

American Standard Safety Code for Portable Metal Ladders, A14.2–1956, American Standards Association, Inc., 10 East 40th Street, New York 16, N.Y., Subpart E, § 1501.42(a)(4).

American Standard Safety Code for Head, Eye and Respiratory Protection, Z2.1–1959, American Standards Association, Inc., 10 East 40th Street, New York 16, N.Y., Subpart I, §§ 1501.81(a)(1), 1501.83(b).

American Society of Mechanical Engineers Boiler and Pressure Vessel Code, Section VIII, Rules for Construction of Unfired Pressure Vessels, 1963, American Society of Mechanical Engineers, 29 West 39th Street, New York 18, N.Y., Subpart K, § 1501.101(a).

§ 1501.6 Notification of accidents resulting in fatalities or serious injuries.

Within 48 hours after the occurrence of an accident causing the death of an employee or resulting in an employee's admission to a hospital as a bed patient, the employer shall file a copy of Bureau of Employees' Compensation Form BEC—202 (approved by Budget Bureau No. 44–R 887.3) with the Field Safety Consultant of the Bureau of Labor Standards serving the area where the accident occurred (in addition to such filing as is required by 20 CFR 31.3) unless prior thereto and as soon after the accident as feasible the employer has given oral or written notice of the accident to the person in charge of such office in sufficient detail to permit the accident to be identified readily. (44 Stat. 1444; 33 U.S.C. 930)

§ 1501.7 Amendment of the regulations of this part.

The Secretary may at any time, upon his own motion or upon written petition of any interested person setting forth reasonable grounds therefor, and after opportunity has been given to interested persons to present their views, amend or revoke any of the provisions of the regulations of this part.

Subpart B—Explosive and Dangerous Atmospheres

§ 1501.10 Competent person.

(a) *Designation.* (1) For the purposes of Subparts B, C, and D of this part, except for §§ 1501.11(a)(1)(iv) and 1501.24(b)(8), one or more competent

persons shall be designated by the employer in accordance with the applicable requirements of this section unless the requirements of Subparts B, C, and D of this part are always carried out by an N.F.P.A. Certified Marine Chemist.

(2) The employer shall indicate on U.S. Department of Labor Form MAR–8, "Designation of Competent Person" either those employees designated as competent persons or that the prescribed functions of such persons are always carried out by an N.F.P.A. Certified Marine Chemist in addition to his professional duties. When additions or changes are made in the personnel so designated, a new Form MAR–8 shall be executed. A copy of this executed form shall be forwarded to the nearest office of the Bureau of Labor Standards.

(b) *Criteria.* The following criteria shall guide the employer in designating employees as competent persons:

(1) Ability to understand the meaning of designations on certificates and of any qualifications relating thereto and to carry out any instructions, either written or oral, left by the N.F.P.A. Certified Marine Chemist or person authorized by the U.S. Coast Guard referred to in § 1501.13 or issued by the person in charge of the fumigating referred to in § 1501.11(a)(1)(iv).

(2) Ability to use and interpret the readings of an oxygen indicator and a combustible gas indicator. The ability to use and interpret the readings of a carbon monoxide indicator and a carbon dioxide indicator, if the operations involve such hazardous gases.

(3) Familiarity with and understanding of Subparts B, C, and D of this part.

(4) Familiarity with the structure and knowledge of the location and designation of spaces of the types of vessels on which repair work is done.

(5) Capability to perform the tests and inspections required by Subparts B, C and D of this part and to write the required logs.

(c) *Logging of inspections and tests.* (1) When tests and inspections required to be performed by a competent person by any provisions of Subparts B, C, and D of this part, except those referred to in §§ 1501.11(a)(1)(iv) and 1501.24(b)(8), are made, a record of the locations, operations performed and date, time, and results of the tests and any instructions resulting therefrom shall be recorded on U.S. Department of Labor Form MAR–9, "Log of Inspections and Tests by Competent Person." A separate form shall be used for each vessel on which tests and inspections are made.

(2) This record shall be available for inspection in the immediate vicinity of the affected operations while they are in progress. This record or copy thereof shall be kept on file for a period of at least three months from the date of the completion of the job.

(3) A copy of any certificate issued in accordance with § 1501.13 and of any instructions issued by the N.F.P.A. Certified Marine Chemist shall be kept on file with the log for a period of at least three months from the date of the completion of the job. The certificate and instructions issued by the person doing the fumigating referred to in § 1501.11(a)(1)(iv) shall also be kept on file for the same period of time.

(d) *Application.* The provisions of this section are intended to apply in their entirety to employers engaged in general ship repair work. They do not apply to employers whose work involves situations to which Subparts B, C and D of this part are not applicable, such as general cleaning work in which flammable and toxic atmospheres are not involved. Any employer whose work involves only certain portions of Subparts B, C and D of this part, such as work on small craft in boat yards where only combustible gas indicator tests are necessary for fuel tank leaks or when using flammable paints below decks, may designate persons as competent on the basis of the applicable portion of the criteria set forth in paragraph (b) of this section.

§ 1501.11 Precautions before entering.

(a) *Gassy atmospheres.* (1) Before employees are initially permitted to enter any of the ship's spaces designated in subdivisions (i) to (iv) of this subparagraph, either the atmosphere shall be considered to be immediately dangerous to life and the employees shall be protected with self-contained breathing apparatus or hose masks with blowers in accordance with § 1501.82 (a) and (b)(2)(i) or (ii), or the atmosphere shall be tested by a competent person to determine whether or not a flammable atmosphere is present.

(i) Cargo spaces or other spaces containing or having last contained combustible or flammable liquids or gases in bulk.

(ii) Cargo spaces or other spaces containing or having last contained bulk liquid or gas cargoes of a poisonous, corrosive, or irritant nature.

(iii) Spaces in tank vessels immediately above or adjacent to those described in subdivisions (i) and (ii) of this subparagraph.

(iv) Spaces that have been fumigated.

(2) If the atmosphere is found to contain flammable or explosive vapors in concentrations at or above ten (10) percent of their lower explosive limit, either the space shall be ventilated sufficiently to bring the concentration below ten (10) percent of the lower explosive limit and, when necessary, the provisions of subparagraph (4) of this paragraph shall be applied, or employees shall be protected by self-contained breathing apparatus or hose masks with blowers in accordance with § 1501.82 (a) and (b)(2)(i) or (ii).

(3) Only emergency work shall be performed in spaces where conditions exist requiring self-contained breathing apparatus or hose masks as prescribed by subparagraph (2) of this paragraph and paragraph (b)(1) of this section.

(4) If the atmosphere is found to contain a concentration of hazardous contaminants below ten (10) percent of the lower explosive limit and not immediately dangerous to life, but above the threshold limit values for toxic substances, employees shall be protected in accordance with § 1501.82 (a) and (c).

(5) Where tests indicate that no flammable vapors are present the competent person shall test for the presence of sufficient oxygen as specified by paragraph (b)(2) of this section.

(b) *Oxygen deficient atmospheres.* (1) Before employees are permitted to enter sealed compartments, spaces which have been in a state of preservation, or any non-ventilated compartments which have been freshly painted, either the atmosphere shall be considered to be immediately dangerous to life and the employees shall be protected in accordance with the provisions of § 1501.82(a) and (b)(2)(i) or (ii), or the atmosphere shall be tested by a competent person with an oxygen indicator or other suitable device to ensure that it contains sufficient oxygen to sustain life.

(2) For purposes of this paragraph, an atmosphere containing 16.5 per cent oxygen or capable of supporting a flame shall be considered to contain sufficient oxygen to sustain life.

(3) Mechanical ventilation which will provide at least one complete change of uncontaminated air may be substituted in lieu of either of the requirements of subparagraph (1) of this paragraph.

§ 1501.12 Cleaning and other cold work.

(a) Employees shall be permitted to perform manual cleaning to remove residue materials, scale and debris or to perform other cold work in spaces described in § 1501.11(a)(1)(i) through (iv) before they have been certified as gas free only under the following conditions:

(1) Liquid residues of flammable and toxic materials shall be removed from the spaces as thoroughly as practicable before employees start actual cleaning operations in these spaces. Drippings and spills of these materials on deck or elsewhere alongside the vessel shall be cleaned up as the work progresses. Special care shall be taken to prevent the spilling or the draining of these materials into the water surrounding the vessel.

(2) Continuous natural or mechanical ventilation shall be provided to keep the concentration of flammable vapors below ten (10) percent of the lower explosive limit in all parts of the space, provided that if, because of the high volatility of the residues, a uniform concentration of less than ten (10) percent of the lower explosive limit cannot be achieved, sufficient exhaust ventilation shall be provided to reduce the concentration to or below that level in the major portions of the compartment.

(3) Tests shall be made by a competent person prior to commencement of cold work and with sufficient frequency thereafter, in accordance with temperature, volatility of the residues and other existing conditions in and about the spaces, to ensure that the concentration stated in subparagraph (2) of this paragraph is not exceeded.

(4) Cold work only shall be permitted.

(5) Tests shall be made by a competent person to ensure that the exhaust vapors from these spaces are not accumulating in other areas within or around the vessel, marine railway, dry-dock, graving dock, or under the pier where sources of ignition may be present. Should such accumulations be found, any sources of ignition within the affected area shall be removed or extinguished.

(b) In spaces described in paragraph (a) of § 1501.13 only approved explosion-proof, self-contained battery-fed portable lamps shall be used. Battery-fed portable lamps bearing the approval of the Underwriters' Laboratories for use in Class I, Group D atmospheres, or approved as permissible by the U.S. Bureau of Mines, and such lamps listed by the U.S. Coast Guard as approved for such use are deemed to meet the requirements of this paragraph.

(c) Signs shall be posted on the open deck adjacent to the access to spaces described in paragraph (a) of § 1501.13 prohibiting smoking and the use of open flames.

(d) Jet type air moving devices shall be electrically bonded to the vessel's structure.

§ 1501.13 Certification before hot work is begun.

(a) Employees shall not be permitted to engage in hot work or the use of powder actuated fastening tools in or on the following spaces, boundaries or pipe lines until a certificate setting forth that the hot work can be done in safety is issued. Such certificate shall be acceptable only if issued by a Marine Chemist certificated by the National Fire Protection Association, except that a certificate issued by another person authorized by the U.S. Coast Guard pursuant to the provisions of 46 CFR 35.01–1(c)(1) for tank vessels, 46 CFR 71.60–1(c)(1) for passenger vessels, and 46 CFR 91.50–1(c)(1) for cargo and miscellaneous vessels is acceptable for a particular inspection:

(1) *On tank vessels.* (i) Within or on the boundaries of cargo tanks which have been used to carry combustible or flammable liquids and gases in bulk, or within spaces adjacent to such cargo tanks.

(ii) Within or on the boundaries of fuel tanks.

(iii) On pipe lines, heating coils, pumps, fittings, or other appurtenances connected to such cargo or fuel tanks.

(2) *On dry cargo, miscellaneous and passenger vessels.* (i) Within or on the boundaries of cargo tanks which have been used to carry combustible or flammable liquids and gases in bulk.

(ii) Within spaces adjacent to cargo tanks which have been used to carry flammable gases, or liquids with a flash point below 150° F., except where the distance between such cargo tanks and the work to be performed is not less than twenty-five (25) feet.

(iii) Within or on the boundaries of fuel tanks.

(iv) On pipe lines, heating coils, pumps, fittings, or other appurtenances connected to such cargo or fuel tanks.

(b) In dry cargo holds for which a gas free certificate is not required by paragraph (a)(2)(ii) of this section, hot work may be performed only after a competent person has carefully examined the hold and found it to be free of flammable liquids, gases and vapors. If flammable liquids, gases or vapors are found, hot work shall not be performed within the space until the flammable liquids, gases or vapors have been removed and a test indicates that the space is safe for fire.

(c) Before hot work is performed in engine room and boiler room spaces of any vessel for which a gas free certificate is not required by the provisions of paragraph (a) of this section or in fuel tank and engine compartments of boats, the bilges shall be inspected and tested by a competent person to ensure that they are free of flammable liquids, gases and vapors. If flammable liquids, gases or vapors are found, hot work shall not be performed within the space until the flammable liquids, gases or vapors have been removed and a test indicates that the space is safe for fire.

§ 1501.14 Maintaining gas free conditions.

The following rules shall apply in maintaining gas free conditions:

(a) Pipe lines which may convey hazardous substances into the spaces certified "Safe For Men—Safe For Fire" shall be disconnected or blanked off, or other positive means shall be used to prevent discharge of hazardous substances from entering the space. Manholes and other closures which were secured when tests were made shall remain secured. If such manholes or other closures are opened or any manipulation of valves takes place which tends to alter existing conditions, work in the affected spaces or areas shall be stopped and not resumed until such time as the area has been retested and again certified "Safe For Men—Safe For Fire" in accordance with the requirements of § 1501.13(a).

(b) Before hot work is commenced on the weather deck over spaces which, under these regulations, are not required to be gas freed or inerted, all valves, closures and vents, except those which are vented up masts, connecting with non-gas free tanks or compartments below, shall be closed. Valves, closures and vents shall not be opened until hot work is completed unless the hot work is stopped and the work location posted as unsafe for fire. The latter notice shall not be removed nor hot work resumed until the area is again made safe.

(c) The employer shall inform masters and chief engineers of vessels of the provisions of this section and shall confirm that they are aware of their responsibilities for seeing that their crews understand and obey all warning signs, tags, and the limitations stated on the gas free certificates.

(d) When conditions in a tank are such that there is a possibility of hazardous vapor being released from residues or other sources after a gas-free certificate has been issued, a competent person shall make tests to ensure that the gas-free condition is maintained irrespective of whether hot work is being performed in the tank. When the competent person finds that atmospheric conditions have altered, work shall be stopped and a new gas-free certificate in accordance with the requirements of § 1501.13(a) shall be obtained before work is resumed.

(e) Before hot work is begun on any metal covered with preservative coatings the requirements of § 1501.33 shall be met.

§ 1501.15 Warning signs.

(a) Except as provided in paragraph (c) of this section, all tanks, compartments, or spaces which have been certified "Safe For Men—Not Safe for Fire," or "Not Safe For Men—Not Safe For Fire" shall be plainly and conspicuously marked with paint or signs indicating that no hot work shall be performed on such tanks, compartments, or spaces or in the vicinity thereof.

(b) Except as provided in paragraph (c) of this section, all tanks, compartments or spaces which have been inerted with gas or certified "Not Safe For Men—Safe For Fire" shall be plainly and conspicuously marked with paint or signs indicating that the tank, compartment or space contains a gas which will not support life or is hazardous to employees.

(c) The warning marks or signs required by paragraphs (a) and (b) of this section need not be posted on individual tanks, compartments or spaces if the entire vessel has been certified "Safe For Men—Not Safe For Fire," "Not Safe For Men— Not Safe For Fire," or if the entire vessel has been inerted or certified "Not Safe For Men—Safe For Fire," and if a sign to this effect is conspicuously posted at the gangway and at all other means of access to the vessel.

Subpart C—Surface Preparation and Preservation

§ 1501.21 Toxic cleaning solvents.

(a) Before any solvents are used, the employer shall ascertain, whenever possible, the toxic properties of such solvents and shall employ at least one of the following measures to safeguard the health of employees exposed to toxic solvents.

(1) The cleaning operation shall be completely enclosed to prevent the escape of vapor into the working space.

(2) Either natural ventilation or mechanical exhaust ventilation shall be used to remove the vapor at the source and to dilute the concentration of vapors in the working space to the point at which an unsafe concentration does not exist.

(3) Employees shall be protected by suitable respiratory protective equipment in accordance with the requirements of § 1501.82 (a) and (c).

(b) The Table of Threshold Limit Values set forth in Appendix I shall be used as a guide in determining safe concentrations of vapors.

(c) When the toxic properties of a solvent cannot be ascertained or the concentration of its vapors cannot be determined, employees shall be protected by respiratory protective equipment in accordance with the requirements of § 1501.82 (a) and (c).

(d) The employer shall advise the employees who are exposed to solvents of the hazardous nature of the solvents and of the measures taken to safeguard their health.,

(e) When flammable solvents are used, precautions shall be taken in accordance with the requirements of § 1501.25.

§ 1501.22 Chemical paint and preservative removers.

(a) Employees shall be protected against skin contact during the handling and application of chemical paint and preservative removers and shall be protected against eye injury by goggles or face shields in accordance with the requirements of § 1501.81 (a) and (b).

(b) When using flammable paint and preservative removers precautions shall be taken in accordance with the requirements of § 1501.25.

(c) When using chemical paint and preservative removers which contain volatile and toxic solvents, such as benzol, acetone and amyl acetate, the provisions of § 1501.21 shall be applicable.

(d) When using paint and rust removers containing strong acids or alkalies, employees shall be protected by suitable face shields to prevent chemical burns on the face and neck.

(e) When steam guns are used, all employees working within range of the blast shall be protected by suitable face shields. Metal parts of the steam gun itself shall be insulated to protect the operator against heat burns.

§ 1501.23 Mechanical paint removers.

(a) *Power tools.* (1) Employees engaged in the removal of paints, preservatives, rusts or other coatings by means of power tools shall be protected against eye injury by goggles or face shields in accordance with the requirements of § 1501.81(a).

(2) All portable rotating tools used for the removal of paints, preservatives, rusts or other coatings shall be adequately guarded to protect both the operator and nearby workers from flying missiles.

(3) Portable electric tools shall be grounded in accordance with the requirements of § 1501.72 (a) and (b).

(4) In a confined space, mechanical exhaust ventilation sufficient to keep the dust concentration to a minimum shall be used, or employees shall be protected by respiratory protective equipment in accordance with the requirements of § 1501.82(a) and (d).

(b) *Flame removal.* (1) Hardened preservative coatings shall not be removed by flame in enclosed spaces unless the employees exposed to fumes are protected by air line respirators in accordance with the requirements of § 1501.82 (a). Employees performing such an operation in the open air, and those exposed to the resulting fumes, shall be protected by a fume filter type respirator in accordance with requirements of paragraphs (a) and (d)(2)(iv) of § 1501.82.

(2) Flame or heat shall not be used to remove soft and greasy preservative coatings.

(c) *Abrasive blasting*—(1) *Equipment.* Hoses and fittings used for abrasive blasting shall meet the following requirements:

(i) *Hoses.* Hose of a type to prevent shocks from static electricity shall be used.

(ii) *Hose couplings.* Hose lengths shall be joined by metal couplings secured to the outside of the hose to avoid erosion and weakening of the couplings.

(iii) *Nozzles.* Nozzles shall be attached to the hose by fittings that will prevent the nozzle from unintentionally becoming disengaged. Nozzle attachments shall be of metal and shall fit onto the hose externally.

(2) *Replacement.* Hoses and all fittings used for abrasive blasting shall be inspected frequently to insure timely replacement before an unsafe amount of wear has occurred.

(3) *Personal protective equipment.* (i) Abrasive blasters working in enclosed spaces shall be protected by hoods and air fed respirators or by air helmets of a positive pressure type in accordance with the requirements of § 1501.82(a).

(ii) Abrasive blasters working in the open shall be protected as indicated in subdivision (i) of this subparagraph except that when synthetic abrasives containing less than one percent free silica are used filter type respirators approved by the Bureau of Mines for exposure to lead dusts may be used in accordance with § 1501.82 (a) and (d).

(iii) Employees, other than blasters, including machine tenders and abrasive recovery men, working in areas where unsafe concentrations of abrasive materials and dusts are present shall be protected by eye and respiratory protective equipment in accordance with the requirements of §§ 1501.81 (a) and (b) and 1501.82 (a) and (d).

(iv) The blaster shall be protected against injury from exposure to the blast by appropriate protective clothing, including gloves.

(v) Since surges from drops in pressure in the hose line can be of sufficient proportions to throw the blaster off the staging, the blaster shall be protected by a safety belt when blasting is being done from elevations where adequate protection against falling cannot be provided by railings.

§ 1501.24 Painting.

(a) *Paints mixed with toxic vehicles or solvents.* (1) When paints mixed with toxic vehicles or solvents are sprayed, the following conditions shall apply:

(i) In confined spaces, employees continuously exposed to such spraying shall be protected by air line respirators in accordance with the requirements of § 1501.82(a).

(ii) In tanks or compartments, employees continuously exposed to such spraying shall be protected by air line respirators in accordance with the requirements of § 1501.82(a). Where mechanical ventilation is provided, employees shall be protected by respirators in accordance with the requirements of § 1501.82 (a) and (e).

(iii) In large and well ventilated areas, employees exposed to such spraying shall be protected by respirators in accordance with the requirements of § 1501.82 (a) and (e).

(2) Where brush application of paints with toxic solvents is done in confined spaces, or other areas where lack of ventilation creates a hazard, employees shall be protected by filter respirators in accordance with the requirements of § 1501.82 (a) and (c).

(3) When flammable paints or vehicles are used, precautions shall be taken in accordance with the requirements of § 1501.25.

(4) Jet type air moving devices shall be electrically bonded to the vessel's structure.

(b) *Paints and tank coatings dissolved in highly volatile, toxic and flammable solvents.* Several organic coatings, adhesives and resins are dissolved in highly toxic, flammable and explosive solvents with flash points below 80° F. Work involving such materials shall be done only when all of the following special precautions have been taken:

(1) Sufficient exhaust ventilation shall be provided to keep the concentration of solvent vapors below ten (10) percent of the lower explosive limit. Frequent tests shall be made by a competent person to ascertain the concentration.

(2) If the ventilation fails or if the concentration of solvent vapors rises above ten (10) percent of the lower explosive limit, painting shall be stopped and the compartment shall be evacuated until the concentration again falls below ten (10) percent of the lower explosive limit. If the concentration does not fall when painting is stopped, additional ventilation to bring the concentration down to ten (10) percent of the lower explosive limit shall be provided.

(3) Ventilation shall be continued after the completion of painting until the space or compartment is gas free. The final determination as to whether the space or compartment is gas free shall be made after the ventilating equipment has been shut off for at least ten minutes.

(4) Exhaust ducts shall discharge clear of working areas and away from sources of possible ignition. Periodic tests shall be made to ensure that the exhausted vapors are not accumulating in other areas within or around the vessel or dry dock.

(5) All motors and control equipment shall be of the explosion proof type with non-ferrous fan blades. Air ducts shall also be of non-ferrous materials. All motors and associated control equipment shall be properly maintained and grounded.

(6) Only non-sparking paint buckets, spray guns and tools shall be used. Metal parts of paint brushes and rollers shall be insulated. Staging shall be erected in a manner which ensures that it is non-sparking.

(7) Only explosion proof lights, approved by the Underwriters' Laboratories for use in Class I, Group D atmospheres, or approved as permissible by the U.S. Bureau of Mines or the U.S. Coast Guard, shall be used.

(8) A competent person shall inspect all power and lighting cables to ensure that the insulation is in excellent condition, free of all cracks and worn spots, that there are no connections within fifty (50) feet of the operation, that lines are not overloaded, and that they are suspended with sufficient slack to prevent undue stress or chafing.

(9) The face, eyes, head, hands and all other exposed parts of the bodies of employees handling such highly volatile paints shall be protected. All footwear

shall be non-sparking, such as rubbers, rubber boots or rubber soled shoes without nails. Coveralls or other outer clothing shall be of cotton. Rubber, rather than plastic gloves shall be used because of the danger of static sparks.

(10) No matches, lighted cigarettes, cigars, or pipes, and no cigarette lighters or ferrous articles shall be taken into the area where work is being done.

(11) All solvent drums taken into the compartment shall be placed on nonferrous surfaces and shall be grounded to the vessel. Metallic contact shall be maintained between containers and drums when materials are being transferred from one to another.

(12) Spray guns, paint pots, and metallic parts of connecting tubing shall be electrically bonded, and the bonded assembly shall be grounded to the vessel.

(13) All employees continuously in a compartment in which such painting is being performed, shall be protected by air line respirators in accordance with the requirements of § 1501.82(a). Employees entering such compartments for a limited time shall be protected by filter cartridge type respirators in accordance with the requirements of § 1501.82 (a) and (e).

(14) All employees doing exterior paint spraying with such paints shall be protected by suitable filter cartridge type respirators in accordance with the requirements of § 1501.82 (a) and (e).

§ 1501.25 Flammable liquids.

(a) In all cases when liquid solvents, paint and preservative removers, paints or vehicles, other than those covered by § 1501.24(b), are capable of producing a flammable atmosphere under the conditions of use the following precautions shall be taken:

(1) Smoking, open flames, arcs and spark-producing equipment shall be prohibited in the area.

(2) Ventilation shall be provided in sufficient quantities to keep the concentration of vapors below ten (10) percent of their lower explosive limit. Frequent tests shall be made by a competent person to ascertain the concentration.

(3) Scrapings and rags soaked with these materials shall be kept in a covered metal container.

(4) Only explosion proof lights, approved by the Underwriters' Laboratories for use in Class I, Group D atmospheres, or approved as permissible by the U.S. Bureau of Mines or the U.S. Coast Guard, shall be used.

(5) A competent person shall inspect all power and lighting cables to ensure that the insulation is in excellent condition, free of all cracks and worn spots, that there are no connections within fifty (50) feet of the operation, that lines are not overloaded, and that they are suspended with sufficient slack to prevent undue stress or chafing.

(6) Suitable fire extinguishing equipment shall be immediately available in the work area and shall be maintained in a state of readiness for instant use.

Subpart D—Welding, Cutting and Heating

§ 1501.31 Ventilation and protection in welding, cutting and heating.

(a) *Mechanical ventilation requirements.* (1) For purposes of this section, mechanical ventilation shall meet the following requirements:

(i) Mechanical ventilation shall consist of either general mechanical ventilation systems or local exhaust systems.

(ii) General mechanical ventilation shall be of sufficient capacity and so arranged as to produce the number of air changes necessary to maintain welding fumes and smoke within safe limits.

(iii) Local exhaust ventilation shall consist of freely movable hoods intended to be placed by the welder or burner as close as practicable to the work. This system shall be of sufficient capacity and so arranged as to remove fumes and smoke at the source and keep the concentration of them in the breathing zone within safe limits.

(iv) Contaminated air exhausted from a working space shall be discharged into the open air or otherwise clear of the source of intake air.

(v) All air replacing that withdrawn shall be clean and respirable.

(vi) Oxygen from a cylinder or torch shall not be used for ventilation purposes.

(b) *Welding, cutting and heating in confined spaces.* (1) Except as provided in paragraphs (b)(3) and (c)(2) of this section, either general mechanical or local exhaust ventilation meeting the requirements of paragraph (a) of this section shall be provided whenever welding, cutting or heating is performed in a confined space.

(2) The means of access shall be provided to a confined space and ventilation ducts to this space shall be arranged in accordance with § 1501.46(b) (1) and (2).

(3) When sufficient ventilation cannot be obtained without blocking the means of access, employees in the confined space shall be protected by air line respirators in accordance with the requirements of § 1501.82(a), and an employee on the outside of such a confined space shall be assigned to maintain communication with those working within it and to aid them in an emergency.

(c) *Welding, cutting or heating of metals of toxic significance.* (1) Welding, cutting or heating in any enclosed spaces aboard the vessel involving the metals specified in this subparagraph shall be performed with either general mechanical or local exhaust ventilation meeting the requirements of paragraph (a) of this section.

(i) Zinc-bearing base or filler metals or metals coated with zinc-bearing materials.

(ii) Lead base metals.

(iii) Cadmium-bearing filler materials.

(iv) Chromium-bearing metals or metals coated with chromium-bearing materials.

(2) Welding, cutting or heating in any enclosed spaces aboard the vessel involving the metals specified in this subparagraph shall be performed with local exhaust ventilation in accordance with the requirements of paragraph (a) of this section or employees shall be protected by air line respirators in accordance with the requirements of § 1501.82(a).

(i) Metals containing lead, other than as an impurity, or metals coated with lead-bearing materials.

(ii) Cadmium-bearing or cadmium coated base metals.

(iii) Metals coated with mercury-bearing metals.

(iv) Beryllium-containing base or filler metals. Because of its high toxicity, work involving beryllium shall be done with both local exhaust ventilation and air line respirators.

(3) Employees performing such operations in the open air shall be protected by filter type respirators in accordance with the requirements of paragraphs (a) and (d)(2)(iv) of § 1501.82, except that employees performing such operations on beryllium-containing base or filler metals shall be protected by air line respirators in accordance with the requirements of § 1501.82(a).

(4) Other employees exposed to the same atmosphere as the welders or burners shall be protected in the same manner as the welder or burner.

(d) *Inert-gas metal-arc welding.* (1) Since the inert-gas metal-arc welding process involves the production of ultraviolet radiation of intensities of 5 to 30 times that produced during shielded metal-arc welding, the decomposition of chlorinated solvents by ultraviolet rays, and the liberation of toxic fumes and gases, employees shall not be permitted to engage in, or be exposed to the process until the following special precautions have been taken:

(i) The use of chlorinated solvents shall be kept at least two hundred (200) feet from the exposed arc, and surfaces prepared with chlorinated solvents shall be thoroughly dry before welding is permitted on such surfaces.

(ii) Helpers and other employees in the area not protected from the arc by screening as provided in § 1501.36(e) shall be protected by filter lenses meeting the requirements of § 1501.81 (a) and (c). When two or more welders are exposed to each other's arc, filter lens goggles of a suitable type meeting the requirements of § 1501.81 (a) and (c) shall be worn under welding helmets or hand shields to protect the welder against flashes and radiant energy when either the helmet is lifted or the shield is removed.

(iii) Welders and other employees who are exposed to radiation shall be suitably protected so that the skin is covered completely to prevent burns and other damage by ultraviolet rays. Welding helmets and hand shields shall be free of leaks and openings, and free of highly reflective surfaces.

(iv) When inert-gas metal-arc welding is being performed on stainless steel, the requirements of paragraph (c)(2) of

this section shall be met to protect against dangerous concentrations of nitrogen dioxide.

(e) *General welding, cutting and heating.* (1) Welding, cutting and heating not involving conditions or materials described in paragraphs (b), (c) or (d) of this section may normally be done without mechanical ventilation or respiratory protective equipment, but where, because of unusual physcial or atmospheric conditions, an unsafe accumulation of contaminants exists, suitable mechanical ventilation or respiratory protective equipment shall be provided.

(2) Employees performing any type of welding, cutting or heating shall be protected by suitable eye protective equipment in accordance with the requirements of § 1501.81 (a) and (c).

(f) *Residues and cargos of metallic ores.* (1) Residues and cargos of metallic ores of toxic significance shall be removed from the area or protected from the heat before welding, cutting or heating is begun.

§ 1501.32 Fire prevention.[1]

(a) When practical, objects to be welded, cut or heated shall be moved to a designated safe location or, if the object to be welded, cut or heated cannot be readily moved, all movable fire hazards including residues of combustible bulk cargos in the vicinity shall be taken to a safe place.

(b) If the object to be welded, cut or heated cannot be moved and if all the fire hazards including combustible cargos cannot be removed, positive means shall be taken to confine the heat, sparks, and slag, and to protect the immovable fire hazards from them.

(c) No welding, cutting or heating shall be done where the application of flammable paints or the presence of other flammable compounds or of heavy dust concentrations creates a hazard.

(d) Suitable fire extinguishing equipment shall be immediately available in the work area and shall be maintained in a state of readiness for instant use. In addition, when hot work is being performed aboard a vessel and pressure is not available on the vessel's fire system, an auxiliary supply of water shall be made available where practicable, consistent with avoiding freezing of the lines or hose.

(e) When the welding, cutting or heating operation is such that normal fire prevention precautions are not sufficient, additional personnel shall be assigned to guard against fire while the actual welding, cutting or heating operations are being performed and for a sufficient period of time after completion of the work to ensure that no possibility of fire exists.

(f) When welding, cutting or heating is performed on tank shells, decks, overheads and bulkheads, since direct penetration of sparks or heat transfer may introduce a fire hazard to an adjacent compartment, the same precautions shall be taken on the opposite side as are taken on the side on which the welding is being performed.

(g) In order to eliminate the possibility of fire in enclosed spaces as a result of gas escaping through leaking or improperly closed torch valves, the gas supply to the torch shall be positively shut off at some point outside the enclosed space whenever the torch is not to be used or whenever the torch is left unattended for a substantial period of time, such as during the lunch hour. Overnight and at the change of shifts the torch and hose shall be removed from the enclosed space. Open end fuel gas and oxygen hoses shall be immediately removed from enclosed spaces when they are disconnected from the torch or other gas consuming device.

§ 1501.33 Welding, cutting and heating in way of preservative coatings.

(a) Before welding, cutting or heating is commenced on any surface covered by a preservative coating whose flammability is not known, a test shall be made by a competent person to determine its flammability. Preservative coatings shall be considered to be highly flammable when scrapings burn with extreme rapidity.

(b) Precautions shall be taken to prevent ignition of highly flammable hardened preservative coatings. When coatings are determined to be highly flammable they shall be stripped from the area to be heated to prevent ignition. A 1½-inch or larger fire hose with fog nozzle, which has been uncoiled and placed under pressure, shall be immediately available for instant use in the immediate vicinity, consistent with avoiding freezing of the hose.

(c) *Protection against toxic preservative coatings.* (1) In enclosed spaces all surfaces covered with toxic preservatives shall be stripped of all toxic coatings for a distance of at least 4 inches from the area of heat application or the employees shall be protected by air line respirators meeting the requirements of § 1501.82(a).

(2) In the open air employees shall be protected by a filter type respirator in accordance with requirements of § 1501.82 (a) and (d).

(d) Before welding, cutting or heating is commenced in enclosed spaces on metals covered by soft and greasy preservatives, the following precautions shall be taken:

(1) A competent person shall test the atmosphere in the space to ensure that it does not contain explosive vapors, since there is a possibility that some soft and greasy preservatives may have flash points below temperatures which may be expected to occur naturally. If such vapors are determined to be present, no hot work shall be commenced until such precautions have been taken as will ensure that the welding, cutting or heating can be performed in safety.

(2) The preservative coatings shall be removed for a sufficient distance from the area to be heated to ensure that the temperature of the unstripped metal will not be appreciably raised. Artificial cooling of the metal surrounding the heated area may be used to limit the size of the area required to be cleaned. The prohibition contained in § 1501.23(b)(2) shall apply.

(e) Immediately after welding, cutting or heating is commenced in enclosed spaces on metal covered by soft and greasy preservatives, and at frequent intervals thereafter, a competent person shall make tests to ensure that no flammable vapors are being produced by the coatings. If such vapors are determined to be present, the operation shall be stopped immediately and shall not be resumed until such additional precautions have been taken as are necessary to ensure that the operation can be resumed safely.

§ 1501.34 Welding, cutting and heating of hollow metal containers and structures not covered by § 1501.11.

(a) Drums, containers, or hollow structures which have contained flammable substances shall, before welding, cutting, or heating is undertaken on them, either be filled with water or throughly cleaned of such substances and ventilated and tested.

(b) Before heat is applied to a drum, container, or hollow structure, a vent or opening shall be provided for the release of any built-up pressure during the application of heat.

(c) Before welding, cutting, heating or brazing is begun on structural voids such as skegs, bilge keels, fair waters, masts, booms, support stanchions, pipe stanchions or railings, a competent person shall inspect the object and, if necessary, test it for the presence of flammable liquids or vapors. If flammable liquids or vapors are present, the object shall be made safe.

(d) Objects such as those listed in paragraph (c) of this section shall also be inspected to determine whether water or other non-flammable liquids are present which, when heated, would build up excessive pressure. If such liquids are determined to be present, the object shall be vented, cooled, or otherwise made safe during the application of heat.

(e) Jacketed vessels shall be vented before and during welding, cutting or heating operations in order to release any pressure which may build up during the application of heat.

§ 1501.35 Gas welding and cutting.

(a) *Transporting, moving and storing compressed gas cylinders.* (1) Valve protection caps shall be in place and secure. Oil shall not be used to lubricate protection caps.

(2) When cylinders are hoisted, they shall be secured on a cradle, slingboard or pallet. They shall not be hoisted by means of magnets or choker slings.

(3) Cylinders shall be moved by tilting and rolling them on their bottom edges. They shall not be intentionally dropped, struck, or permitted to strike each other violently.

(4) When cylinders are transported by vehicle, they shall be secured in position.

(5) Valve protection caps shall not be used for lifting cylinders from one vertical position to another. Bars shall not be used under valves or valve protection caps to pry cylinders loose when

[1] 46 CFR 146.02-20 contains Coast Guard regulations pertaining to welding and cutting while explosives and dangerous cargoes are being handled.

frozen. Warm, not boiling, water shall be used to thaw cylinders loose.

(6) Unless cylinders are firmly secured on a special carrier intended for this purpose, regulators shall be removed and valve protection caps put in place before cylinders are moved.

(7) A suitable cylinder truck, chain, or other steadying device shall be used to keep cylinders from being knocked over while in use.

(8) When work is finished, when cylinders are empty or when cylinders are moved at any time, the cylinder valves shall be closed.

(9) Acetylene cylinders shall be kept in an upright position at all times.

(b) *Placing cylinders.* (1) Cylinders shall be kept far enough away from the actual welding or cutting operation so that sparks, hot slag or flame will not reach them. When this is impractical, fire resistant shields shall be provided.

(2) Cylinders shall be placed where they cannot become part of an electrical circuit. Electrodes shall not be struck against a cylinder to strike an arc.

(3) Fuel gas cylinders shall be placed with valve end up whenever they are in use. They shall not be placed in a location where they would be subject to open flame, hot metal, or other sources of artificial heat.

(4) Cylinders containing oxygen or acetylene or other fuel gas shall not be taken into confined spaces.

(c) *Treatment of cylinders.* (1) Cylinders, whether full or empty, shall not be used as rollers or supports.

(2) No person other than the gas supplier shall attempt to mix gases in a cylinder. No one except the owner of the cylinder or person authorized by him shall refill a cylinder. No one shall use a cylinder's contents for purposes other than those intended by the supplier. Only cylinders bearing Interstate Commerce Commission identification and inspection markings shall be used.

(3) No damaged or defective cylinder shall be used.

(d) *Use of fuel gas.* The employer shall thoroughly instruct employees in the safe use of fuel gas, as follows:

(1) Before connecting a regulator to a cylinder valve, the valve shall be opened slightly and closed immediately. (This action is generally termed "cracking" and is intended to clear the valve of dust or dirt that might otherwise enter the regulator.) The person cracking the valve shall stand to one side of the outlet, not in front of it. The valve of a fuel gas cylinder shall not be cracked where the gas would reach welding work, sparks, flame or other possible sources of ignition.

(2) The cylinder valve shall always be opened slowly to prevent damage to the regulator. To permit quick closing, valves on fuel gas cylinders shall not be opened more than 1½ turns. When a special wrench is required, it shall be left in position on the stem of the valve while the cylinder is in use so that the fuel gas flow can be shut off quickly in case of an emergency. In the case of manifolded or coupled cylinders, at least one such wrench shall always be available for immediate use. Nothing shall be placed on top of a fuel gas cylinder, when in use, which may damage the safety device or interfere with the quick closing of the valve.

(3) Fuel gas shall not be used from cylinders through torches or other devices which are equipped with shut-off valves without reducing the pressure through a suitable regulator attached to the cylinder valve or manifold.

(4) Before a regulator is removed from a cylinder valve, the cylinder valve shall always be closed and the gas released from the regulator.

(5) If, when the valve on a fuel gas cylinder is opened, there is found to be a leak around the valve stem, the valve shall be closed and the gland nut tightened. If this action does not stop the leak, the use of the cylinder shall be discontinued, and it shall be properly tagged and removed from the vessel. In the event that fuel gas should leak from the cylinder valve rather than from the valve stem and the gas cannot be shut off, the cylinder shall be properly tagged and removed from the vessel. If a regulator attached to a cylinder valve will effectively stop a leak through the valve seat, the cylinder need not be removed from the vessel.

(6) If a leak should develop at a fuse plug or other safety device, the cylinder shall be removed from the vessel.

(e) *Manifolds.* (1) Manifolds shall bear the name of the substance they contain in letters at least one (1) inch high which shall be either painted on the manifold or on a sign permanently attached to it.

(2) All manifolds shall be placed in safe and accessible locations.

(3) Manifold hose connections shall be such that hose cannot be interchanged between fuel gases and oxygen manifolds. Adaptors shall not be used to permit the interchange of hose. Manifold hose connections shall be kept free of grease and oil.

(f) *Hose.* (1) Fuel gas hose and oxygen hose shall be easily distinguishable from each other. The contrast may be made by different colors or by surface characteristics readily distinguishable by the sense of touch. Oxygen and fuel gas hoses shall not be interchangeable. A single hose having more than one gas passage, a wall failure of which would permit the flow of one gas into the other gas passage, shall not be used.

(2) When parallel sections of oxygen and fuel gas hose are taped together, not more than 4 inches out of 8 inches shall be covered by tape.

(3) All hose carrying acetylene, oxygen, natural or manufactured fuel gas, or any gas or substance which may ignite or enter into combustion or be in any way harmful to employees, shall be inspected at the beginning of each shift. Defective hose shall be removed from service.

(4) Hose which has been subjected to flashback or which shows evidence of severe wear or damage shall be tested to twice the normal pressure to which it is subject, but in no case less than two hundred (200) psi. Defective hose or hose in doubtful condition shall not be used.

(5) Hose couplings shall be of the type that cannot be unlocked or disconnected by means of a straight pull without rotary motion.

(6) Boxes used for the stowage of gas hose shall be ventilated.

(g) *Torch tips.* Clogged torch tip openings shall be cleaned with suitable cleaning wires, drills or other devices designed for such purpose.

(h) *Pressure regulators.* Oxygen and fuel gas pressure regulators including their related gauges shall be in proper working order while in use.

§ 1501.36 Arc welding and cutting.

(a) *Manual electrode holders.* (1) Only manual electrode holders which are specifically designed for arc welding and cutting and are of a capacity capable of safely handling the maximum rated current required by the electrodes shall be used.

(2) Any current carrying parts passing through the portion of the holder which the arc welder or cutter grips in his hand shall be fully insulated against the maximum voltage encountered to ground.

(b) *Welding cables and connectors.* (1) All arc welding and cutting cables shall be of the completely insulated, flexible type, capable of handling the maximum current requirements of the work in progress, taking into account the duty cycle under which the arc welder or cutter is working.

(2) Only cable free from repair or splices for a minimum distance of ten (10) feet from the cable end to which the electrode holder is connected shall be used, except that cables with standard insulated connectors or with splices whose insulating quality is equal to that of the cable are permitted.

(3) When it becomes necessary to connect or splice lengths of cable one to another, substantial insulated connectors of a capacity at least equivalent to that of the cable shall be used. If connections are effected by means of cable lugs, they shall be securely fastened together to give good electrical contact, and the exposed metal parts of the lugs shall be completely insulated.

(4) Cables in poor repair shall not be used. When a cable, other than the cable lead referred to in subparagraph (2) of this paragraph, becomes worn to the extent of exposing bare conductors, the portion thus exposed shall be protected by means of rubber and friction tapes or other equivalent insulation.

(c) *Ground returns and machine grounding.* (1) A ground return cable shall have a safe current carrying capacity equal to or exceeding the specified maximum output capacity of the arc welding or cutting unit which it services. When a single ground return cable services more than one unit, its safe current carrying capacity shall equal or exceed the total specified maximum output capacities of all the units which it services.

(2) Structures or pipe lines, except pipe lines containing gases or flammable liquids or conduits containing electrical circuits, may be used as part of the ground return circuit, provided that the pipe or structure has a current carrying

capacity equal to that required by subparagraph (1) of this paragraph.

(3) When a structure or pipe line is employed as a ground return circuit, it shall be determined that the required electrical contact exists at all joints. The generation of an arc, sparks or heat at any point shall cause rejection of the structure as a ground circuit.

(4) When a structure or pipe line is continuously employed as a ground return circuit, all joints shall be bonded, and periodic inspections shall be conducted to ensure that no condition of electrolysis or fire hazard exists by virtue of such use.

(5) The frames of all arc welding and cutting machines shall be grounded either through a third wire in the cable containing the circuit conductor or through a separate wire which is grounded at the source of the current. Grounding circuits, other than by means of the vessel's structure, shall be checked to ensure that the circuit between the ground and the grounded power conductor has resistance low enough to permit sufficient current to flow to cause the fuse or circuit breaker to interrupt the current.

(6) All ground connections shall be inspected to ensure that they are mechanically strong and electrically adequate for the required current.

(d) *Operating instructions.* Employers shall instruct employees in the safe means of arc welding and cutting as follows:

(1) When electrode holders are to be left unattended, the electrodes shall be removed and the holders shall be so placed or protected that they cannot make electrical contact with employees or conducting objects.

(2) Hot electrode holders shall not be dipped in water, since to do so may expose the arc welder or cutter to electric shock.

(3) When the arc welder or cutter has occasion to leave his work or to stop work for any appreciable length of time, or when the arc welding or cutting machine is to be moved, the power supply switch to the equipment shall be opened.

(4) Any faulty or defective equipment shall be reported to the supervisor.

(e) *Shielding.* Whenever practicable, all arc welding and cutting operations shall be shielded by noncombustible or flame-proof screens which will protect employees and other persons working in the vicinity from the direct rays of the arc.

§ 1501.37 Uses of fissionable material in ship repair.

(a) In ship repair and related activities involving the use of and exposure to sources of ionizing radiation not only on conventionally powered but also on nuclear powered vessels, the applicable provisions of the Atomic Energy Commission's Standards for Protection Against Radiation (10 CFR Part 20), relating to protection against occupational radiation exposure, shall apply.

(b) Any activity which involves the use of radioactive material, whether or not under license from the Atomic Energy Commission, shall be performed by competent persons specially trained in the proper and safe operation of such equipment. In the case of materials used under Commission license, only persons actually licensed, or competent persons under direction and supervision of the licensee, shall perform such work.

Subpart E—Scaffolds, Ladders and Other Working Surfaces

§ 1501.41 Scaffolds or staging.

(a) *General requirements.* (1) All scaffolds and their supports whether of lumber, steel or other material, shall be capable of supporting the load they are designed to carry with a safety factor of not less than four (4).

(2) All lumber used in the construction of scaffolds shall be spruce, fir, long leaf yellow pine, Oregon pine or wood of equal strength. The use of hemlock, short leaf yellow pine, or short fiber lumber is prohibited.

(3) Lumber dimensions as given in this subpart are nominal except where given in fractions of an inch.

(4) All lumber used in the construction of scaffolds shall be sound, straight-grained, free from cross grain, shakes and large, loose or dead knots. It shall also be free from dry rot, large checks, worm holes or other defects which impair its strength or durability.

(5) Scaffolds shall be maintained in a safe and secure condition. Any component of the scaffold which is broken, burned or otherwise defective shall be replaced.

(6) Barrels, boxes, cans, loose bricks or other unstable objects shall not be used for the support of planking intended as scaffolds or working platforms.

(7) No scaffold shall be erected, moved, dismantled or altered except under the supervision of competent persons.

(8) No welding, burning, riveting or open flame work shall be performed on any staging suspended by means of fiber rope.

(9) Lifting bridles on working platforms suspended from cranes shall consist of four legs so attached that the stability of the platform is assured.

(10) Unless the crane hook has a safety latch or is moused, the lifting bridles on working platforms suspended from cranes shall be attached by shackles to the lower lifting block or other positive means shall be taken to prevent them from becoming accidentally disengaged from the crane hook.

(b) *Independent pole wood scaffolds.* (1) All pole uprights shall be set plumb. Poles shall rest on a foundation of sufficient size and strength to distribute the load and to prevent displacement.

(2) In light-duty scaffolds not more than 24 feet in height, poles may be spliced by overlapping the ends not less than 4 feet and securely nailing them together. A substantial cleat shall be nailed to the lower section to form a support for the upper section except when bolted connections are used.

(3) All other poles to be spliced shall be squared at the ends of each splice, abutted, and rigidly fastened together by not less than two cleats securely nailed or bolted thereto. Each cleat shall overlap each pole end by at least 24 inches and shall have a width equal to the face of the pole to which it is attached. The combined cross sectional area of the cleats shall be not less than the cross sectional area of the pole.

(4) Ledgers shall extend over two consecutives pole spaces and shall overlap the poles at each end by not less than 4 inches. They shall be left in position to brace the poles as the platform is raised with the progress of the work. Ledgers shall be level and shall be securely nailed or bolted to each pole and shall be placed against the inside face of each pole.

(5) All bearers shall be set with their greater dimension vertical and shall extend beyond the ledgers upon which they rest.

(6) Diagonal bracing shall be provided between the parallel poles, and cross bracing shall be provided between the inner and outer poles or from the outer poles to the ground.

(7) Minimum dimensions and spacing of members shall be in accordance with table E–1 in § 1501.68.

(8) Platform planking shall be in accordance with the requirements of paragraph (h) of this section.

(9) Backrails and toeboards shall be in accordance with the requirements of paragraph (i) of this section.

(c) *Independent pole metal scaffolds.* (1) Metal scaffold members shall be maintained in good repair and free of corrosion.

(2) All vertical and horizontal members shall be fastened together with a coupler or locking device which will form a positive connection. The locking device shall be of a type which has no loose parts.

(3) Posts shall be kept plumb during erection and the scaffold shall be subsequently kept plumb and rigid by means of adequate bracing.

(4) Posts shall be fitted with bases supported on a firm foundation to distribute the load. When wooden sills are used, the bases shall be fastened thereto.

(5) Bearers shall be located at each set of posts, at each level, and at each intermediate level where working platforms are installed.

(6) Tubular bracing shall be applied both lengthwise and crosswise as required.

(7) Platform planking shall be in accordance with the requirements of paragraph (h) of this section.

(8) Backrails and toeboards shall be in accordance with the requirements of paragraph (i) of this section.

(d) *Wood trestle and extension trestle ladders.* (1) The use of trestle ladders, or extension sections or base sections of extension trestle ladders longer than 20 feet is prohibited. The total height of base and extension may, however, be more than 20 feet.

(2) The minimum dimensions of the side rails of the trestle ladder, or the base sections of the extension trestle ladder, shall be as follows:

(i) Ladders up to and including those 16 feet long shall have side rails of not less than $1\frac{7}{16}$ x $2\frac{3}{4}$ inch lumber.

(ii) Ladders over 16 feet long and up to and including those 20 feet long shall have side rails of not less than $1\frac{5}{16}$ x 3 inch lumber.

(3) The side rails of the extension section of the extension trestle ladder shall be parallel and shall have minimum dimensions as follows:

(i) Ladders up to and including 12 feet long shall have side rails of not less than 1⅝ x 2¼ inch lumber.

(ii) Ladders over 12 feet long and up to and including those 16 feet long shall have side rails of not less than 1⅝ x 2½ inch lumber.

(iii) Ladders over 16 feet long and up to and including those 20 feet long shall have side rails of not less than 1⅝ x 2¾ inch lumber.

(4) Trestle ladders and base sections of extension trestle ladders shall be so spread that when in an open position the spread of the trestle at the bottom, inside to inside, shall be not less than 5½ inches per foot of the length of the ladder.

(5) The width between the side rails at the bottom of the trestle ladder or of the base section of the extension trestle ladder shall be not less than 21 inches for all ladders and sections 6 feet or less in length. For longer lengths of ladder the width shall be increased at least 1 inch for each additional foot of length. The width between the side rails of the extension section of the trestle ladder shall be not less than 12 inches.

(6) In order to limit spreading, the top ends of the side rails of both the trestle ladder and of the base section of the extension trestle ladder shall be beveled, or of equivalent construction, and shall be provided with a metal hinge.

(7) A metal spreader or locking device to hold the front and back sections in an open position, and to hold the extension section securely in the elevated position, shall be a component of each trestle ladder or extension trestle ladder.

(8) Rungs shall be parallel and level. On the trestle ladder, or on the base section of the extension trestle ladder, rungs shall be spaced not less than 8 inches nor more than 18 inches apart; on the extension section of the extension trestle ladder, rungs shall be spaced not less than 6 inches nor more than 12 inches apart.

(9) Platform planking shall be in accordance with the requirements of paragraph (h) of this section, except that the width of the platform planking shall not exceed the distance between the side-rails.

(10) Backrails and toeboards shall be in accordance with the requirements of paragraph (i) of this section.

(e) *Painters' suspended scaffolds.* (1) The supporting hooks of swinging scaffolds shall be constructed to be equivalent in strength to mild steel or wrought iron, shall be forged with care, shall be not less than ⅞ inch in diameter, and shall be secured to a safe anchorage at all times.

(2) The ropes supporting a swinging scaffold shall be equivalent in strength to first-grade ¾ inch diameter manila rope properly rigged into a set of standard 6 inch blocks consisting of at least one double and one single block.

(3) Manila and wire ropes shall be carefully examined before each operation and thereafter as frequently as may be necessary to ensure their safe condition.

(4) Each end of the scaffold platform shall be supported by a wrought iron or mild steel stirrup or hanger, which in turn is supported by the suspension ropes.

(5) Stirrups shall be constructed so as to be equivalent in strength to wrought iron ¾ inch in diameter.

(6) The stirrups shall be formed with a horizontal bottom member to support the platform, shall be provided with means to support the guardrail and midrail and shall have a loop or eye at the top for securing the supporting hook on the block.

(7) Two or more swinging scaffolds shall not at any time be combined into one by bridging the distance between them with planks or any other form of platform.

(8) No more than two men shall be permitted to work at one time on a swinging scaffold built to the minimum specifications contained in this paragraph. Where heavier construction is used, the number of men permitted to work on the scaffold shall be determined by the size and the safe working load of the scaffold.

(9) Backrails and toeboards shall be in accordance with the requirements of paragraph (i) of this section.

(10) The swinging scaffold platform shall be one of the three types described in subparagraphs (11), (12), and (13) of this paragraph.

(11) The ladder-type platform consists of boards upon a horizontal ladder-like structure, referred to herein as the ladder, the side rails of which are parallel. If this type of platform is used the following requirements shall be met:

(i) The width between the side rails shall be no more than 20 inches.

(ii) The side rails of ladders in ladder-type platforms shall be equivalent in strength to a beam of clear straight-grained spruce of the dimensions contained in Table E–2 in § 1501.68.

(iii) The side rails shall be tied together with tie rods. The tie rods shall be not less than 5/16 inch in diameter, located no more than 5 feet apart, pass through the rails, and be riveted up tight against washers at both ends.

(iv) The rungs shall be of straight-grained oak, ash, or hickory, not less than 1⅛ inches diameter, with ⅞ inch tenons mortised into the side rails not less than ⅞ inch and shall be spaced no more than 18 inches on centers.

(v) Flooring strips shall be spaced no more than ⅝ inch apart except at the side rails, where 1 inch spacing is permissible.

(vi) Flooring strips shall be cleated on their undersides.

(12) The plank-type platform consists of planks supported on the stirrups or hangers. If this type of platform is used, the following requirements shall be met:

(i) The planks of plank-type platforms shall be of not less than 2 x 10 inch lumber.

(ii) The platform shall be no more than 24 inches in width.

(iii) The planks shall be tied together by cleats of not less than 1 x 6 inch lumber, nailed on their undersides at intervals of not more than 4 feet.

(iv) The planks shall extend not less than 6 inches nor more than 18 inches beyond the supporting stirrups.

(v) A cleat shall be nailed across the platform on the underside at each end outside the stirrup to prevent the platform from slipping off the stirrup.

(vi) Stirrup supports shall be not more than 10 feet apart.

(13) The beam-type platform consists of longitudinal side stringers with cross beams set on edge and spaced not more than 4 feet apart on which longitudinal platform planks are laid. If this type platform is used the following requirements shall be met:

(i) The side stringers shall be of sound, straight-grained lumber, free from knots, and of not less than 2 x 6 inch lumber, set on edge.

(ii) The stringers shall be supported on the stirrups with a clear span between stirrups of not more than 16 feet.

(iii) The stringers shall be bolted to the stirrups by U-bolts passing around the stirrups and bolted through the stringers with nuts drawn up tight on the inside face.

(iv) The ends of the stringers shall extend beyond the stirrups not less than 6 inches nor more than 12 inches at each end of the platform.

(v) The platform shall be supported on cross beams of 2 x 6 inch lumber between the side stringers securely nailed thereto and spaced not more than 4 feet on centers.

(vi) The platform shall be not more than 24 inches wide.

(vii) The platform shall be formed of boards ⅞ inch in thickness by not less than 6 inches in width, nailed tightly together, and extending to the outside face of the stringers.

(viii) The ends of all platform boards shall rest on the top of the cross beams, shall be securely nailed, and at no intermediate points in the length of the platform shall there by any cantilever ends.

(f) *Horse scaffolds.* (1) The minimum dimensions of lumber used in the construction of horses shall be in accordance with Table E–3 in § 1501.68.

(2) Horses constructed of materials other than lumber shall provide the strength, rigidity and security required of horses constructed of lumber.

(3) The lateral spread of the legs shall be equal to not less than one-third of the height of the horse.

(4) All horses shall be kept in good repair, and shall be properly secured when used in staging or in locations where they may be insecure.

(5) Platform planking shall be in accordance with the requirements of paragraph (h) of this section.

(6) Backrails and toeboards shall be in accordance with paragraph (i) of this section.

(g) *Other types of scaffolds.* (1) Scaffolds of a type for which specifications are not contained in this section shall meet the general requirements of

paragraphs (a), (h) and (i) of this section, shall be in accordance with recognized principles of design and shall be constructed in accordance with accepted standards covering such equipment.

(h) *Scaffold or platform planking.* (1) Except as otherwise provided in paragraph (e) (11) and (13) of this section, platform planking shall be of not less than 2 x 10 inch lumber. Platform planking shall be straight-grained and free from large or loose knots and may be either rough or dressed.

(2) Platforms of staging shall be not less than two 10 inch planks in width except in such cases as the structure of the vessel or the width of the trestle ladders make it impossible to provide such a width.

(3) Platform planking shall project beyond the supporting members at either end by at least 6 inches but in no case shall project more than 12 inches unless the planks are fastened to the supporting members.

(4) Table E–4 in § 1501.68 shall be used as a guide in determining safe loads for scaffold planks.

(i) *Backrails and toeboards.* (1) Scaffolding, staging, runways, or working platforms which are supported or suspended more than 5 feet above a solid surface, or at any distance above the water, shall be provided with a railing which has a top rail whose upper surface is from 42 to 45 inches above the upper surface of the staging, platform, or runway and a midrail located halfway between the upper rail and the staging, platform, or runway.

(2) Rails shall be of 2 x 4 inch lumber, flat bar or pipe. When used with rigid supports, taut wire or fiber rope of adequate strength may be used. If the distance between supports is more than 8 feet, rails shall be equivalent in strength to 2 x 4 inch lumber. Rails shall be firmly secured.

(3) Rails may be omitted where the structure of the vessel prevents their use. When rails are omitted employees working more than 5 feet above solid surfaces shall be protected by safety belts and life lines meeting the requirements of § 1501.84(b), and employees working over water shall be protected by buoyant working vests meeting the requirements of § 1501.84(a).

(4) Employees working from swinging scaffolds which are triced out of a vertical line below their supports or from scaffolds on paint floats subject to surging, shall be protected against falling toward the vessel by a railing or a safety belt and line attached to the backrail.

(5) When necessary, to prevent tools and materials from falling on men below, toeboards of not less than 1 x 4 inch lumber shall be provided.

(j) *Access to staging.* (1) Access from below to staging more than 5 feet above a floor, deck or the ground shall consist of well secured stairways, cleated ramps, fixed or portable ladders meeting the applicable requirements of § 1501.42 or rigid type non-collapsible trestles with parallel and level rungs.

(2) Ramps and stairways shall be provided with 36-inch handrails with midrails.

(3) Ladders shall be so located or other means shall be taken so that it is not necessary for employees to step more than one foot from the ladder to any intermediate landing or platform.

(4) Ladders forming integral parts of prefabricated staging are deemed to meet the requirements of these regulations.

(5) Access from above to staging more than 3 feet below the point of access shall consist of a straight, portable ladder meeting the applicable requirements of § 1501.42 or a Jacob's ladder properly secured, meeting the requirements of § 1501.44(d).

§ 1501.42 Ladders.

(a) *General requirements.* (1) The use of ladders with broken or missing rungs or steps, broken or split side rails, or other faulty or defective construction is prohibited. When ladders with such defects are discovered, they shall be immediately withdrawn from service. Inspection of metal ladders shall include checking for corrosion of interiors of open end, hollow rungs.

(2) When sections of ladders are spliced, the ends shall be abutted, and not fewer than 2 cleats shall be securely nailed or bolted to each rail. The combined cross sectional area of the cleats shall be not less than the cross sectional area of the side rail. The dimensions of side rails for their total length shall be those specified in paragraphs (b) or (c) of this section.

(3) Portable ladders shall be lashed, blocked or otherwise secured to prevent their being displaced. The side rails of ladders used for access to any level shall extend not less than 36 inches above that level. When this is not practical, grab rails which will provide a secure grip for an employee moving to or from the point of access shall be installed.

(4) Portable metal ladders shall be of strength equivalent to that of wood ladders. Manufactured portable metal ladders provided by the employer shall be in accordance with the provisions of the American Standard Safety Code for Portable Metal Ladders, A14.2.

(5) Portable metal ladders shall not be used near electrical conductors nor for electric arc welding operations.

(6) Manufactured portable wood ladders provided by the employer shall be in accordance with the provisions of the American Standard Safety Code for Portable Wood Ladders, A14.1.

(b) *Construction of portable wood cleated ladders up to 30 feet in length.* (1) Wood side rails shall be made from West Coast hemlock, Eastern spruce, Sitka spruce, or wood of equivalent strength. Material shall be seasoned, straight-grained wood, and free from shakes, checks, decay or other defects which will impair its strength. The use of low density woods is prohibited.

(2) Side rails shall be dressed on all sides, and kept free of splinters.

(3) All knots shall be sound and hard. The use of material containing loose knots is prohibited. Knots shall not appear on the narrow face of the rail and, when in the side face, shall be not more than ½ inch in diameter or within ½ inch of the edge of the rail or nearer than 3 inches to a tread or rung.

(4) Pitch pockets not exceeding ⅛ inch in width, 2 inches in length and ½ inch in depth are permissible in wood side rails, provided that not more than one such pocket appears in each 4 feet of length.

(5) The width between side rails at the base shall be not less than 11½ inches for ladders 10 feet or less in length. For longer ladders this width shall be increased at least ¼ inch for each additional 2 feet in length.

(6) Side rails shall be at least 1⅝ x 3⅝ inches in cross section.

(7) Cleats (meaning rungs rectangular in cross section with the wide dimension parallel to the rails) shall be of the material used for side rails, straight-grained and free from knots. Cleats shall be mortised into the edges of the side rails ½ inch, or filler blocks shall be used on the rails between the cleats. The cleats shall be secured to each rail with three 10d common wire nails or fastened with through bolts or other fasteners of equivalent strength. Cleats shall be uniformly spaced not more than 12 inches apart.

(8) Cleats 20 inches or less in length shall be at least $^{25}/_{32}$ x 3 inches in cross section. Cleats over 20 inches but not more than 30 inches in length shall be at least $^{25}/_{32}$ x 3¾ inches in cross section.

(c) *Construction of portable wood cleated ladders from 30 to 60 feet in length.* (1) Ladders from 30 to 60 feet in length shall be in accordance with the specifications of paragraph (b) of this section with the following exceptions:

(i) Rails shall be of not less than 2 x 6 inch lumber.

(ii) Cleats shall be of not less than 1 x 4 inch lumber.

(iii) Cleats shall be nailed to each rail with five 10d common wire nails or fastened with through bolts or other fastenings of equivalent strength.

§ 1501.43 Guarding of deck openings.

(a) When employees are working in the vicinity of flush manholes and other small openings of comparable size in the deck and other working surfaces, such openings shall be suitably covered or guarded to a height of not less than 30 inches, except where the use of such guards is made impracticable by the work actually in progress.

(b) When employees are working around open hatches not protected by coamings to a height of 24 inches or around other large openings, the edge of the opening shall be guarded in the working area to a height of 36 to 42 inches, except where the use of such guards is made impracticable by the work actually in progress.

§ 1501.44 Access to vessels.

(a) *Access to vessels afloat.* The employer shall not permit employees to board or leave any vessel, except a barge or river towboat, until the following requirements have been met:

(1) Whenever practicable, a gangway of not less than 20 inches walking surface, of adequate strength, maintained in safe repair and safely secured shall

be used. If a gangway is not practicable, a substantial straight ladder, extending at least 36 inches above the upper landing surface and adequately secured against shifting or slipping shall be provided. When conditions are such that neither a gangway nor a straight ladder can be used, a Jacob's ladder meeting the requirements of paragraph (d) (1) and (2) of this section may be used.

(2) Each side of such gangway, and the turn table if used, shall have a railing with a minimum height of approximately 33 inches measured perpendicularly from rail to walking surface at the stanchion, with a mid rail. Rails shall be of wood, pipe, chain, wire or rope and shall be kept taut at all times.

(3) Gangways on vessels inspected and certificated by the U.S. Coast Guard are deemed to meet the foregoing requirements, except in cases where the vessel's regular gangway is not being used.

(4) The gangway shall be kept properly trimmed at all times.

(5) When a fixed tread accommodation ladder is used, and the angle is low enough to require employees to walk on the edge of the treads, cleated duckboards shall be laid over and secured to the ladder.

(6) When the lower end of a gangway overhangs the water between the ship and the dock in such a manner that there is danger of employees falling between the ship and the dock, a net or other suitable protection shall be rigged at the foot of the gangway in such a manner as to prevent employees from falling from the end of the gangway.

(7) If the foot of the gangway is more than one foot away from the edge of the apron, the space between them shall be bridged by a firm walkway equipped with railings, with a minimum height of approximately 33 inches with mid rails on both sides.

(8) Supporting bridles shall be kept clear so as to permit unobstructed passage for employees using the gangway.

(9) When the upper end of the means of access rests on or flush with the top of the bulwark, substantial steps properly secured and equipped with at least one substantial handrail approximately 33 inches in height shall be provided between the top of the bulwark and the deck.

(10) Obstructions shall not be laid on or across the gangway.

(11) The means of access shall be adequately illuminated for its full length.

(12) Unless the construction of the vessel makes it impossible, the means of access shall be so located that drafts of cargo do not pass over it. In any event loads shall not be passed over the means of access while employees are on it.

(b) *Access to vessels in drydock or between vessels.* Gangways meeting the requirements of paragraph (a) (1), (2), (9), (10), (11) of this section shall be provided for access from wing wall to vessel or, when two or more vessels, other than barges or river towboats, are lying abreast, from one vessel to another.

(c) *Access to barges and river towboats.* (1) Ramps for access of vehicles to or between barges shall be of adequate strength, provided with side boards, well maintained and properly secured.

(2) Unless employees can step safely to or from the wharf, float, barge, or river towboat, either a ramp in accordance with the requirements of subparagraph (1) of this paragraph or a safe walkway in accordance with the requirements of paragraph (a) (7) of this section shall be provided. When a walkway is impracticable, a substantial straight ladder, extending at least 36 inches above the upper landing surface and adequately secured against shifting or slipping shall be provided. When conditions are such that neither a walkway nor a straight ladder can be used, a Jacob's ladder in accordance with the requirements of paragraph (d) of this section may be used.

(3) The means of access shall be in accordance with the requirements of paragraph (a) (9), (10) and (11) of this section.

(d) *Jacob's ladders.* (1) Jacob's ladders shall be of the double rung or flat tread type. They shall be well maintained and properly secured.

(2) A Jacob's ladder shall either hang without slack from its lashings or be pulled up entirely.

§ 1501.45 Access to and guarding of dry docks.

(a) A gangway, ramp or permanent stairway of not less than 20 inches walking surface, of adequate strength, maintained in safe repair and securely fastened, shall be provided between a floating dry dock and the pier or bulkhead.

(b) Each side of such gangway, ramp or permanent stairway, including those which are used for access to wing walls from dry dock floors, shall have a railing with a mid rail. Such railings on gangways or ramps shall be approximately 42 inches in height; and railings on permanent stairways shall be not less than approximately 30 or more than approximately 34 inches in height. Rails shall be of wood, pipe, chain, wire, or rope and shall be kept taut at all times.

(c) Railings meeting the requirements of paragraph (b) of this section shall be provided on the means of access to and from the floors of graving docks.

(d) Railings approximately 42 inches in height, with a mid rail, shall be provided on the edges of wing walls of floating dry docks and on the edges of graving docks. Sections of the railings may be temporarily removed where necessary to permit line handling while a vessel is entering or leaving the dock.

(e) When employees are working on the floor of a floating dry dock where they are exposed to the hazard of falling into the water, the end of the dry dock shall be equipped with portable stanchions and 42 inch railings with a mid rail. When such a railing would be impracticable or ineffective, other effective means shall be provided to prevent men from falling into the water.

(f) Access to wingwalls from floors of dry-docks shall be by ramps, permanent stairways or ladders meeting the applicable requirements of § 1501.42.

§ 1501.46 Access to cargo spaces and confined spaces.

(a) *Cargo spaces.* (1) There shall be at least one safe and accessible ladder in any cargo space which employees must enter.

(2) When any fixed ladder is visibly unsafe, the employer shall prohibit its use by employees.

(3) Straight ladders of adequate strength and suitably secured against shifting or slipping shall be provided as necessary when fixed ladders in cargo spaces do not meet the requirements of subparagraph (1) of this paragraph. When conditions are such that a straight ladder cannot be used, a Jacob's ladder meeting the requirements of § 1501.44(d) may be used.

(4) When cargo is stowed within 4 inches of the back of ladder rungs, the ladder shall be deemed "unsafe" for the purpose of this section.

(5) Fixed ladders or straight ladders provided for access to cargo spaces shall not be used at the same time that cargo drafts or other loads are entering or leaving the hold. Before using these ladders to enter or leave the hold, the employee shall be required to inform the winchman or crane signalman of his intention.

(b) *Confined spaces.* (1) More than one means of access shall be provided to a confined space in which employees are working and in which the work may generate a hazardous atmosphere in the space except where the structure or arrangement of the vessel makes this provision impractical.

(2) When the ventilation ducts required by these regulations must pass through these means of access, the ducts shall be of such a type and so arranged as to permit free passage of an employee through at least two of these means of access.

§ 1501.47 Working surfaces.

When firebox floors present tripping hazards of exposed tubing or of missing or removed refractory, sufficient planking to afford safe footing shall be laid while work is being carried on within the boiler.

Subpart F—General Working Conditions

§ 1501.51 Housekeeping.

(a) Good housekeeping conditions shall be maintained at all times. Adequate aisles and passageways shall be maintained in all work areas. All staging platforms, ramps, stairways, walkways, aisles, and passageways on vessels or dry docks shall be kept clear of all debris such as welding rod tips, bolts, nuts, and similar material. Welding leads, burner hose and air hose in aisles or passageways shall be elevated over or placed under the walkway surfaces or covered by cross-over planks.

(b) All working areas on vessels and dry docks shall be kept reasonably free of debris, and construction material shall be so piled as not to present a hazard to employees.

(c) Slippery conditions on walkways or working surfaces shall be eliminated as they occur.

(d) Free access shall be maintained at all times to all exits and to all fire-alarm boxes or fire-extinguishing equipment.

(e) All oils, paints, thinners, solvents waste, rags, or other flammable substances shall be kept in fire resistant covered containers when not in use.

§ 1501.52 Illumination.

(a) All means of access and walkways leading to working areas as well as the working areas themselves shall be adequately illuminated.

(b) Temporary lights shall meet the following requirements:

(1) Temporary lights shall be equipped with guards to prevent accidental contact with the bulb, except that guards are not required when the construction of the reflector is such that the bulb is deeply recessed.

(2) Temporary lights shall be equipped with heavy duty electric cords with connections and insulation maintained in safe condition. Temporary lights shall not be suspended by their electric cords unless cords and lights are designed for this means of suspension.

(3) Cords shall be kept clear of working spaces and walkways or other locations in which they are readily exposed to damage.

(c) Exposed non-current-carrying metal parts of temporary lights furnished by the employer shall be grounded either through a third wire in the cable containing the circuit conductors or through a separate wire which is grounded at the source of the current. Grounding shall be in accordance with the requirements of § 1501.72(b).

(d) Where temporary lighting from sources outside the vessel is the only means of illumination, portable emergency lighting equipment shall be available to provide illumination for safe movement of empoyees.

(e) Employees shall not be permitted to enter dark spaces without a suitable portable light. The use of matches and open flame lights is prohibited. In non-gas free spaces, portable lights shall meet the requirements of § 1501.12(b).

(f) Temporary lighting stringers or streamers shall be so arranged as to avoid overloading of branch circuits. Each branch circuit shall be equipped with overcurrent protection of capacity not exceeding the rated current carrying capacity of the cord used.

§ 1501.53 Utilities.

(a) *Steam supply and hoses.* (1) Prior to supplying a vessel with steam from a source outside the vessel, the employer shall ascertain from responsible vessel's representatives, having knowledge of the condition of the plant, the safe working pressure of the vessel's steam system. The employer shall install a pressure gauge and a relief valve of proper size and capacity at the point where the temporary steam hose joins the vessel's steam piping system or systems. The relief valve shall be set and capable of relieving at a pressure not exceeding the safe working pressure of the vessel's system in its present condition, and there shall be no means of isolating the relief valve from the system which it protects. The pressure gauge and relief valve shall be located so as to be visible and readily accessible.

(2) Steam hose and fittings shall have a safety factor of not less than five (5).

(3) When steam hose is hung in a bight or bights, the weight shall be relieved by appropriate lines. The hose shall be protected against chafing.

(4) Steam hose shall be protected from damage and hose and temporary piping shall be so shielded where passing through normal work areas as to prevent accidental contact by employees.

(b) *Electric power.* (1) When the vessel is supplied with electric power from a source outside the vessel, the following precautions shall be taken prior to energizing the vessel's circuits:

(i) If in dry dock, the vessel shall be adequately grounded.

(ii) The employer shall ascertain from responsible vessel's representatives, having a knowledge of the condition of the vessel's electrical system, that all circuits to be energized are in a safe condition.

(iii) All circuits to be energized shall be equipped with overcurrent protection of capacity not exceeding the rated current carrying capacity of the cord used.

§ 1501.54 Work in confined or isolated spaces.

When any work is performed in a confined space, except as provided in § 1501.31(b)(3), or when an employee is working alone in an isolated location, frequent checks shall be made to ensure the safety of the employees.

§ 1501.55 Work on or in the vicinity of radar and radio.

(a) No employees other than radar or radio repairmen shall be permitted to work on masts, king posts or other aloft areas unless the radar and radio are secured or otherwise made incapable of radiation. In either event, the radio and radar shall be appropriately tagged.

(b) Testing of radar or radio shall not be done until the employer can schedule such tests at a time when no work is in progress aloft or personnel can be cleared from the danger area according to minimum safe distances established for and based on the type, model, and power of the equipment.

§ 1501.56 Work in or on lifeboats.

(a) Before employees are permitted to work in or on a lifeboat, either stowed or in a suspended position, the employer shall ensure that the boat is secured independently of the releasing gear to prevent the boat from falling due to accidental tripping of the releasing gear and movement of the davits or capsizing of a boat in chocks.

(b) Employees shall not be permitted to remain in boats while the boats are being hoisted into final stowed position.

(c) Employees shall not be permitted to work on the outboard side of lifeboats stowed on their chocks unless the boats are secured by gripes or otherwise secured to prevent them from swinging outboard.

§ 1501.57 Health and sanitation.

(a) The employer shall provide adequate washing facilities for employees engaged in the application of paints or coatings or in other operations where contaminants can, by ingestion or absorption, be detrimental to the health of the employee. The employer shall encourage good personal hygiene practices by informing the employees of the need for removing surface contaminants by thorough washing of hands and face prior to eating or smoking.

(b) The employer shall not permit eating or smoking in areas undergoing surface preparation or preservation.

(c) The employer shall not permit employees to work in the immediate vicinity of uncovered garbage and shall ensure that employees working beneath or on the outboard side of a vessel are not subject to contamination by drainage or waste from overboard discharges.

§ 1501.58 First aid.

(a) Unless a first aid room and a qualified attendant are close at hand and prepared to render first aid to employees on behalf of the employer, the employer shall furnish a first aid kit for each vessel on which work is being performed, except that when work is being performed on more than one small vessel at one pier, only one kit shall be required. The kit, when required, shall be kept close to the vessel and at least one employee, close at hand, shall be qualified to administer first aid to the injured.

(b) The first aid kit shall consist of a weatherproof container with individual sealed packages for each type of item. The contents of such kit shall contain a sufficient quantity of at least the following types of items:

Gauze roller bandages, 1 inch and 2 inch.
Gauze compress bandages, 4 inch.
Adhesive bandages, 1 inch.
Triangular bandage, 40 inch.
Ammonia inhalants and ampules.
Antiseptic applicators or swabs.
Burn dressing.
Eye dressing.
Wire or thin board splints.
Forceps and tourniquet.

(c) The contents of the first aid kit shall be checked before being sent out on each job and at least weekly on each job to ensure that the expended items are replaced.

(d) There shall be available for each vessel on which ten (10) or more employees are working one Stokes basket stretcher, or equivalent, permanently equipped with bridles for attaching to the hoisting gear, except that no more than two stretchers are required on each job location. Stretchers shall be kept close to the vessels. This paragraph does not apply where ambulance services carry such stretchers.

Subpart G—Gear and Equipment for Rigging and Materials Handling

§ 1501.61 Inspection.

(a) All gear and equipment provided by the employer for rigging and materials handling shall be inspected before each shift and, when necessary, at intervals during its use to ensure that it is safe. Defective gear shall be removed and repaired or replaced before further use.

(b) The safe working load of gear as specified in §§ 1501.62 and 1501.63 shall not be exceeded.

§ 1501.62 Ropes, chains and slings.

(a) *Manila rope and manila rope slings.* (1) Table G–1 in § 1501.68 shall be used to determine the safe working load of various sizes of manila rope and manila rope slings at various angles, except that higher safe working loads are permissible when recommended by the manufacturer for specific, identifiable products, provided that a safety factor of not less than five (5) is maintained.

(b) *Wire rope and wire rope slings.* (1) Tables G–2 through G–5 in § 1501.68 shall be used to determine the safe working loads of various sizes and classifications of improved plow steel wire rope and wire rope slings with various types of terminals. For sizes, classifications and grades not included in these tables, the safe working load recommended by the manufacturer for specific, identifiable products shall be followed, provided that a safety factor of not less than five (5) is maintained.

(2) Protruding ends of strands in splices on slings and bridles shall be covered or blunted.

(3) Where U-bolt wire rope clips are used to form eyes, Table G–6 in § 1501.68 shall be used to determine the number and spacing of clips. The U-bolt shall be applied so that the "U" section is in contact with the dead end of the rope.

(4) Wire rope shall not be secured by knots.

(c) *Chains and chain slings.* (1) Tables G–7 and G–8 in § 1501.68 shall be used to determine the working load limit of various sizes of wrought iron and alloy steel chains and chain slings, except that higher safe working loads are permissible when recommended by the manufacturer for specific, identifiable products.

(2) All sling chains, including end fastenings, shall be given a visual inspection before being used on the job. A thorough inspection of all chains in use shall be made every 3 months. Each chain shall bear an indication of the month in which it was thoroughly inspected. The thorough inspection shall include inspection for wear, defective welds, deformation and increase in length or stretch.

(3) Interlink wear, not accompanied by stretch in excess of 5 percent, shall be noted and the chain removed from service when maximum allowable wear at any point of link, as indicated in Table G–9 in § 1501.68 has been reached.

(4) Chain slings shall be removed from service when, due to stretch, the increase in length of a measured section exceeds five (5) percent; when a link is bent, twisted or otherwise damaged; or when raised scarfs or defective welds appear.

(5) All repairs to chains shall be made under qualified supervision. Links or portions of the chain found to be defective as described in subparagraph (4) of this paragraph shall be replaced by links having proper dimensions and made of material similar to that of the chain. Before repaired chains are returned to service, they shall be proof tested to the proof test load recommended by the manufacturer.

(6) Wrought iron chains in constant use shall be annealed or normalized at intervals not exceeding six months when recommended by the manufacturer. The chain manufacturer shall be consulted for recommended procedures for annealing or normalizing. Alloy chains shall never be annealed.

(7) A load shall not be lifted with a chain having a kink or knot in it. A chain shall not be shortened by bolting, wiring or knotting.

§ 1501.63 Shackles and hooks.

(a) *Shackles.* (1) Table G–10 in § 1501.68 shall be used to determine the safe working loads of various sizes of shackles, except that higher safe working loads are permissible when recommended by the manufacturer for specific, identifiable products, provided that a safety factor of not less than five (5) is maintained.

(b) *Hooks.* (1) The manufacturer's recommendations shall be followed in determining the safe working loads of the various sizes and types of specific and identifiable hooks. All hooks for which no applicable manufacturer's recommendations are available shall be tested to twice the intended safe working load before they are initially put into use. The employer shall maintain a record of the dates and results of such tests.

(2) Loads shall be applied to the throat of the hook since loading the point overstresses and bends or springs the hook.

(3) Hooks shall be inspected periodically to see that they have not been bent by overloading. Bent or sprung hooks shall not be used.

§ 1501.64 Chain falls and pull-lifts.

(a) Chain falls and pull-lifts shall be clearly marked to show the capacity and the capacity shall not be exceeded.

(b) Chain falls shall be regularly inspected to ensure that they are safe, particular attention being given to the lift chain, pinion, sheaves and hooks for distortion and wear. Pull-lifts shall be regularly inspected to ensure that they are safe, particular attention being given to the ratchet, pawl, chain and hooks for distortion and wear.

(c) Straps, shackles, and the beam or overhead structure to which a chain fall or pull-lift is secured shall be of adequate strength to support the weight of load plus gear. The upper hook shall be moused or otherwise secured against coming free of its support.

§ 1501.65 Hoisting and hauling equipment.

(a) The moving parts of hoisting and hauling equipment shall be guarded.

(b) Mobile crawler or truck cranes used on a vessel:

(1) The maximum manufacturer's rated safe working loads for the various working radii of the boom and the maximum and minimum radii at which the boom may be safely used with and without outriggers shall be conspicuously posted near the controls and shall be visible to the operator. A radius indicator shall be provided.

(2) The posted safe working loads of mobile crawler or truck cranes under the conditions of use shall not be exceeded.

(3) The area within the swing radius of the body of a crawler or truck crane and the extended parts thereof shall be guarded in such a manner as to prevent an employee from being in such a position as to be struck by the crane or caught between the crane and fixed parts of the vessel or of the crane itself.

(c) Marine railways:

(1) The cradle or carriage on the marine railway shall be positively blocked or secured when in the hauled position to prevent it from being accidentally released.

§ 1501.66 Use of gear.

(a) Loads shall be safely rigged before being hoisted.

(b) Plates shall be handled on and off hulls by means of shackles whenever possible. Clips or pads of ample size shall be welded to the plate to receive the shackle pins when there are no holes in the plate. When it is not possible to make holes in or to weld pads to the plate, alligator tongs, grab hooks, grab clamps or screw clamps may be used. In such cases special precautions shall be taken to keep employees from under such lifts.

(c) Tag lines shall be provided on loads likely to swing or to need guidance.

(d) When slings are secured to eyebolts, the slings shall be so arranged, using spreaders if necessary, that the pull is within 20 degrees of the axis of the bolt.

(e) Slings shall be padded by means of wood blocks or other suitable material where they pass over sharp edges or corners of loads so as to prevent cutting or kinking.

(f) Skips shall be rigged to be handled by not less than 3 legged bridles, and all legs shall always be used. When open end skips are used, means shall be taken to prevent the contents from falling.

(g) Loose ends of idle legs of slings in use shall be hung on the hook.

(h) Employees shall not be permitted to ride the hook or the load.

(i) Loads (tools, equipment or other materials) shall not be swung or suspended over the heads of employees.

(j) Pieces of equipment or structure susceptible to falling or dislodgement shall be secured or removed as early as possible.

(k) An individual who is familiar with the signal code in use shall be assigned to act as a signalman when the hoist operator cannot see the load being handled. Communications shall be made by means of clear and distinct visual or auditory signals except that verbal signals shall not be permitted.

(l) Pallets, when used, shall be of such material and construction and so maintained as to safely support and carry the loads being handled on them.

(m) A section of hatch through which materials or equipment are being raised, lowered, moved or otherwise shifted by a crane, winch, hoist or derrick, shall be completely opened. The beams and pontoon left in place adjacent to an opening shall be sufficiently lashed, locked or otherwise secured to prevent them from being unshipped.

(n) Before loads or empty lifting gear are raised, lowered, or swung, clear and sufficient advance warning shall be given to employees in the vicinity of such operations.

(o) At no time shall an employee be permitted to place himself in a hazardous position between a swinging load and a fixed object.

§ 1501.67 Qualifications of Operators.

(a) When ship's gear is used to hoist materials aboard, a competent person shall determine that the gear is properly rigged, that it is in safe condition, and that it will not be overloaded by the size and weight of the lift.

(b) Only those employees who understand the signs, notices, and operating instructions, and are familiar with the signal code in use, shall be permitted to operate a crane, winch, or other power operated hoisting apparatus.

(c) No employee known to have defective uncorrected eyesight or hearing, or to be suffering from heart disease, epilepsy, or similar ailments which may suddenly incapacitate him, shall be permitted to operate a crane, winch or other power operated hoisting apparatus.

(d) No minor under eighteen (18) years of age shall be employed in occupations involving the operation of any power-driven hoisting apparatus or assisting in such operations by work such as hooking on, loading slings, rigging gear, etc.

§ 1501.68 Tables.

TABLE E-1

DIMENSIONS AND SPACING OF WOOD INDEPENDENT-POLE SCAFFOLD MEMBERS

Structural Members	Light duty (Up to 25 pounds per square foot)			Heavy duty (25 to 75 pounds per square foot)		
	Height in feet			Height in feet		
	24 or less	24–40	40–60	24 or less	24–40	40–60
Poles or uprights (in inches)	2 x 4	3 x 4 or 2 x 6	4 x 4	3 x 4	4 x 4	4 x 6
Bearers (in inches)	2 x 6	2 x 6	2 x 6	2 x 8	2 x 8	2 x 10
Ledgers (in inches)	2 x 6	2 x 6	2 x 6	2 x 8	2 x 8	2 x 8
Stringers (not supporting bearers) (in inches)	1 x 6	1 x 6	1 x 6	1 x 6	1 x 6	1 x 6
Braces (in inches)	1 x 4	1 x 6	1 x 6	1 x 6	1 x 6	1 x 6
Pole spacing—longitudinally (in feet)	7½	7½	7½	7	7	7
Pole spacing—transversely (in feet)	6½ min.	7½ min.	8½ min.	6½	10	10
Ledger spacing—vertically (in feet)	7	7	7	4½	4½	4½

TABLE E-2

SPECIFICATIONS FOR SIDE RAILS OF LADDERS

Length (in feet)	Cross section (in inches)	
	At ends	At center
15	1⅞ x 2¾	1⅞ x 3¾
16	1⅞ x 2¾	1⅞ x 3¾
18	1⅞ x 3	1⅞ x 4
20	1⅞ x 3	1⅞ x 4
24	1⅞ x 3	1⅞ x 4½

TABLE E-3

SPECIFICATIONS FOR THE CONSTRUCTION OF HORSES

Structural members	Height in feet		
	Up to 10	10 to 16	16 to 20
	Inches	*Inches*	*Inches*
Legs	2 x 4	3 x 4	4 x 6
Bearers or headers	2 x 6	2 x 8	4 x 6
Crossbraces	2 x 4 or 1 x 8	2 x 4	2 x 6
Longitudinal braces	2 x 4	2 x 6	2 x 6

TABLE E-4

SAFE CENTER LOADS FOR SCAFFOLD PLANK OF 1,100 POUNDS FIBRE STRESS

Span in Feet	Lumber dimensions in inches									
	A	B	A	B	A	B	A	B	A	B
	2 x 10	1⅝ x 9½	2 x 12	1⅝ x 11½	3 x 8	2⅝ x 7½	3 x 10	2⅝ x 9½	3 x 12	2⅝ x 11½
6	256	309	526		667		807			
8	192	232	395		500		605			
10	153	186	316		400		484			
12	128	155	263		333		404			
14	110	133	225		286		346			
16		116	197		250		303			

(A)—Rough lumber.
(B)—Dressed lumber.

TABLE G-1
MANILA ROPE
(In pounds or tons of 2000 pounds)

Circumference	Diameter in Inches	Single Leg	60°	45°	30°
3/4	1/4	120 lbs.	204 lbs.	170 lbs.	120 lbs.
1	5/16	200	346	282	200
1-1/8	3/8	270	467	380	270
1-1/4	7/16	350	605	493	350
1-3/8	15/32	450	775	635	450
1-1/2	1/2	530	915	798	530
1-3/4	9/16	690	1190	973	690
2	5/8	880	1520	1240	880
2-1/4	3/4	1080	1870	1520	1080
2-1/2	13/16	1300	2250	1830	1300
2-3/4	7/8	1540	2660	2170	1540
3	1	1800	3120	2540	1800
3-1/4	1-1/16	1.0 Tons	1.7 Tons	1.4 Tons	1.0 Tons
3-1/2	1-1/8	1.2	2.1	1.7	1.2
3-3/4	1-1/4	1.35	2.3	1.9	1.35
4	1-5/16	1.5	2.6	2.1	1.5
4-1/2	1-1/2	1.8	3.1	2.5	1.8
5	1-5/8	2.25	3.9	3.2	2.25
5-1/2	1-3/4	2.6	4.5	3.7	2.6
6	2	3.1	5.4	4.4	3.1
6-1/2	2-1/8	3.6	6.2	5.1	3.6

TABLE G–2

RATED CAPACITIES FOR IMPROVED PLOW STEEL, INDEPENDENT WIRE ROPE CORE, WIRE ROPE AND WIRE ROPE SLINGS

(In tons of 2000 pounds)

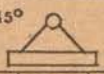
Rope Dia. Inches	SINGLE LEG					
	Vertical			Choker		
	A	B	C	A	B	C
6x19 CLASSIFICATION						
1/4"	.59	.56	.53	.44	.42	.40
3/8"	1.3	1.2	1.1	.98	.93	.86
1/2"	2.3	2.2	2.0	1.7	1.6	1.5
5/8"	3.6	3.4	3.0	2.7	2.5	2.2
3/4"	5.1	4.9	4.2	3.8	3.6	3.1
7/8"	6.9	6.6	5.5	5.2	4.9	4.1
1"	9.0	8.5	7.2	6.7	6.4	5.4
1-1/8"	11.	10.	9.0	8.5	7.8	6.8
6x37 CLASSIFICATION						
1-1/4"	13.	12.	10.	9.9	9.2	7.9
1-3/8"	16.	15.	13.	12.	11.	9.6
1-1/2"	19.	17.	15.	14.	13.	11.
1-3/4"	26.	24.	20.	19.	18.	15.
2"	33.	30.	26.	25.	23.	20.
2-1/4"	41.	38.	33.	31.	29.	25.

(A) - Socket or Swaged Terminal attachment.
(B) - Mechanical Sleeve attachment.
(C) - Hand Tucked Splice attachment.

TABLE G–3

RATED CAPACITIES FOR IMPROVED PLOW STEEL, INDEPENDENT WIRE ROPE CORE, WIRE ROPE SLINGS

(In tons of 2000 pounds)

Rope Dia. Inches	TWO - LEG BRIDLE OR BASKET HITCH											
	Vertical			60° 			45° 			30° 		
	A	B	C	A	B	C	A	B	C	A	B	C
6x19 CLASSIFICATION												
1/4"	1.2	1.1	1.0	1.0	.97	.92	.83	.79	.75	.59	.56	.53
3/8"	2.6	2.5	2.3	2.3	2.1	2.0	1.8	1.8	1.6	1.3	1.2	1.1
1/2"	4.6	4.4	3.9	4.0	3.8	3.4	3.2	3.1	2.8	2.3	2.2	2.0
5/8"	7.2	6.8	6.0	6.2	5.9	5.2	5.1	4.8	4.2	3.6	3.4	3.0
3/4"	10.	9.7	8.4	8.9	8.4	7.3	7.2	6.9	5.9	5.1	4.9	4.2
7/8"	14.	13.	11.	12.	11.	9.6	9.8	9.3	7.8	6.9	6.6	5.5
1"	18.	17.	14.	15.	15.	12.	13.	12.	10.	9.0	8.5	7.2
1-1/8"	23.	21.	18.	19.	18.	16.	16.	15.	13.	11.	10.	9.0
6x37 CLASSIFICATION												
1-1/4"	26.	24.	21.	23.	21.	18.	19.	17.	15.	13.	12.	10.
1-3/8"	32.	29.	25.	28.	25.	22.	22.	21.	18.	16.	15.	13.
1-1/2"	38.	35.	30.	33.	30.	26.	27.	25.	21.	19.	17.	15.
1-3/4"	51.	47.	41.	44.	41.	35.	36.	33.	29.	26.	24.	20.
2"	66.	61.	53.	57.	53.	46.	47.	43.	37.	33.	30.	26.
2-1/4"	83.	76.	66.	72.	66.	57.	58.	54.	47.	41.	38.	33.

(A) - Socket or Swaged Terminal Attachment.
(B) - Mechanical Sleeve Attachment.
(C) - Hand Tucked Splice Attachment.

TABLE G-4

RATED CAPACITIES FOR IMPROVED PLOW STEEL, FIBER CORE, WIRE ROPE AND WIRE ROPE SLINGS

(In tons of 2000 pounds)

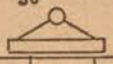
Rope Dia. Inches	SINGLE LEG					
	Vertical			Choker		
	A	B	C	A	B	C
6x19 CLASSIFICATION						
1/4	.55	.51	.49	.41	.38	.37
3/8	1.2	1.1	1.1	.91	.85	.80
1/2	2.1	2.0	1.8	1.6	1.5	1.4
5/8	3.3	3.1	2.8	2.5	2.3	2.1
3/4	4.8	4.4	3.9	3.6	3.3	2.9
7/8	6.4	5.9	5.1	4.8	4.5	3.9
1	8.4	7.7	6.7	6.3	5.8	5.0
1-1/8	10.	9.5	8.4	7.9	7.1	6.3
6x37 CLASSIFICATION						
1-1/4	12.	11.	9.8	9.2	8.3	7.4
1-3/8	15.	13.	12.	11.	10.	8.9
1-1/2	17.	16.	14.	13.	12.	10.
1-3/4	24.	21.	19.	18.	16.	14.
2	31.	28.	25.	23.	21.	18.

(A) - Socket or Swaged Terminal attachment.
(B) - Mechanical Sleeve attachment.
(C) - Hand Tucked Splice attachment.

TABLE G-5

RATED CAPACITIES FOR IMPROVED PLOW STEEL, FIBER CORE, WIRE ROPE SLINGS

(In tons of 2000 pounds)

Rope Dia. Inches	TWO - LEG BRIDLE OR BASKET HITCH											
	Vertical			60° 			45° 			30° 		
	A	B	C	A	B	C	A	B	C	A	B	C
6x19 CLASSIFICATION												
1/4	1.1	1.0	.99	.95	.88	.85	.77	.72	.70	.55	.51	.49
3/8	2.4	2.2	2.1	2.1	1.9	1.8	1.7	1.6	1.5	1.2	1.1	1.1
1/2	4.3	3.9	3.7	3.7	3.4	3.2	3.0	2.8	2.6	2.1	2.0	1.8
5/8	6.7	6.2	5.6	5.8	5.3	4.8	4.7	4.4	4.0	3.3	3.1	2.8
3/4	9.5	8.8	7.8	8.2	7.6	6.8	6.7	6.2	5.5	4.8	4.4	3.9
7/8	13.	12.	10.	11.	10.	8.9	9.1	8.4	7.3	6.4	5.9	5.1
1	17.	15.	13.	14.	13.	11.	12.	11.	9.4	8.4	7.7	6.7
1-1/8	21.	19.	17.	18.	16.	14.	15.	13.	12.	10.	9.5	8.4
6x37 CLASSIFICATION												
1-1/4	25.	22.	20.	21.	19.	17.	17.	16.	14.	12.	11.	9.8
1-3/8	30.	27.	24.	26.	23.	20.	21.	19.	17.	15.	13.	12.
1-1/2	35.	32.	28.	30.	27.	24.	25.	22.	20.	17.	16.	14.
1-3/4	48.	43.	38.	41.	37.	33.	34.	30.	27.	24.	21.	19.
2	62.	55.	49.	53.	48.	43.	43.	39.	35.	31.	28.	25.

(A) - Socket or Swaged Terminal attachment.
(B) - Mechanical Sleeve attachment.
(C) - Hand Tucked Splice attachment.

TABLE G-6

NUMBER AND SPACING OF U-BOLT WIRE ROPE CLIPS

Improved Plow Steel, Rope Diameter, Inches	Number of Clips		Minimum Spacing, Inches
	Drop Forged	Other Material	
1/2	3	4	3
5/8	3	4	3 3/4
3/4	4	5	4 1/2
7/8	4	5	5 1/4
1	4	6	6
1 1/8	5	6	6 3/4
1 1/4	5	7	7 1/2
1 3/8	6	7	8 1/4
1 1/2	6	8	9

TABLE G-7
WROUGHT IRON CHAIN
(In pounds or tons of 2000 pounds)

Nominal Size Chain Stock Inch.	Single Leg	60°	45°	30°
* 1/4	1060	1835	1500	1060
* 5/16	1655	2865	2340	1655
3/8	2385	2.1	3370	2385
* 7/16	3250	2.8	2.3	3250
1/2	2.1	3.7	3.0	2.1
* 9/16	2.7	4.6	3.8	2.7
5/8	3.3	5.7	4.7	3.3
3/4	4.8	8.3	6.7	4.8
7/8	6.5	11.2	9.2	6.5
1	8.5	14.7	12.0	8.5
1-1/8	10.0	17.3	14.2	10.0
1-1/4	12.4	21.4	17.5	12.4
1-3/8	15.0	25.9	21.1	15.0
1-1/2	17.8	30.8	25.2	17.8
1-5/8	20.9	36.2	29.5	20.9
1-3/4	24.2	42.0	34.3	24.2
1-7/8	27.6	47.9	39.1	27.6
2	31.6	54.8	44.8	31.6

* These sizes of wrought iron chain are no longer manufactured in the United States.

TABLE G-8
ALLOY STEEL CHAIN
(In tons of 2000 pounds)

Nominal Size Chain Stock Inch.	Single Leg	60°	45°	30°
1/4	1.62	2.82	2.27	1.62
3/8	3.30	5.70	4.65	3.30
1/2	5.62	9.75	7.90	5.62
5/8	8.25	14.25	11.65	8.25
3/4	11.5	19.9	16.2	11.5
7/8	14.3	24.9	20.3	14.3
1	19.3	33.5	27.3	19.8
1-1/8	22.2	38.5	31.5	22.2
1-1/4	28.7	49.7	40.5	28.7
1-3/8	33.5	58.0	47.0	33.5
1-1/2	39.7	68.5	56.0	39.7
1-5/8	42.5	73.5	59.5	42.5
1-3/4	47.0	81.5	62.0	47.0

TABLE G-9

MAXIMUM ALLOWABLE WEAR AT ANY POINT OF LINK

Chain size in inches	Maximum allowable wear in fraction of inches
1/4 (9/32)	3/64
5/16	5/64
1/2	7/64
5/8	9/64
3/4	5/32
7/8	11/64
1	3/16
1 1/8	7/32
1 1/4	1/4
1 3/8	9/32
1 1/2	5/16
1 3/4	11/32

TABLE G-10

SAFE WORKING LOADS FOR SHACKLES

[In tons of 2000 pounds]

Material size (inches)	Pin diameter (inches)	Safe working load
1/2	5/8	1.4
5/8	3/4	2.2
3/4	7/8	3.2
7/8	1	4.3
1	1 1/8	5.6
1 1/8	1 1/4	6.7
1 1/4	1 3/8	8.2
1 3/8	1 1/2	10.0
1 1/2	1 5/8	11.9
1 3/4	2	16.2
2	2 1/4	21.2

TABLE I-1

FILTER LENSES FOR PROTECTION AGAINST RADIANT ENERGY

Operation	Shade No.
Soldering	2
Torch Brazing	3 or 4
Light cutting, up to 1 inch	3 or 4
Medium cutting, 1–6 inches	4 or 5
Heavy cutting, over 6 inches	5 or 6
Light gas welding, up to ⅛ inch	4 or 5
Medium gas welding, ⅛–½ inch	5 or 6
Heavy gas welding, over ½ inch	6 or 8
Shielded Metal-Arc Welding 1/16- to 5/32-inch electrodes.	10
Inert-gas Metal-Arc Welding (Nonferrous) 1/16- to 5/32-inch electrodes.	11
Inert-gas Metal-Arc Welding (Ferrous) 1/16- to 5/32-inch electrodes.	12
Shielded Metal-Arc Welding:	
3/16- to ¼-inch electrodes	12
5/16- and ⅜-inch electrodes	14
Atomic Hydrogen Welding	10 to 14
Carbon Arc Welding	14

Subpart H—Tools and Related Equipment

§ 1501.71 General precautions.

(a) Hand lines, slings, or tackles of adequate strength shall be provided to handle tools, materials and equipment so that employees can have their hands free when using ship's ladders and access ladders. The use of hoses or electric cords for this purpose shall be prohibited.

(b) When air tools of the reciprocating type are not in use, the dies and tools shall be removed.

(c) All portable, power-driven circular saws shall be equipped with guards above and below the base plate or shoe. The upper guard shall cover the saw to the depth of the teeth, except for the minimum arc required to permit the base to be tilted for bevel cuts. The lower guard shall cover the saw to the depth of the teeth, except for the minimum arc required to allow proper retraction and contact with the work. When the tool is withdrawn from the work, the lower guard shall automatically and instantly return to the covering position.

(d) The moving parts of machinery on dry docks shall be guarded.

(e) Before use, pneumatic tools shall be secured to the extension hose or whip by some positive means to prevent the tool from becoming accidentally disconnected from the whip.

§ 1501.72 Portable electric tools.

(a) The frames of portable electric tools and appliances shall be grounded either through a third wire in the cable containing the circuit conductors or through a separate wire which is grounded at the source of the current.

(b) Grounding circuits, other than by means of the structure of the vessel on which the tool is being used, shall be checked to ensure that the circuit between the ground and the grounded power conductor has resistance which is low enough to permit sufficient current to flow to cause the fuse or circuit breaker to interrupt the current.

(c) Portable electric tools which are held in the hand shall be equipped with switches of a type which must be manually held in the closed position.

(d) Worn or frayed electric cables shall not be used.

(e) The employer shall notify the officer in charge of the vessel before using electric power tools operated with the vessel's current.

§ 1501.73 Hand tools.

(a) Employers shall not issue or permit the use of unsafe hand tools.

(b) Wrenches, including crescent, pipe, end and socket wrenches, shall not be used when jaws are sprung to the point that slippage occurs.

(c) Impact tools, such as drift pins, wedges, and chisels, shall be kept free of mushroomed heads.

(d) The wooden handles of tools shall be kept free of splinters or cracks and shall be kept tight in the tool.

§ 1501.74 Abrasive wheels.

(a) Floor stand and bench mounted abrasive wheels used for external grinding shall be provided with safety guards (protection hoods). The maximum angular exposure of the grinding wheel periphery and sides shall be not more than 90 degrees, except that when work requires contact with the wheel below the horizontal plane of the spindle, the angular exposure shall not exceed 125 degrees. In either case the exposure shall begin not more than 65 degrees above the horizontal plane of the spindle. Safety guards shall be strong enough to withstand the effect of a bursting wheel.

(b) Floor and bench mounted grinders shall be provided with work rests which are rigidly supported and readily adjustable. Such work rests shall be kept a distance not to exceed ⅛ inch from the surface of the wheel.

(c) All portable abrasive wheels used for external grinding shall be provided with safety guards (protection hoods) meeting the requirements of paragraph (e) of this section, except as follows:

(1) When the work location makes it impossible, in which case a wheel equipped with safety flanges as described in paragraph (f) of this section shall be used.

(2) When wheels 2 inches or less in diameter which are securely mounted on the end of a steel mandrel are used.

(d) Portable abrasive wheels used for internal grinding shall be provided with safety flanges (protection flanges) meeting the requirements of paragraph (f) of this section, except as follows:

(1) When wheels 2 inches or less in diameter which are securely mounted on the end of a steel mandrel are used.

(2) If the wheel is entirely within the work being ground while in use.

(e) When safety guards are required, they shall be so mounted as to maintain proper alignment with the wheel, and the guard and its fastenings shall be of sufficient strength to retain fragments of the wheel in case of accidental breakage. The maximum angular exposure of the grinding wheel periphery and sides shall not exceed 180 degrees.

(f) When safety flanges are required, they shall be used only with wheels designed to fit the flanges. Only safety flanges of a type and design and properly assembled so as to insure that the pieces of the wheel will be retained in case of accidental breakage shall be used.

(g) All abrasive wheels shall be closely inspected and ring tested before mounting to ensure that they are free from cracks or defects.

(h) Grinding wheels shall fit freely on the spindle and shall not be forced on. The spindle nut shall be tightened only enough to hold the wheel in place.

(i) The power supply shall be sufficient to maintain the rated spindle speed under all conditions of normal grinding. The rated maximum speed of the wheel shall not be exceeded.

(j) All employees using abrasive wheels shall be protected by eye protection equipment in accordance with the requirements of § 1501.81 (a) and (b), except when adequate eye protection is afforded by eye shields which are permanently attached to the bench or floor stand.

§ 1501.75 Powder actuated fastening tools.

(a) *General precautions.* (1) Powder actuated fastening tools shall be tested each day before loading to ensure that the safety devices are in proper working condition. Any tool found not to be in proper working order shall be immediately removed from service until repairs are made.

(2) Powder actuated fastening tools shall not be used in an explosive or flammable atmosphere.

(3) All tools shall be used with the type of shield or muzzle guard appropriate for a particular use.

(4) Fasteners shall not be driven into very hard or brittle materials, such as cast iron, glazed tile, surface hardened steel, glass block, live rock, face brick or hollow tile.

(5) Fasteners shall not be driven into soft materials unless such materials are backed by a substance that will prevent the pin or fastener from passing completely through and creating a flying missile hazard on the opposite side.

(6) Unless a special guard, fixture or jig is used, fasteners shall not be driven directly into materials such as brick or concrete within 3 inches of the unsupported edge or corner, or into steel surfaces within ½ inch of the unsupported edge or corner. When fastening other material, such as 2 x 4 inch lumber to a concrete surface, fasteners of greater than 7/32 inch shank diameter shall not be used and fasteners shall not be driven within 2 inches of the unsupported edge or corner of the work surface.

(7) Fasteners shall not be driven through existing holes unless a positive guide is used to secure accurate alignment.

(8) No attempt shall be made to drive a fastener into a spalled area caused by an unsatisfactory fastening.

(9) Employees using powder actuated fastening tools shall be protected by eye protection equipment in accordance with the requirements of § 1501.81 (a) and (b).

(b) *Instruction of operators.* Before employees are permitted to use powder actuated tools, they shall have been

thoroughly instructed by a competent person with respect to the requirements of paragraph (a) of this section and the safe use of such tools as follows:

(1) Before using a tool, the operator shall inspect it to determine that it is clean, that all moving parts operate freely and that the barrel is free from obstructions.

(2) When a tool develops a defect during use, the operator shall immediately cease to use it and shall notify his supervisor.

(3) Tools shall not be loaded until just prior to the intended firing time and the tool shall not be left unattended while loaded.

(4) The tool, whether loaded or empty, shall not be pointed at any person, and hands shall be kept clear of the open barrel end.

(5) In case of a misfire, the operator shall hold the tool in the operating position for at least 15 seconds and shall continue to hold the muzzle against the work surface during disassembly or opening of the tool and removal of the powder load.

(6) Neither tools nor powder charges shall be left unattended in places where they would be available to unauthorized persons.

Subpart I—Personal Protective Equipment

§ 1501.81 Eye protection.

(a) *General precautions.* (1) All eye protection equipment required by these regulations shall meet the specifications prescribed by the American Standard Safety Code for Head, Eye and Respiratory Protection, Z2.1.

(2) Eye protection equipment shall be maintained in good condition.

(3) Eye protection equipment which has previously been used shall be cleaned and disinfected before it is issued by the employer to another employee.

(4) Employees who wear corrective spectacles while engaged in eye hazardous work shall be protected by eye protection equipment of a type which can be worn over personal spectacles, except that glasses with prescription ground safety lenses may be worn in lieu of cover goggles when such glasses provide suitable protection against the hazard involved.

(b) *Protection against impact.* (1) In any operations such as chipping, caulking, drilling, riveting, grinding, and pouring babbitt metal, in which the eye hazard of flying particles, molten metal, or liquid chemical exists, employees shall be protected by suitable face shields or goggles meeting the requirements of paragraph (a) of this section.

(c) *Protection against radiant energy.* (1) In any operation in which the eye hazard of injurious light rays or other radiant energy exists, depending upon the intensity of the radiation to which employees are exposed, they shall be protected by spectacles, cup goggles, helmets or hand shields equipped with filter lenses in accordance with the requirements of paragraphs (a) and (c) (2) of this section.

(2) Filter lenses shall be of a shade number appropriate to the type of work to be performed as indicated in Table I–1 in § 1501.68, except that variations of one or two shade numbers are permissible to suit individual preferences.

(3) If filter lenses are used in the goggles worn under the helmet, the shade number of the lens in the helmet may be reduced so that the sum of the shade numbers of the two lenses will equal the value shown in Table I–1 in § 1501.68.

§ 1501.82 Respiratory protection.

(a) *General.* (1) All respiratory protective equipment required by these regulations shall carry the U.S. Bureau of Mines approval for the use for which it is intended. Respiratory protective equipment shall be used only for the purpose intended and no modifications of the equipment shall be made.

(2) Respiratory protective equipment shall be inspected regularly and maintained in good condition. Gas mask canisters and chemical cartridges shall be replaced as necessary so as to provide complete protection. Mechanical filters shall be cleaned or replaced as necessary so as to avoid undue resistance to breathing.

(3) Respiratory protective equipment which has been previously used shall be cleaned and disinfected before it is issued by the employer to another employee. Emergency rescue equipment shall be cleaned and disinfected immediately after each use.

(4) Employees required to use respiratory protective equipment approved for use in atmospheres immediately dangerous to life shall be thoroughly trained in its use. Employees required to use other types of respiratory protective equipment shall be instructed in the use and limitations of such equipment.

(5) When an air line respirator is used, the air line shall be fitted with a pressure regulating valve and a filter which will remove oil, water, and rust particles. The air intake shall be from a source which is free from all contaminants, such as the exhaust from internal combustion engines.

(6) In all cases when an employee is stationed outside a compartment, tank or space as a tender or safety man for men working inside in an atmosphere immediately dangerous to life, the tender shall have immediately available for emergency use respiratory protective equipment equivalent to that required for the men in the compartment. When a tender is stationed outside a compartment for men working inside in an atmosphere not immediately dangerous to life, the tender shall wear respiratory protective equipment equivalent to that required for the men in the compartment if he is exposed for prolonged periods to the same concentration of atmospheric contaminants.

(b) *Protection in atmospheres immediately dangerous to life.* (1) Atmospheres immediately dangerous to life are those which contain less than 16.5 percent oxygen, or which by reason of the high toxicity of the contaminant, as in fumigation, or high concentration of the contaminant, as with carbon dioxide, would endanger the life of a person breathing them for even a short period of time.

(2) In atmospheres immediately dangerous to life the only approved types of respiratory protective equipment are the following:

(i) Self-contained breathing apparatus, in which the wearer carries with him a supply of oxygen, air, or an oxygen generating material.

(ii) Hose mask with blower, in which a hand or motor operated blower supplies air at high volume and low pressure through a large diameter hose through which the wearer can draw air in case the blower fails.

(iii) If there is known to be more than 16 percent oxygen and less than 2 percent gas by volume, a gas mask equipped with a canister approved for the particular type gas involved.

NOTE: A gas mask offers absolutely no protection in an atmosphere deficient in oxygen.

(3) Work in atmospheres immediately dangerous to life shall be performed only in an emergency, as when rescuing a man who has been overcome or when shutting off a source of contamination that cannot otherwise be controlled. When an employee enters such an atmosphere he shall be provided with and use an adequate, attended life line.

(4) In the vicinity of each vessel in which there is a danger of employees being exposed to an atmosphere immediately dangerous to life the employer shall have on hand and ready for use respiratory protective equipment approved for such use. When such equipment is required, one or more persons shall be thoroughly trained in the use of the equipment.

(c) *Protection against gaseous contaminants not immediately dangerous to life.* (1) Gaseous contaminants not immediately dangerous to life are gases present in concentrations that could be breathed for a short period without endangering the life of a person breathing them, but which might produce discomfort and possible injury after a prolonged single exposure or repeated short exposures.

(2) When employees are exposed to a gaseous contaminated atmosphere not immediately dangerous to life, they shall be protected by respiratory protective equipment approved for use in the type and concentration of the gaseous contaminant as follows:

(i) In high or unknown concentrations, a hose mask or an air line respirator. The use of either a hose mask or an air line respirator in lower concentrations is permissible.

(ii) In concentrations of ammonia of less than 3 percent, or of other gases less than 2 percent, by volume, a canister type gas mask equipped with the proper type of canister. Different canisters are approved for specific use against the following gases or groups of gases: acid gases, hydrocyanic acid gas, chlorine gas, organic vapors, ammonia gas, carbon monoxide, or combination of the above.

(iii) In low concentrations (less than 0.1 percent by volume), a chemical cartridge respirator equipped with the type of cartridge approved for use against the particular gases or groups of gases listed in subdivision (ii) of this subparagraph.

(d) *Protection against particulate contaminants not immediately dangerous to life.* (1) When employees are exposed to unsafe concentrations of particulate contaminants, such as dusts and fumes, mists and fogs or combinations of solids and liquids, they shall be protected by either air line or filter respirators, except as otherwise provided in the regulations of this part.

(2) Filter respirators shall be equipped with the proper type of filter. Different filters are approved for specific protection against groups of contaminants, as follows:

(i) Pneumoconiosis-producing dust and nuisance dust filters which provide respiratory protection against pneumoconiosis-producing dusts, such as aluminum, cellulose, cement, charcoal, coal, coke, flour, gypsum, iron ore, limestone and wood.

(ii) Toxic dust filters which provide respiratory protection against toxic dusts that are not significantly more toxic than lead, such as arsenic, cadmium, chromium, lead, manganese, selenium, vanadium, and their compounds.

(iii) Mist filters which provide respiratory protection against pneumoconiosis-producing mists, chromic acid mists, and nuisance mists.

(iv) Fume filters which provide respiratory protection against fumes (solid dispersoids or particulate matter formed by the condensation of vapors, such as those from heated metals and other substances).

(v) Filters which provide respiratory protection against combinations of two or more of the contaminants described in subdivisions (i) through (iv) of this subparagraph.

(e) *Protection against combinations of gaseous and particulate contaminants not immediately dangerous to life.* (1) When employees are exposed to combinations of gaseous and particulate contaminants not immediately dangerous to life, as in spray painting, they shall be protected by respiratory protective equipment approved for use in the type and concentration of the contaminants, as follows:

(i) In high or unknown concentrations, a hose mask or an air line respirator. The use of either a hose mask or an air line respirator is permissible in lower concentrations.

(ii) In concentrations of gaseous contaminants of less than 2 percent by volume, a canister type gas mask with a combination canister approved for the particular type of gaseous contaminant as specified in paragraph (c)(2) of this section and a filter for the particular type of particulate contaminant as specified in paragraph (d)(1) of this section.

(iii) In low concentrations of gaseous contaminants (less than 0.1 percent by volume) a respirator equipped with the type of cartridge and filter as specified in subdivision (ii) of this subparagraph.

§ 1501.83 Head, foot and body protection.

(a) When employees are working in areas where there is danger of falling objects they shall be protected by protective hats.

(b) Protective hats shall meet the specifications contained in the American Standard Safety Code for Head, Eye and Respiratory Protection, Z-2.1. Hats without dielectric strength shall not be used where there is the possibility of contact with electric conductors.

(c) Protective hats which have been previously worn shall be cleaned and disinfected before they are issued by the employer to another employee.

(d) The employer shall arrange through means, such as vendors or local stores, or otherwise, to make safety shoes readily available to all employees, and shall encourage their use. Metal toe caps from which the covering has been worn shall be insulated when employees are working on exposed energized circuits of the vessel's electrical system.

(e) Employees shall not be permitted to wear excessively greasy clothing when performing hot work operations.

(f) Employees shall be protected by suitable gloves when engaged in operations hazardous to their hands.

§ 1501.84 Life saving equipment.

(a) *Buoyant working vests.* (1) When employees are working from small boats or floats, near the unguarded edges of decks, or over water on scaffolds without guard rails, they shall be protected by U.S. Coast Guard approved buoyant working vests.

(b) *Safety belts and life lines.* (1) When employees are working aloft, or over a solid surface on staging more than 5 feet high without guard rails, they shall be protected by safety belts equipped with life lines which are secured with a minimum amount of slack to a fixed structure.

(2) When employees are working in atmospheres immediately dangerous to life, they shall be protected by a safety belt and an adequate, attended life line.

(3) Prior to each use, belts and life lines shall be inspected for dry rot, chemical damage or other defects which may affect their strength. Defective belts and life lines shall not be used.

(4) When employees are working in any location requiring a safety belt and a life line, as required in paragraph (b)(1) or (2) of this section, care shall be exercised to ensure that the life line is not cut, pinched or led over a sharp edge. In hot work operations or those involving the use of acids or caustics, the line shall be kept clear to avoid its being burned or weakened. In order to keep the life line continuously attached with a minimum of slack to a fixed structure the attachment point of the life line shall be appropriately changed as the work progresses.

(c) *Life rings and ladders.* (1) At least three 30 inch Coast Guard approved life rings with lines attached shall be kept in easily visible and readily accessible places aboard each vessel afloat on which work is being performed. Life rings shall be located, one forward, one aft, and one on the gangway, except on vessels under 200 feet in length, in which case one at the gangway will be sufficient.

(2) At least one life ring with a line attached shall be located on each staging float alongside a vessel on which work is being performed.

(3) At least 90 feet of line shall be attached to each life ring. Life rings and lines shall be maintained in good condition.

(4) In the vicinity of each vessel on which employees are working over water or close to unguarded deck edges there shall be at least one portable or permanent ladder of sufficient length to assist employees to reach safety in the event that they fall into the water.

Subpart J—Ship's Machinery and Piping Systems

§ 1501.91 Ship's boilers.

(a) Before work is performed in the fire, steam, or water spaces of boilers, the employer shall ensure that the following steps are taken:

(1) The isolation and shut-off valves connecting the dead boilers with the live boilers shall be secured, blanked, and tagged indicating that employees are working in the boilers. This tag shall not be removed nor the valves unblanked until it is determined that this may be done without creating a hazard to the employees working in the boilers, or until the work is completed.

(2) Drain connections to atmosphere on all of the dead interconnecting systems shall be opened.

(3) A warning sign calling attention to the fact that employees are working in the boilers shall be hung in a conspicuous location in the engine room. This sign shall not be removed until it is determined that the work is completed and all employees are out of the boilers.

§ 1501.92 Ship's piping systems.

(a) Before work is performed on a valve, fitting, or section of piping in a piping system that has carried a high temperature medium, the employer shall ensure that the following steps are taken:

(1) The isolation and shut-off valves connecting the dead system with a live system or systems, shall be secured, blanked, and tagged indicating employees are working on the system. This tag shall not be removed nor the valves unblanked until it is determined that this may be done without creating a hazard to the employees working on the system, or until the work on the system is completed.

(2) Drain connections to atmosphere on all of the dead interconnecting systems shall be opened.

§ 1501.93 Ship's propulsion machinery.

(a) Before work is performed on the main engine, reduction gear, or connecting accessories, the employer shall ensure that the following steps are taken:

(1) The jacking gear shall be engaged to prevent the main engine from turning over. A sign shall be posted at the throttle indicating that the jacking gear is engaged. This sign shall not be removed until the jacking gear can be safely disengaged.

(2) If the jacking gear is steam driven, the stop valves to the jacking gear shall be secured, locked, and tagged indicating that employees are working on the main engine.

(3) If the jacking gear is electrically driven, the circuit controlling the jacking gear shall be deenergized by tripping the circuit breaker, opening the switch or removing the fuse, whichever is appropriate. The breaker, switch, or fuse location shall be tagged indicating that employees are working on the main engine.

(b) Before the jacking engine is operated, the following precautions shall be taken:

(1) A check shall be made to ensure that all employees, equipment, and tools are clear of the engine, reduction gear, and its connecting accessories.

(2) A check shall be made to ensure that all employees, equipment and tools are free of the propeller.

(c) Before work is started on or in the immediate vicinity of the propeller, a warning sign calling attention to the fact that employees are working in that area shall be hung in a conspicuous location in the engine room. This sign shall not be removed until it is determined that the work is completed and all employees are free of the propeller.

(d) Before the main engine is turned over (e.g., when warming up before departure or testing after an overhaul) a check shall be made to ensure that all employees, equipment, and tools are free of the propeller.

§ 1501.94 Ship's deck machinery.

(a) Before work is performed on the anchor windlass or any of its attached accessories, the employer shall ensure that the following steps are taken:

(1) The devil claws shall be made fast to the anchor chains.

(2) The riding pawls shall be in the engaged position.

(3) In the absence of devil claws and riding pawls, the anchor chains shall be secured to a suitable fixed structure of the vessel.

Subpart K—Portable, Unfired Pressure Vessels, Drums and Containers, Other Than Ship's Equipment

§ 1501.101 Portable air receivers and other unfired pressure vessels.

(a) Portable, unfired pressure vessels, built after the effective date of this regulation, shall be marked and reported indicating that they have been designed and constructed to meet the standards of the American Society of Mechanical Engineers Boiler and Pressure Vessel Code, Section VIII, Rules for Construction of Unfired Pressure Vessels, 1963. They shall be subjected to a hydrostatic pressure test of one and one-half times the working pressure of the vessels.

(b) Portable, unfired pressure vessels, not built to the code requirements of paragraph (a) of this section, and built prior to the effective date of this regulation, shall be examined quarterly by a competent person. They shall be subjected yearly to a hydrostatic pressure test of one and one-half times the working pressure of the vessels.

(c) The relief valves on the portable, unfired pressure vessels in paragraphs (a) and (b) of this section shall be set to the safe working pressure of the vessels, or set to the lowest safe working pressure of the systems, whichever is lower.

(d) A record of such examinations and tests made in compliance with the requirements of paragraphs (a) and (b) of this section shall be maintained.

§ 1501.102 Drums and containers.

(a) Shipping drums and containers shall not be pressurized to remove their contents.

(b) A temporarily assembled pressurized piping system conveying hazardous liquids or gases shall be provided with a relief valve and by-pass to prevent rupture of the system and the escape of such hazardous liquids or gases.

(c) Pressure vessels, drums and containers containing toxic or flammable liquids or gases shall not be stored or used where they are subject to open flame, hot metal, or other sources of artificial heat.

(d) Unless pressure vessels, drums and containers of 30 gallon capacity or over containing flammable or toxic liquids or gases are placed in an out-of-the-way area where they will not be subject to physical injury from an outside source, barriers or guards shall be erected to protect them from such physical injury.

(e) Containers of 55 gallons or more capacity containing flammable or toxic liquid shall be surrounded by dikes or pans which enclose a volume equal to at least 25 percent of the total volume of the containers.

(f) Fire extinguishers adequate in number and suitable for the hazard shall be provided. These extinguishers shall be located in the immediate area where pressure vessels, drums and containers containing flammable liquids or gases are stored or in use. Such extinguishers shall be ready for use at all times.

Subpart L—Electrical Machinery

§ 1501.111 Electrical circuits and distribution boards.

(a) Before an employee is permitted to work on an electrical circuit, except when the circuit must remain energized for testing and adjusting, the circuit shall be deenergized by an authorized employee by opening the circuit breaker, opening the switch, or removing the fuse, whichever method is appropriate. The circuit breaker, switch or fuse location shall be tagged to indicate that an employee is working on the circuit. Such tags shall not be removed nor the circuit energized except by the authorized employee who placed the tag or by another employee authorized by the employer.

(b) When work is performed immediately adjacent to an open-front energized board or in back of an energized board, the board shall be covered or some other equal means shall be used to prevent contact with any of the energized parts.

APPENDIX I

THRESHOLD LIMIT VALUES FOR 1963

These values should be used as guides in the control of health hazards and should not be regarded as fine lines between safe and dangerous concentrations. They represent conditions under which it is believed that nearly all workers may be repeatedly exposed, day after day, without adverse effect. The values listed refer to time-weighted average concentrations for a normal workday. The amount by which these figures may be exceeded for short periods without injury to health depends upon a number of factors such as the nature of the contaminant, whether very high concentrations even for short periods produce acute poisoning, whether the effects are cumulative, the frequency with which high concentrations occur, and the duration of such periods. All must be taken into consideration in arriving at a decision as to whether a hazardous situation exists. Because it has been recognized that the threshold limits of certain acutely-acting substances may not provide a safety factor comparable to that of chronically-acting substances for which a time-weighted average applies, a "C" designation or "ceiling" has been affixed to such values indicating that the Threshold Limit Value should not be exceeded. The bases for the "C" listing is given in appendix C.

Special consideration should be given to the application of these values in assessing the health hazards which may be associated with exposure to mixtures of two or more substances. A brief discussion of basic considerations involved in developing threshold limit values for mixtures, and methods for their development, amplified by specific examples are given in appendix B.

Threshold limits are based on the best available information from industrial experience, from experimental studies, and, when possible, from a combination of the two. These values are based on various criteria of toxic effects or on marked discomfort; thus, they should not be used as a common denominator of toxicity, nor should they be considered as the sole criterion in proving or disproving diagnosis of suspected occupational disease.

These limits are intended for use in the field of industrial hygiene and should be interpreted and applied only by persons trained in this field. They are not intended for use, or for modification for use, (1) as a relative index of toxicity, by making a ratio of two limits, or (2) in the evaluation or control of community air polution or air pollution nuisances, or (3) in estimating the toxic potential of continuous uninterrupted exposures.

RECOMMENDED VALUES (IN ALPHABETICAL ORDER)

	Substance	*ppm**	*Mg/M³***
	Acetaldehyde	200	360
	Acetic acid	10	25
	Acetic anhydride	5	20
	Acetone	1,000	2,400
	Acetonitrile	40	70
	Acetylene tetrabromide	1	14
†	Acrolein	0.1	0.25
	Acrylonitrile—Skin	20	45
	Aldrin (1,2,3,4,10,10-hexachloro-1,4,4a,5,8,8a-hexahydro-1,4,5,8-dimethano-naphthalene)—Skin	—	0.25
†	Allyl alcohol—Skin	2	5
	Allyl chloride	1	3
C	Allyl glycidyl ether (AGE)	10	45
	Allyl propyl disulfide	2	12
†	Ammonia	50	35
	Ammonium sulfamate (Ammate)	—	15
†	Amyl acetate	100	525
	Amyl alcohol (isoamyl alcohol)	100	360
	Aniline—Skin	5	19
	Antimony	—	0.5
	ANTU (alpha naphthyl thiourea)	—	0.3
	Arsenic	—	0.5
	Arsine	0.05	0.2
	Barium (soluble compounds)	—	0.5

†1963 Revision.

*Parts of vapor or gas per million parts of air by volume at 25° C and 760 mm. Hg pressure.

**Approximate milligrams of particulate per cubic meter of air.

RECOMMENDED VALUES (IN ALPHABETICAL ORDER)—continued

	Substance	ppm*	Mg/M³**
C	Benzene (benzol)—Skin	25	80
	Benzidine	—	A[1]
	Benzyl chloride	1	5
	Beryllium	—	0.002
	Boron oxide	—	15
C	Boron trifluoride	1	3
	Bromine	0.1	0.7
	Butadiene (1,3-butadiene)	1,000	2,200
	2-Butanone (methyl ethyl ketone)	200	590
	2-Butoxy ethanol (Butyl Cellosolve)	50	240
	Butyl acetate (*n*-butyl acetate)	200	950
	Butyl alcohol	100	300
	tert. Butyl Alcohol	100	300
C	Butylamine	5	15
	n-Butylglycidylether (BGE)	50	270
	Butyl mercaptan	10	35
	p-tert. Butyltoluene	10	60
	Cadmium oxide fume	—	0.1
	Calcium arsenate	—	1
	Carbon dioxide	5,000	9,000
	Carbon disulfide—Skin	20	60
	Carbon monoxide	100	110
	Carbon tetrachloride—Skin	10	65
	Chlordane (1,2,4,5,6,7,8,8-octachloro-3a,4,7,7a-tetrahydro-4,7-methanoindene)	—	0.5
	Chlorinated camphene, 60%	—	0.5
	Chlorinated diphenyl oxide	—	0.5
	Chlorine	1	3
	Chlorine dioxide	0.1	0.3
C	Chlorine trifluoride	0.1	0.4
C	Chloroacetaldehyde	1	3
	Chlorobenzene (monochlorobenzene)	75	350
	Chlorobromomethane	200	1,050
	Chlorodiphenyl (42% Chlorine)—Skin	—	1
	Chlorodiphenyl (54% chlorine)—Skin	—	0.5
C	Chloroform (trichloromethane)	50	240
	1-Chloro-1-nitropropane	20	100
	Chloropicrin	0.1	0.7
	Chloroprene (2-chloro-1,3-butadiene)	25	90
	Chromic acid and chromates (as CrO_3)	—	0.1
	Cobalt	—	0.5
	Crag (R) herbicide (sodium) 2-[2,4-dichlorophenoxy] ethanol hydrogen sulfate)	—	15
	Cresol (all isomers)—Skin	5	22
	Cyanide (as CN)—Skin	—	5
	Cyclohexane	400	1,400
	Cyclohexanol	50	200
	Cyclohexanone	50	200
	Cyclohexene	400	1,350
	2,4-D (2,4-dichlorophenoxyacetic acid)	—	10
	DDT (2,2-bis [*p*-chlorophenyl]-1,1,1-trichloroethane)—Skin	—	1
	Decaborane—Skin	0.05	0.3
	Diacetone alcohol (4-hydroxy-4-methyl-2-pentanone)	50	240
	Diborane	0.1	0.1
	1,2-Dibromoethane (Ethylene dibromide)	25	190
	o-Dichlorobenzene	50	300
	p-Dichlorobenzene	75	450
	Dichlorodifluoromethane	1,000	4,950
	1,1-Dichloroethane	100	400
	1,2-Dichloroethane (ethylene dichloride)	50	200
	1,2-Dichloroethylene	200	790
C	Dichloroethyl ether	15	90
	Dichloromonofluoromethane	1,000	4,200
C	1,1-Dichloro-1-nitroethane	10	60
	Dichlorotetrafluoroethane	1,000	7,000
	Dieldrin (1,2,3,4,10,10-hexachloro-6, 7-epoxy-1, 4, 4a, 5, 6, 7, 8, 8a-octahydro-1, 4, 5, 8,-dimethanonaphthalene)—Skin	—	0.25
	Diethylamine	25	75
	Difluorodibromomethane	100	860
†C	Diglycidyl ether (DGE)	0.5	2.8
	Diisobutyl ketone	50	290
	Dimethyl acetamide—Skin	10	35
	Dimethylaniline (N-dimethylaniline)—Skin	5	25
	Dimethylformamide	20	60
	1,1-Dimethylhydrazine—Skin	0.5	1
	Dimethylsulfate—Skin	1	5
	Dinitrobenzene—Skin	—	1
	Dinitrotoluene—Skin	—	1.5
	Dinitro-o-cresol—Skin	—	0.2
	Dioxane (diethylene dioxide)	100	360
	Dipropylene glycol methyl ether	100	600

†1963 Revision.

*Parts of vapor or gas per million parts of air by volume at 25° C and 760 mm. Hg pressure.

**Approximate milligrams of particulate per cubic meter of air.

A Numbers, See Appendix A.

RECOMMENDED VALUES (IN ALPHABETICAL ORDER)—continued

	Substance	ppm*	Mg/M³**
	EPN (O-ethyl O-*p*-nitrophenyl thionobenzenephosphonate)—Skin	—	0.5
	Ethyl acetate	400	1,400
	Ethyl acrylate—Skin	25	100
	Ethyl alcohol (ethanol)	1,000	1,900
	Ethylamine	25	45
C	Ethylbenzene	200	870
	Ethyl bromide	200	890
	Ethyl chloride	1,000	2,600
	Ethyl ether	400	1,200
	Ethyl formate	100	300
†C	Ethyl mercaptan	20	52
	Ethyl silicate	100	850
	Ethylene chlorohydrin—Skin	5	16
	Ethylenediamine	10	30
	Ethylene glycol dinitrate (Combined EGDN+NG)—Skin	0.2	1.2
	Ethylene imine—Skin	5	9
	Ethylene oxide	50	90
	2-Ethoxyethanol (Cellosolve)	200	740
	2-Ethoxyethylacetate (Cellosolve Acetate)	100	540
	Ferbam (ferric dimethyl dithiocarbamate)	—	15
	Ferrovanadium dust	—	1
	Fluoride (as F)	—	2.5
	Fluorine	0.1	0.2
	Fluorotrichloromethane	1,000	5,600
C	Formaldehyde	5	6
	Furfural	5	20
	Furfuryl alcohol	50	200
	Gasoline	500	2,000
	Glycidol (2,3-Epoxy-1-propanol)	50	150
	Heptane (*n*-heptane)	500	2,000
	Hexane (*n*-hexane)	500	1,800
	Hexanone (methyl butyl ketone)	100	410
†	sec-Hexyl acetate	50	295
	Hexone (methyl isobutyl ketone)	100	410
C	Hydrazine—Skin	1	1.3
	Hydrogen bromide	3	10
C	Hydrogen chloride	5	7
	Hydrogen cyanide—Skin	10	11
	Hydrogen fluoride	3	2
	Hydrogen peroxide, 90%	1	1.4
	Hydrogen selenide	0.05	0.2
C	Hydrogen sulfide	20	30
	Hydroquinone	—	2
C	Iodine	0.1	1
	Iron oxide fume	—	15
	Isophorone	25	140
	Isopropylamine	5	12
	Isopropyl glycidyl ether (IGE)	50	240
	Ketene	0.5	0.9
	Lead	—	0.2
	Lead arsenate	—	0.15
	Lindane (hexachlorocyclohexane, gamma isomer)	—	0.5
	Lithium hydride	—	0.025
	Magnesium oxide fume	—	15
	Malathion (*o,o*-dimethyl dithiophosphate of diethyl mercaptosuccinate)—Skin	—	15
C	Manganese	—	5
	Mercury—Skin	—	0.1
	Mercury (organic compounds)—Skin	—	0.01
	Mesityl oxide	25	100
	Methoxychlor (2,2-di-*p*-methoxyphenyl-1,1,1-trichloroethane)	—	15
	Methyl acetate	200	610
	Methyl acetylene	1,000	1,650
	Methyl acrylate—Skin	10	35
	Methylal (dimethoxymethane)	1,000	3,100
	Methyl alcohol (methanol)	200	260
C	Methyl bromide—Skin	20	80
	Methyl cellosolve (2-methoxyethanol)—Skin	25	80
	Methyl cellosolve acetate (ethylene glycol monomethyl ether acetate)	25	120
C	Methyl chloride	100	210
†	Methyl chloroform (1,1,1-trichloroethane)	350	1,900
	Methylcyclohexane	500	2,000
	Methylcyclohexanol	100	470
	Methylcyclohexanone	100	460
	Methyl formate	100	250
	Methyl isobutyl carbinol (methyl amyl alcohol)	25	100
†C	Methyl mercaptan	20	40
	α Methyl styrene	100	480
	Methylene chloride (dichloromethane)	500	1,750
	Monomethyl aniline—Skin	2	9
	Molybdenum (soluble compounds)	—	5
	(insoluble compounds)	—	15
	Naphtha (coal tar)	200	800
	Naphtha (petroleum)	500	2,000
	β-Naphthylamine	—	A[2]
	Nickel carbonyl	0.001	0.007
	Nicotine—Skin	—	0.5
	Nitric acid	10	25
	p-Nitroaniline—Skin	1	6

RECOMMENDED VALUES (IN ALPHABETICAL ORDER)—continued

	Substance	ppm*	Mg/M³**
	Nitrobenzene—Skin	1	5
	Nitroethane	100	310
C	Nitrogen dioxide	5	9
C	Nitroglycerin (combined EGDN+NG)—Skin	0.2	2
	Nitromethane	100	250
	1-Nitropropane	25	90
	2-Nitropropane	25	90
	N-Nitrosodimethylamine (Dimethylnitrosamine)—Skin	A[3]	—
	Nitrotoluene—Skin	5	30
	Octane	500	2,350
	Osmium tetroxide	—	0.002
	Ozone	0.1	0.2
	Parathion (O, O, diethyl-O-*p*-nitrophenyl thiophosphate)—Skin	—	0.1
	Pentaborane	0.005	0.01
	Pentachloronaphthalene—Skin	—	0.5
	Pentachlorophenol—Skin	—	0.5
	Pentanone (methyl propyl ketone)	200	700
	Pentane	1,000	2,950
	Perchloroethylene (tetrachloroethylene)	100	670
	Perchloromethyl mercaptan	0.1	0.8
	Perchloryl fluoride	3	13.5
	Phenol—Skin	5	19
	Phenyl glycidyl ether (PGE)	50	310
	Phenylhydrazine—Skin	5	22
	Phosdrin (2-carbomethoxy-1-methyl vinyl dimethyl phosphate)	—	0.1
	Phosgene (carbonyl chloride)	1	4
†	Phosphine	0.3	0.4
	Phosphoric acid	—	1
	Phosphorus (yellow)	—	0.1
	Phosphorus pentachloride	—	1
	Phosphorus pentasulfide	—	1
	Phosphorus trichloride	0.5	3
	Picric acid—Skin	—	0.1
	Platinum (Soluble Salts)	—	0.002
	Propyl acetate	200	840
	Propyl alcohol (isopropyl alcohol)	400	980
	Propyl ether (isopropyl ether)	500	2,100
	n-Propyl nitrate	25	110
	Propylene dichloride (1,2-dichloropropane)	75	350
	Propylene imine—Skin	25	60
	Propylene oxide	100	240
	Pyrethrum	—	5
	Pyridine	5	15
	Quinone	0.1	0.4
	Rotenone (commercial)	—	5
	Selenium compounds (as Se)	—	0.1
	Sodium fluoroacetate (1080)—Skin	—	0.05
	Sodium hydroxide	—	2
	Stibine	0.1	0.5
	Stoddard solvent	500	2,900
	Strychnine	—	0.15
	Styrene monomer (phenylethylene)	100	420
	Sulfur dioxide	5	13
	Sulfur hexafluoride	1,000	6,000
	Sulfuric acid	—	1
	Sulfur monochloride	1	6
	Sulfur pentafluoride	0.025	0.25
	Sulfuryl fluoride	5	20
	2,4,5T (2,4,5-Trichlorophenoxyacetic acid)	—	10
	TEDP (tetraethyl dithionopyrophosphate)—Skin	—	0.2
	Teflon (R) decomposition products	—	A[4]
	TEPP (tetraethyl pyrophosphate)—Skin	—	0.05
	Tellurium	—	0.1
	1,1,2,2-Tetrachloroethane—Skin	5	35
	Tetrahydrofuran	200	590
	Tetranitromethane	1	8
	Tetryl (2,4,6-trinitrophenylmethylnitramine)—Skin	—	1.5
	Thallium (soluble compounds)—Skin	—	0.1
	Thiram (tetramethyl thiuram disulfide)	—	5
	Titanium dioxide	—	15
C	Toluene (toluol)	200	750
	o-Toluidine—Skin	5	22
C	Tolylene-2,4-diisocyanate	0.02	0.14
	Trichloroethylene	100	520
	Trichloronaphthalene—Skin	—	5
	1,2,3-Trichloropropane	50	300
	1,1,2-Trichloro 1,2,2-trifluoroethane	1,000	7,600
	Triethylamine	25	100
	Trifluoromonobromomethane	1,000	6,100
	Trinitrotoluene—Skin	—	1.5
	Triorthocresyl phosphate	—	0.1
	Triphenyl phosphate	—	3
	Turpentine	100	560
	Uranium (soluble compounds)	—	0.05
	(insoluble compounds)	—	0.25
	Vanadium C (V_2O_5 dust)	—	0.5
	(V_2O_5 fume)	—	0.1

RECOMMENDED VALUES (IN ALPHABETICAL ORDER)—continued

Substance	ppm*	Mg/M³**
C Vinyl chloride (chloroethylene)	500	1,300
Vinyl toluene	100	480
Warfarin (3 [acetonylbenzyl]-4-hydroxycoumarin)	—	0.1
Yttrium	—	5
C Xylene (xylol)	200	870
Xylidene—Skin	5	25
Zinc oxide fume	—	5
Zirconium compounds (as Zr)	—	5

NOTE: The word "Skin" following a substance indicates that the substance can penetrate the skin to contribute to the exposure and threshold limit value should be reduced accordingly.

Radioactivity: For permissible concentrations of radio-isotopes in air, see U.S. Department of Commerce' National Bureau of Standards, Handbook 69, "Maximum Permissible Body Burdens and Maximum Permissible Concentrations of Radionuclides in Air and in Water for Occupational Exposure," June 5, 1959. Also, see U.S. Department of Commerce, National Bureau of Standards, Handbook 59, "Permissible Dose from External Sources of Ionizing Radiation," September 24, 1954, and addendum of April 15, 1958.

MINERAL DUSTS

Substance	m.p.p.c.f.§
SILICA	
Crystalline	
Quartz, Threshold Limit calculated from the formula	250
Cristobalite, Threshold Limit calculated from the formula	$\%SiO_2^{\ddagger}+5$
Amorphous, including natural diatomaceous earth	20
SILICATES (less than 1% crystalline silica)	
Asbestos	5
Mica	20
Soapstone	20
Talc	20
Portland Cement	50
Miscellaneous (less than 1% crystalline silica)	50

Conversion factors
mppcf×35.3=million particles per cubic meter
=particles per c.c.

§Millions of particles per cubic foot of air, based on impinger samples counted by light-field technics.
‡The percentage of crystalline silica in the formula is the amount determined from air-borne samples, except in those instances in which other methods have been shown to be applicable.

TENTATIVE VALUES

Substance	ppm*	Mg/M³**
C tert. Butyl chromate (as CrO_3)—Skin	—	0.1
† Calcium oxide	—	5
Camphor	—	2
† Copper Fume	—	0.1
Dusts & Mists	—	1.0
DDVP (O, O-Dimethyl-2,2 - dichlorovinyl phosphate)	—	1
† Demeton (R) (Systox)	—	
Endrin (1,2,3,4,10,10,-hexachloro-6, 7-epoxy-1,4,4a,5, 6,7,8,8a-octa hydro 1,4-endo - 5,8 - dimethanonaphthalene)—Skin	—	0.1
Epichlorhydrin	5	19
Ethanolamine	3	6
† Graphite	—	15 mppcf
† Hafnium	—	0.5
Heptachlor (1,4,5,6,7,8,8a - heptachloro-3a,4,7,7a-tetrahydro - 4,7 - methanoindene)	—	0.5
† Methylamine	25	31
† Methyl Methacrylate	100	410
†C Methylene bis phenylisocyanate	0.02	0.2
† Mineral Wool (Fiberglas)	—	2
† Naphthalene	10	50
Oil (mineral)	—	5
† β-Propiolactone	—	A⁵
† Silver	—	0.05
† Tantalum	—	5
† 1,1,1,2, - Tetrachloro - 2,2, - difluoroethane	1,000	8,340
† 1-1-2-2 - Tetrachloro - 1,2 - difluoroethane	500	4,170
† Tetraethyl lead	—	0.075
† Tin (inorganic compounds)	—	2
(organic compounds as Sn)—Skin	—	0.1

†1962 Additions.
*Parts of vapor or gas per million parts of air by volume at 25° C and 760 mm. Hg pressure.
**Approximate milligrams of particulate per cubic meter of air.
A numbers, See Appendix A.

APPENDIX A

A[1] Benzidine. Because of high incidence of bladder tumors in man, any exposure, including skin, is extremely hazardous.

A[2] β-Naphthylamine. Because of the extremely high incidence of bladder tumors in workers handling this compound, and the inability to control exposures, β-naphthylamine has been prohibited from manufacture, use and other activities that involve human contact by the State of Pennsylvania.

A[3] N-Nitrosodimethylamine. Because of extremely high toxicity and presumed carcinogenic potential of this compound, contact by any route should not be permitted.

A[4] Teflon ® decomposition products. At least one identified component of Teflon decomposition products is extremely toxic, but in the absence of more complete toxicity information and suitable analytic methods, a definite threshold limit value is not recommended at this time; but air concentrations should be minimal.

A[5] β-Propiolactone. Because of high acute toxicity and demonstrated skin tumor production in animals, contact by any route should be avoided.

APPENDIX B

THRESHOLD LIMIT VALUES FOR MIXTURES

When two or more hazardous substances are present, their combined effect, rather than that of either individually, should be given primary consideration. In the absence of information to the contrary, the effects of the different hazards should be considered as additive. That is, if the sum of the following fractions,

$$\frac{C_1}{T_1}+\frac{C_2}{T_2}+\cdots\frac{Cn}{Tn}$$

exceeds unity, then the threshold limit of the mixture should be considered as being exceeded. C indicates the observed atmospheric concentration, and T_1 the corresponding threshold limit. (See Example 1A.a.)

Exceptions to the above rule may be made when there is good reason to believe that the chief effects of the different harmful substances are not in fact additive, but independent as when purely local effects on different organs of the body are produced by the various components of the mixture. In such cases the threshold limit ordinarily is exceeded only when at least one member of the series

$$\left(\frac{C_1}{T_1}\text{ or }\frac{C_2}{T_2}\text{ etc.}\right)$$

itself has a value exceeding unity. (See Example 1A.b.)

Antagonistic action or potentiation may occur with some combinations of atmospheric contaminants. Such cases at present must be determined individually. Potentiating or antagonistic agents are not necessarily harmful by themselves. Potentiating effects of exposure to such agents by routes other than that of inhalation is also possible, e.g., imbibed alcohol and inhaled narcotic (trichlorethylene). Potentiation is characteristically exhibited at high concentrations, less probably at low.

When a given operation or process characteristically emits a number of harmful dusts, fumes, vapors or gases, it will frequently be only feasible to attempt to evaluate the hazard by measurement of a single substance. In such cases, the threshold limit used for this substance should be reduced by a suitable factor, the magnitude of which will depend on the number, toxicity and relative quantity of the other contaminants ordinarily present.

Examples of processes which are typically associated with two or more harmful atmospheric contaminants are welding, automobile repair, blasting, painting, lacquering, certain foundry operations, diesel exhausts, etc. (Example 2.)

THRESHOLD LIMIT VALUES FOR MIXTURES

EXAMPLES

1A. General case, where air is analyzed for each component.

a. **ADDITIVE EFFECTS**

$$\frac{C_1}{T_1}+\frac{C_2}{T_2}+\frac{C_3}{T_3}+\cdots\frac{C_n}{T_n}=1$$

Air contains 5 ppm of carbon tetrachloride (TLV, 10), 20 ppm of ethylene dichloride (TLV,50) and 10 ppm of ethylene dibromide, (TLV, 25).

$$\frac{5}{10}+\frac{20}{50}+\frac{10}{25}=\frac{65}{50}=1.3$$

Threshold limit is exceeded.

b. **INDEPENDENT EFFECTS**

Air contains 0.15 mg/m³ of lead (TLV, 0.2) and 0.7 mg/m³ of sulfuric acid (TLV, 1).

$$\frac{0.15}{0.20}=0.75;\ \frac{0.7}{1}=0.7$$

Threshold limit is not exceeded.

1B. Special case when source of contaminant is a mixture and atmospheric composition is assumed similar to that of original material, i.e. vapor pressure of each component is the same at the observed temperature.

a. **ADDITIVE EFFECTS**, approximate solution.

1. A mixture of equal parts (1) trichloroethylene (TLV, 100), and (2) methyl chloroform (TLV, 350).

$$\frac{C_1}{100}+\frac{C_2}{350}=\frac{C_m}{T_m}$$

Solution applicable to "spot" solvent mixture usage, where all or nearly all, solvent evaporates.

$$C_1=C_2=\frac{1}{2}C_m$$

$$\frac{C_1}{100}+\frac{C_1}{350}=\frac{2C_1}{T_m}$$

$$\frac{7C_1}{700}+\frac{2C_1}{700}=\frac{2C_1}{T_m}$$

$$T_m=700\times\frac{2}{9}=155\text{ ppm}$$

1B.b. General Exact Solution for Mixtures of N Components With Additive Effects and Different Vapor Pressures.

(1) $\frac{C_1}{T_1}+\frac{C_2}{T_2}+\cdots+\frac{C_n}{T_n}=1;$

(2) $C_1+C_2+\cdots+C_n=T;$

(2.1) $\frac{C_1}{T}+\frac{C_2}{T}+\cdots+\frac{C_n}{T}=1.$

By the Law of Partial Pressures,

(3) $C_1=ap_1$

And by Raoult's Law,

(4) $p_1=F_1\,p_1^\circ.$

Combine (3) and (4) to obtain

(5) $C_1=aF_1p_1^\circ.$

Combining (1), (2.1), and (5), we obtain

(6) $\frac{F_1p_1^\circ}{T}+\frac{F_2p_2^\circ}{T}+\cdots+\frac{F_np_n^\circ}{T}=\frac{F_1p_1^\circ}{T_1}+\frac{F_2p_2^\circ}{T_2}+\cdots+\frac{F_np_n^\circ}{T_n}$ and solving for T_r

(6.1) $T=\frac{F_1p_1^\circ+F_2p_2^\circ+\cdots+F_np_n^\circ}{\frac{F_1p_1^\circ}{T_1}+\frac{F_2p_2^\circ}{T_2}+\cdots+\frac{F_np_n^\circ}{T_n}}$

or

(6.2) $T=\frac{\sum_{i=1}^{i=n}F_ip_i^\circ}{\sum_{i=1}^{i=n}\frac{F_ip_i^\circ}{T_i}}$

T = Threshold limit value in ppm.
C = Vapor concentration in ppm.
p = Vapor pressure of component in solution.
p° = Vapor pressure of pure component.
F = Mol fraction of component in solution.
a = A constant of proportionality.
Subscripts 1,2, . . . n relate the above quantities to components 1,2, . . . n, respectively.
Subscript i refers to an arbitrary component from 1 to n.
Absence of subscript relates the quantity to the mixture.

Solution to be applied when there is a reservoir of the solvent mixture whose composition does not change appreciably by evaporation.

Exact Arithmetic Solution of Specific Mixture

	Mol. wt.	Density	T	p° at 25°C	Mol fraction in half-and half solution by volume
Trichloroethylene (1)	131.4	1.46 g/ml	100	73mm Hg	0.527
Methylchloroform (2)	133.42	1.33 g/ml	350	125mm Hg	0.473

$$F_1p_1^\circ = (0.527)(73) = 38.2$$
$$F_2p_2^\circ = (0.473)(125) = 59.2$$

$$T = \frac{38.2 + 59.2}{\frac{38.2}{100} + \frac{59.2}{350}} = \frac{(97.4)\ (350)}{133.8 + 59.2} = \frac{(97.4)\ (350)}{193.0} = 177$$

T = 177 ppm (Note difference in T.L.V. when account is taken of vapor pressure and mol fraction in comparison with above example where such account is not taken).

2. A mixture of one part of (1) parathion (TLV, 0.1) and two parts of (2) EPN (TLV, 0.5).

$$\frac{C_1}{0.1} + \frac{C_2}{0.5} = \frac{C_m}{T_m}\quad C_2 = 2C_1$$

$$C_m = 3C_1$$

$$\frac{C_1}{0.1} + \frac{2C_1}{0.5} = \frac{3C_1}{T_m}$$

$$\frac{7C_1}{0.5} = \frac{3C_1}{T_m}$$

$$T_m = \frac{1.5}{7} = 0.21\ mg/m^3$$

1C. INDEPENDENT EFFECTS

1. From naphtha (TLV, 500) containing 10 mole per cent benzene (TLV, 25) the narcotic effects can considered as approximately the same as that of benzene-free naphtha.

The blood effects can be considered as due to the benzene alone.

For **intermittent exposure**, a TLV of 500 ppm may be used as long as the average concentration does not exceed $25 \times \frac{100}{10} = 250$ ppm, the TLV based on the benzene content.

2. Diesel engine exhaust contains several irritants, one of which is nitrogen dioxide. A limit of 2 ppm NO_2 has been found to correlate fairly well with the beginning of subjective (irritation) effects from such gases, although no subjective effects are experienced from NO_2 alone at 5 ppm.

Appendix C

BASES FOR ASSIGNING LIMITING "C" VALUES*

T.L.V. RANGE ppm* or mg/m³	Permitted Fluctuation Factor of T.L.V. for 5, 10 or 30 min.	Examples
0 to 1	3	Boron trifluoride (1 ppm) at 3 ppm if repeatedly encountered for periods of 5, 10, or 30 minutes, may lead to pneumonitis; a "C" listing recommended.
1+ to 10	2	
10+ to 100	1.5	Ethyl benzene (200 ppm) at 250 ppm if repeatedly encountered for periods of 5 or 10 minutes may prove intolerably irritating to the eyes; a "C" listing recommended.
100+ to 1000	1.25	

* According to this limitation, the presently listed TLVs will or will not be candidates for a "C" (ceiling) listing. 1963 TLVs not coming within this limitation will bear a "C" before the substance name. Judgment is based on whether the excursions in concentration under the time limits stated may result in a) intolerable irritation, b) chronic or irreversible tissue change, or c) narcosis of sufficient degree to increase accident proneness or materially reduce work efficiency.

[F.R. Doc. 64-2885; Filed, Mar. 26, 1964; 8:45 a.m.]

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PART III

FEDERAL REGISTER

VOLUME 29 NUMBER 61

Washington, Friday, March 27, 1964

Department of Labor

Bureau of Labor Standards

Safety and Health Regulations for Shipbuilding

Title 29—LABOR

Chapter XIII—Bureau of Labor Standards, Department of Labor

PART 1502—SAFETY AND HEALTH REGULATIONS FOR SHIPBUILDING

On August 23, 1963, a proposal to amend the safety and health regulations for shipbuilding under section 41 of the Longshoremen's and Harbor Workers' Compensation Act (33 U.S.C. 941) was published in the FEDERAL REGISTER (28 F.R. 9291). Interested persons were provided opportunities to submit data, views, and argument both orally and in writing in regard to the proposals. After consideration of all relevant matter presented, I have decided to and do hereby revise 29 CFR Part 1502 to read as set forth below.

The revised regulations shall become effective on April 26, 1964.

Signed at Washington, D.C., this 20th day of March 1964.

W. WILLARD WIRTZ,
Secretary.

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AUTHORITY: The provisions of this Part 1502 issued under sec. 41, 44 Stat. 1444; sec. 1, 72 Stat. 835; 33 U.S.C. 941.

Subpart A—General Provisions

§ 1502.1 Purpose, scope and responsibility.

(a) Section 41 of the Longshoremen's and Harbor Workers' Compensation Act requires every employer to furnish and maintain employment and places of employment which are reasonably safe for his employees in all employments covered thereby (the Act applies to all injuries sustained by employees on navigable waters of the United States if the employees are employed by an "employer" as defined in section 2(4) of the Act, i.e., "an employer any of whose employees are employed in maritime employment, in whole or in part, upon the navigable waters of the United States (including any drydock)." Calbeck v. Travelers Insurance Co. and Donovan v. Avondale Shipyards, Inc. (52 S. Ct. 1196 (1962)) and to install, furnish, maintain, and use devices and safeguards (with particular reference to equipment used by such employers and working conditions established by them) determined by the Secretary of Labor to be reasonably necessary to protect the life, health, and safety of such employees, and to render safe such employment and places of employment and to prevent injury to such employees. The purpose of this part is to make determinations under this standard with respect to shipbuilding activity.

(b) This part does not apply to matters under the control of the United States Coast Guard within the scope of Title 52 of the Revised Statutes and acts supplementary or amendatory thereto (46 U.S.C. secs. 1–1388 passim) including, but not restricted to, the master, ship's officer, crew members, design, construction, and maintenance of the vessel, its gear and equipment; to matters within the regulatory authority of the United States Coast Guard to safeguard vessels, harbors, ports, and waterfront facilities under the provisions of the Espionage Act of June 17, 1917, as amended (50 U.S.C. 191 et seq.; 22 U.S.C. 401, et seq.); including the provisions of Executive Order 10173, as amended by Executive Orders 10277 and 10352 (3 CFR 1949–1953 Comp., pp. 356, 778, and 873); or to matters within the regulatory authority of the United States Coast Guard with respect to lights, warning devices, safety equipment and other matters relating to the promotion of safety of lives and property under section 4(e) of the Outer Continental Shelf Lands Act (43 U.S.C. 1333). Also, this part does not apply to owners, operators, agents, or masters of vessels unless they are acting as "employers". However, this part is not intended to relieve owners, operators, agents, or masters of vessels who are not "employers" from responsibilities or duties now placed upon them by law, regulations, or custom.

(c) The responsibilities placed upon the competent person herein shall be deemed to be the responsibilities of the employer.

§ 1502.2 Definitions.

(a) The term "shall" indicates provisions which are mandatory.

(b) The term "Secretary" means the Secretary of Labor.

(c) The term "employer" means an employer any of whose employees are employed in maritime employment, in whole or in part, upon the navigable waters of the United States, including dry docks, graving docks, and marine railways, and any of whose employees are employed, in whole or in part, in shipbuilding or related employments as defined in paragraphs (i) and (j) of this section, on the navigable waters of the United States, including drydocks, graving docks, and marine railways.

(d) The term "employee" means any person employed in shipbuilding or related employments on the navigable waters of the United States, including dry docks, graving docks and marine railways, by an employer as defined in paragraph (c) of this section.

(e) The term "gangway" means any ramp-like or stair-like means of access provided to enable personnel to board or leave a vessel including accommodation ladders, gangplanks and brows.

(f) The term "vessel" includes every description of watercraft or other arti-

ficial contrivance used or capable of being used as a means of transportation on water, including special purpose floating structures not primarily designed for or used as a means of transportation on water.

(g) For purposes of § 1502.44, the term "barge" means an unpowered, flat bottom, shallow draft vessel including scows, carfloats and lighters. For purposes of this section, the term does not include ship shaped or deep draft barges.

(h) For purposes of § 1502.44, the term "river tow boat" means a shallow draft, low free board, self-propelled vessel designed to tow river barges by pushing ahead. For purposes of this section, the term does not include other towing vessels.

(i) The term "shipbuilding" means the construction of a vessel, including the installation of machinery and equipment.

(j) The term "related employment" means any employments performed as an incident to or in conjunction with shipbuilding work including, but not restricted to inspection, testing trials and employment as a watchman.

(k) The term "hazardous substance" means a substance which by reason of being explosive, flammable, poisonous, corrosive, oxidizing, irritant, or otherwise harmful is likely to cause injury.

(l) The term "competent person" for purposes of this part means a person who is capable of recognizing and evaluating employee exposure to hazardous substances or to other unsafe conditions and is capable of specifying the necessary protection and precautions to be taken to ensure the safety of employees as required by the particular regulation under the condition to which it applies. For the purposes of Subparts C and D of this part, except for § 1502.24(b)(8), to which the above definition applies, the competent person must also meet the additional requirements of § 1502.10.

(m) The term "confined space" means a compartment of small size and limited access such as a double bottom tank, cofferdam, or other space which by its small size and confined nature can readily create or aggravate a hazardous exposure.

(n) The term "enclosed space" means any space, other than a confined space, which is enclosed by bulkheads and overhead. It includes cargo holds, tanks, quarters and machinery and boiler spaces.

(o) The term "hot work" means riveting, welding, burning or other fire or spark producing operations.

(p) The term "cold work" means any work which does not involve riveting, welding, burning or other fire or spark producing operations.

(q) The term "portable unfired pressure vessel" means any pressure container or vessel used aboard ship, other than the ship's equipment, containing liquids or gases under pressure, excepting pressure vessels built to ICC regulations under 49 CFR Part 78, Subparts C and H.

(r) The term "powder actuated fastening tool" means a tool or machine which drives a stud, pin or fastener by means of an explosive charge.

§ 1502.3 Penalty.

(a) As provided in Public Law 85–742, any employer who, willfully, violates or fails or refuses to comply with the provisions of the regulations of this part and any employer or other person who willfully interferes with, hinders, or delays the Secretary or his authorized representative in carrying out his duties under subsection (c) of section 41 of the Act by refusing to admit the Secretary or his authorized representative to any place, or to permit the inspection or examination of any employment or place of employment, or who willfully hinders or delays the Secretary or his authorized representative in the performance of his duties in the enforcement of the regulations of this part, shall be guilty of an offense, and, upon conviction thereof, shall be punished for each offense by a fine of not less than $100 nor more than $3,000; and in any case where such employer is a corporation, the officer who willfully permits any such violation to occur shall be guilty of an offense, and, upon conviction thereof, shall be punished also for each offense by a fine of not less than $100 nor more than $3,000.

(b) The liability under this provision of Public Law 85–742 shall not affect any other liability of the employer under the Longshoremen's and Harbor Workers' Compensation Act.

§ 1502.4 Variation from the regulations of this part.

(a) As provided in Public Law 85–742, in case of practical difficulties or unnecessary hardships, the Secretary in his discretion may grant variations from the regulations of this part or particular provisions thereof, and permit the use of other or different devices if he finds that the purpose of the regulation will be observed by the variation and the safety of employees will be equally secured thereby. Any person affected by such regulations or his agent, may request the Secretary to grant such variation, stating in writing the grounds on which his request is based. Any authorization by the Secretary of a variation shall be in writing, shall describe the conditions under which the variation shall be permitted, and shall be published as provided in section 3 of the Administrative Procedure Act (ch. 324, 60 Stat. 237), as amended. A properly indexed record of all variations shall be kept in the Office of the Secretary and be open to public inspection.

§ 1502.5 Reference specifications, standards and codes.

(a) Specifications, standards and codes of agencies of the United States Government, to the extent specified in the text, form a part of the regulations of this part. In addition, under the authority vested in the Secretary under the Act, the specifications, standards, and codes of organizations which are not agencies of the United States Government, in effect on the date of the promulgation of the regulations of this part as listed below, to the extent specified in the text, form a part of the regulations of this part:

National Fire Protection Association, 60 Batterymarch Street, Boston 10, Massachusetts, Subpart B, § 1502.10(a).

Underwriters' Laboratories, Inc., 207 East Ohio Street, Chicago, Ill.; Subpart C, § 1502.24(b)(7).

American Standard Safety Code for Portable Wood Ladders, A14.1—1959, American Standards Association, Inc., 10 East 40th Street, New York 16, N.Y.; Subpart E, § 1502.42(a)(6).

American Standard Safety Code for Portable Metal Ladders, A14.2—1956, American Standards Association, Inc., 10 East 40th Street, New York 16, N.Y.; Subpart E, § 1502.42(a)(4).

American Standard Safety Code for Head, Eye and Respiratory Protection, Z2.1—1959, American Standards Association, Inc., 10 East 40th Street, New York 16, N.Y.; Subpart I, §§ 1502.81(a)(1), 1502.83(b).

American Society of Mechanical Engineers, Boiler and Pressure Vessel Code Section VIII, Rules for Construction of Unfired Pressure Vessels, 1963. American Society of Mechanical Engineers, 29 West 39th Street, New York 18, N.Y.; Subpart K, § 1502.101(a).

§ 1502.6 Notification of accidents resulting in fatalities or serious injuries.

(a) Within 48 hours after the occurrence of an accident causing the death of an employee or resulting in an employee's admission to a hospital as a bed patient, the employer shall file a copy of Bureau of Employees' Compensation Form BEC—202 (approved by Budget Bureau No. 44–R 887.3) with the Field Safety Consultant of the Bureau of Labor Standards serving the area where the accident occurred (in addition to such filing as is required by 20 CFR 31.3) unless prior thereto and as soon after the accident as feasible the employer has given oral or written notice of the accident to the person in charge of such office in sufficient detail to permit the accident to be identified readily. (44 Stat. 1444; 33 U.S.C. 930.)

§ 1502.7 Amendment of the regulations of this part.

The Secretary may at any time, upon his own motion or upon written petition of any interested person setting forth reasonable grounds therefor, and after opportunity has been given to interested persons to present their views, amend or revoke any of the provisions of the regulations of this part.

Subpart B—Explosive and Dangerous Atmospheres

§ 1502.10 Competent person.

(a) *Designation.* (1) For the purposes of Subparts C and D of this part, except for § 1502.24(b)(8), one or more competent persons shall be designated by the employer in accordance with the applicable requirements of this section unless the requirements of Subparts C and D of this part are always carried out by an N.F.P.A. Certified Marine Chemist.

(2) The employer shall indicate on U.S. Department of Labor Form MAR–8, "Designation of Competent Person" either those employees designated as competent persons or that the prescribed functions of such persons are always carried out by an N.F.P.A. Certified Marine Chemist in addition to his professional duties. When additions or changes are made in the personnel so designated, a new Form MAR–8 shall be executed. A copy of this executed form

shall be forwarded to the nearest office of the Bureau of Labor Standards.

(b) *Criteria.* The following criteria shall guide the employer in designating employees as competent persons:

(1) Ability to understand the meaning of designations on certificates and of any qualifications relating thereto and to carry out any instructions, either written or oral, left by the N.F.P.A. Certified Marine Chemist or issued by a consultant or chemist who may be used by the employer to make the tests and inspections required by Subparts C and D of this part.

(2) Ability to use and interpret the readings of an oxygen indicator and a combustible gas indicator. The ability to use and interpret the readings of a carbon monoxide indicator and a carbon dioxide indicator, if the operations involve such hazardous gases.

(3) Familiarity with and understanding of Subparts C and D of this part.

(4) Familiarity with the structure and knowledge of the location and designation of spaces of the types of vessels on which construction work is done.

(5) Capability to perform the tests and inspections required by Subparts C and D of this part and to write the required logs.

(c) *Logging of inspections and tests.* (1) When tests and inspections required to be performed by a competent person by any provisions of Subparts C and D of this part, except those in § 1502.24 (b)(8), are made, a record of the locations, operations performed and date, time, and results of the tests and any instructions resulting therefrom shall be recorded on U.S. Department of Labor Form MAR–9, "Log of Inspections and Tests by Competent Person." A separate form shall be used for each vessel on which tests and inspections are made.

(2) This record shall be available for inspection in the immediate vicinity of the affected operations while they are in progress. This record or copy thereof shall be kept on file for a period of at least 3 months from the date of the completion of the job.

(d) *Application.* The provisions of this section are intended to apply in their entirety to employers engaged in general vessel construction. They do not apply in their entirety to employers whose work involves only certain portions of Subparts C and D of this part, such as the building of some wooden vessels, where only knowledge of the precautions to be taken when using flammable paints is necessary. In such cases employers may designate persons who are competent on the basis of the applicable portions of the criteria set forth in paragraph (b) of this section.

Subpart C—Surface Preparation and Preservation

§ 1502.21 Toxic cleaning solvents.

(a) Before any solvents are used, the employer shall ascertain, whenever possible, the toxic properties of such solvents and shall employ at least one of the following measures to safeguard the health of employees exposed to toxic solvents.

(1) The cleaning operation shall be completely enclosed to prevent the escape of vapor into the working space.

(2) Either natural ventilation or mechanical exhaust ventilation shall be used to remove the vapor at the source and to dilute the concentration of vapors in the working space to the point at which an unsafe concentration does not exist.

(3) Employees shall be protected by suitable respiratory protective equipment in accordance with the requirements of § 1502.82 (a) and (c).

(b) The Table of Threshold Limit Values set forth in Appendix I shall be used as a guide in determining safe concentrations of vapors.

(c) When the toxic properties of a solvent cannot be ascertained or the concentration of its vapors cannot be determined, employees shall be protected by respiratory protective equipment in accordance with the requirements of § 1502.82 (a) and (c).

(d) The employer shall advise the employees who are exposed to solvents of the hazardous nature of the solvents and of the measures taken to safeguard their health.

(e) When flammable solvents are used, precautions shall be taken in accordance with the requirements of § 1502.25.

§ 1502.22 Chemical paint and preservative removers.

(a) Employees shall be protected against skin contact during the handling and application of chemical paint and preservative removers and shall be protected against eye injury by goggles or face shields in accordance with the requirements of § 1502.81 (a) and (b).

(b) When using flammable paint and preservative removers, precautions shall be taken in accordance with the requirements of § 1502.25.

(c) When using chemical paint and preservative removers which contain volatile and toxic solvents, such as benzol, acetone and amyl acetate, the provisions of § 1502.21 shall be applicable.

(d) When using paint and rust removers containing strong acids or alkalies, employees shall be protected by suitable face shields to prevent chemical burns on the face and neck.

(e) When steam guns are used, all employees working within range of the blast shall be protected by suitable face shields. Metal parts of the steam gun itself shall be insulated to protect the operator against heat burns.

§ 1502.23 Mechanical paint removers.

(a) *Power tools.* (1) Employees engaged in the removal of paints, preservatives, rusts or other coatings by means of power tools shall be protected against eye injury by goggles or face shields in accordance with the requirements of § 1502.81(a).

(2) All portable rotating tools used for the removal of paints, preservatives, rusts or other coatings shall be adequately guarded to protect both the operator and nearby workers from flying missiles.

(3) Portable electric tools shall be grounded in accordance with the requirements of § 1502.72 (a) and (b).

(4) In a confined space, mechanical exhaust ventilation sufficient to keep the dust concentration to a minimum shall be used, or employees shall be protected by respiratory protective equipment in accordance with the requirements of § 1502.82 (a) and (d).

(b) *Flame removal.* (1) Hardened preservative coatings shall not be removed by flame in enclosed spaces unless the employees exposed to fumes are protected by air line respirators in accordance with the requirements of § 1502.82 (a). Employees performing such an operation in the open air, and those exposed to the resulting fumes, shall be protected by a fume filter type respirator in accordance with requirements of paragraphs (a) and (d)(2)(iv) of §1502.82.

(2) Flame or heat shall not be used to remove soft and greasy preservative coatings.

(c) *Abrasive blasting*—(1) *Equipment.* Hoses and fittings used for abrasive blasting shall meet the following requirements:

(i) *Hoses.* Hose of a type to prevent shocks from static electricity shall be used.

(ii) *Hose couplings.* Hose lengths shall be joined by metal couplings secured to the outside of the hose to avoid erosion and weakening of the couplings.

(iii) *Nozzles.* Nozzles shall be attached to the hose by fittings that will prevent the nozzle from unintentionally becoming disengaged. Nozzle attachments shall be of metal and shall fit onto the hose externally.

(2) *Replacement.* Hoses and all fittings used for abrasive blasting shall be inspected frequently to insure timely replacement before an unsafe amount of wear has occurred.

(3) *Personal protective equipment.* (i) Abrasive blasters working in enclosed spaces shall be protected by hoods and air fed respirators or by air helmets of a positive pressure type in accordance with the requirements of § 1502.82(a).

(ii) Abrasive blasters working in the open shall be protected as indicated in subdivision (i) of this subparagraph except that when synthetic abrasives containing less than one percent free silica are used filter type respirators approved by the Bureau of Mines for exposure to lead dusts may be used in accordance with § 1502.82 (a) and (d).

(iii) Employees, other than blasters, including machine tenders and abrasive recovery men, working in areas where unsafe concentrations of abrasive materials and dusts are present shall be protected by eye and respiratory protective equipment in accordance with the requirements of §§ 1502.81 (a) and (b) and 1502.82 (a) and (d).

(iv) The blaster shall be protected against injury from exposure to the blast by appropriate protective clothing, including gloves.

(v) Since surges from drops in pressure in the hose line can be of sufficient proportions to throw the blaster off the staging, the blaster shall be protected by a safety belt when blasting is being done from elevations where adequate protec-

tion against falling cannot be provided by railings.

§ 1502.24 Painting.

(a) *Paints mixed with toxic vehicles or solvents.* (1) When paints mixed with toxic vehicles or solvents are sprayed, the following conditions shall apply:

(i) In confined spaces, employees continuously exposed to such spraying shall be protected by air line respirators in accordance with the requirements of § 1502.82(a).

(ii) In tanks or compartments, employees continuously exposed to such spraying shall be protected by air line respirators in accordance with the requirements of §1502.82(a). Where mechanical ventilation is provided, employees shall be protected by respirators in accordance with the requirements of § 1502.82 (a) and (e).

(iii) In large and well ventilated areas, employees exposed to such spraying shall be protected by respirators in accordance with the requirements of § 1502.82 (a) and (e).

(2) Where brush application of paints with toxic solvents is done in confined spaces, or other areas where lack of ventilation creates a hazard, employees shall be protected by filter respirators in accordance with the requirements of § 1502.82 (a) and (c).

(3) When flammable paints or vehicles are used, precautions shall be taken in accordance with the requirements of § 1501.25.

(4) Jet type air moving devices shall be electrically bonded to the vessel's structure.

(b) *Paints and tank coatings dissolved in highly volatile toxic and flammable solvents.* Several organic coatings, adhesives and resins are dissolved in highly toxic, flammable and explosive solvents with flash points below 80° F. Work involving such materials shall be done only when all of the following special precautions have been taken:

(1) Sufficient exhaust ventilation shall be provided to keep the concentration of solvent vapors below ten (10) percent of the lower explosive limit. Frequent tests shall be made by a competent person to ascertain the concentration.

(2) If the ventilation fails or if the concentration of solvent vapors rises above ten (10) percent of the lower explosive limit, painting shall be stopped and the compartment shall be evacuated until the concentration again falls below ten (10) percent of the lower explosive limit. If the concentration does not fall when painting is stopped, additional ventilation to bring the concentration down to ten (10) percent of the lower explosive limit shall be provided.

(3) Ventilation shall be continued after the completion of painting until the space or compartment is gas free. The final determination as to whether the space or compartment is gas free shall be made after the ventilating equipment has been shut off for at least ten minutes.

(4) Exhaust ducts shall discharge clear of working areas and away from sources of possible ignition. Periodic tests shall be made to ensure that the exhausted vapors are not accumulating in other areas within or around the vessel or dry dock.

(5) All motors and control equipment shall be of the explosion proof type with non-ferrous fan blades. Air ducts shall also be of non-ferrous materials. All motors and associated control equipment shall be properly maintained and grounded.

(6) Only non-sparking paint buckets, spray guns and tools shall be used. Metal parts of paint brushes and rollers shall be insulated. Staging shall be erected in a manner which ensures that it is non-sparking.

(7) Only explosion proof lights, approved by the Underwriters' Laboratories for use in Class I, Group D atmospheres, or approved as permissible by the U.S. Bureau of Mines or the U.S. Coast Guard, shall be used.

(8) A competent person shall inspect all power and lighting cables to ensure that the insulation is in excellent condition, free of all cracks and worn spots, that there are no connections within fifty (50) feet of the operation, that lines are not overloaded, and that they are suspended with sufficient slack to prevent undue stress or chafing.

(9) The face, eyes, head, hands and all other exposed parts of the bodies of employees handling such highly volatile paints shall be protected. All footwear shall be non-sparking, such as rubbers, rubber boots or rubber soled shoes without nails. Coveralls or other outer clothing shall be of cotton. Rubber, rather than plastic gloves shall be used because of the danger of static sparks.

(10) No matches, lighted cigarettes, cigars, or pipes, and no cigarette lighters or ferrous articles shall be taken into the area where work is being done.

(11) All solvent drums taken into the compartment shall be placed on non-ferrous surfaces and shall be grounded to the vessel. Metallic contact shall be maintained between containers and drums when materials are being transferred from one to another.

(12) Spray guns, paint pots, and metallic parts of connecting tubing shall be electrically bonded, and the bonded assembly shall be grounded to the vessel.

(13) All employees continuously in a compartment in which such painting is being performed, shall be protected by air line respirators in accordance with the requirements of § 1502.82(a). Employees entering such compartments for a limited time shall be protected by filter cartridge type respirators in accordance with the requirements of § 1502.82 (a) and (e).

(14) All employees doing exterior paint spraying with such paints shall be protected by suitable filter cartridge type respirators in accordance with the requirements of § 1502.82 (a) and (e).

§ 1502.25 Flammable liquids.

(a) In all cases when liquid solvents, paint and preservative removers, paints or vehicles, other than those covered by § 1502.24(b), are capable of producing a flammable atmosphere under the conditions of use the following precautions shall be taken:

(1) Smoking, open flames, arcs and spark-producing equipment shall be prohibited in the area.

(2) Ventilation shall be provided in sufficient quantities to keep the concentration of vapors below ten (10) percent of their lower explosive limit. Frequent tests shall be made by a competent person to ascertain the concentration.

(3) Scrapings and rags soaked with these materials shall be kept in a covered metal container.

(4) Only explosion proof lights, approved by the Underwriters' Laboratories for use in Class I, Group D atmospheres, or approved as permissible by the U.S. Bureau of Mines or the U.S. Coast Guard shall be used.

(5) A competent person shall inspect all power and lighting cables to ensure that the insulation is in excellent condition, free of all cracks and worn spots, that there are no connections within fifty (50) feet of the operation, that lines are not overloaded, and that they are suspended with sufficient slack to prevent undue stress or chafing.

(6) Suitable fire extinguishing equipment shall be immediately available in the work area and shall be maintained in a state of readiness for instant use.

Subpart D—Welding, Cutting and Heating

§ 1502.31 Ventilation and protection in welding, cutting and heating.

(a) *Mechanical ventilation; requirements.* (1) For purposes of this section, mechanical ventilation shall meet the following requirements:

(i) Mechanical ventilation shall consist of either general mechanical ventilation systems or local exhaust systems.

(ii) General mechanical ventilation shall be of sufficient capacity and so arranged as to produce the number of air changes necessary to maintain welding fumes and smoke within safe limits.

(iii) Local exhaust ventilation shall consist of freely movable hoods intended to be placed by the welder or burner as close as practicable to the work. This system shall be of sufficient capacity and so arranged as to remove fumes and smoke at the source and keep the concentration of them in the breathing zone within safe limits.

(iv) Contaminated air exhausted from a working space shall be discharged into the open air or otherwise clear of the source of intake air.

(v) All air replacing that withdrawn shall be clean and respirable.

(vi) Oxygen from a cylinder or torch shall not be used for ventilation purposes.

(b) *Welding, cutting and heating in confined spaces.* (1) Except as provided in paragraphs (b)(3) and (c)(2) of this section, either general mechanical or local exhaust ventilation meeting the requirements of paragraph (a) of this section shall be provided whenever welding, cutting or heating is performed in a confined space.

(2) The means of access shall be provided to a confined space and ventilation ducts to this space shall be arranged in accordance with § 1502.46(b)(1) and (2).

(3) When sufficient ventilation cannot be obtained without blocking the means of access, employees in the confined space shall be protected by air line respirators in accordance with the requirements of § 1502.82(a), and an employee on the outside of such a confined space shall be assigned to maintain communication with those working within it and to aid them in an emergency.

(c) *Welding, cutting or heating of metals of toxic significance.* (1) Welding, cutting or heating in any enclosed spaces aboard the vessel involving the metals specified in this subparagraph shall be performed with either general mechanical or local exhaust ventilation meeting the requirements of paragraph (a) of this section.

(i) Zinc-bearing base or filler metals or metals coated with zinc-bearing materials.

(ii) Lead base metals.

(iii) Cadmium-bearing filler materials.

(iv) Chromium-bearing metals or metals coated with chromium-bearing materials.

(2) Welding, cutting or heating in any enclosed spaces aboard the vessel involving the metals specified in this subparagraph shall be performed with local exhaust ventilation in accordance with the requirements of paragraph (a) of this section or employees shall be protected by air line respirators in accordance with the requirements of § 1502.82(a).

(i) Metals containing lead, other than as an impurity, or metals coated with lead-bearing materials.

(ii) Cadmium-bearing or cadmium coated base metals.

(iii) Metals coated with mercury-bearing metals.

(iv) Beryllium-containing base or filler metals.

Because of its high toxicity, work involving beryllium shall be done with both local exhaust ventilation and air line respirators.

(3) Employees performing such operations in the open air shall be protected by filter type respirators in accordance with the requirements of paragraphs (a) and (d)(2)(iv) of § 1502.82, except that employees performing such operations on beryllium-containing base or filler metals shall be protected by air line respirators in accordance with the requirements of § 1502.82(a).

(4) Other employees exposed to the same atmosphere as the welders or burners shall be protected in the same manner as the welder or burner.

(d) *Inert-gas metal-arc welding.* (1) Since the inert-gas metal-arc welding process involves the production of ultraviolet radiation of intensities of 5 to 30 times that produced during shielded metal-arc welding, the decomposition of chlorinated solvents by ultraviolet rays, and the liberation of toxic fumes and gases, employees shall not be permitted to engage in, or be exposed to the process until the following special precautions have been taken:

(i) The use of chlorinated solvents shall be kept at least two hundred (200) feet from the exposed arc, and surfaces prepared with chlorinated solvents shall be thoroughly dry before welding is permitted on such surfaces.

(ii) Helpers and other employees in the area not protected from the arc by screening as provided in § 1502.36(e) shall be protected by filter lenses meeting the requirements of § 1502.81 (a) and (c). When two or more welders are exposed to each other's arc, filter lens goggles of a suitable type meeting the requirements of § 1502.81 (a) and (c) shall be worn under welding helmets or hand shields to protect the welder against flashes and radiant energy when either the helmet is lifted or the shield is removed.

(iii) Welders and other employees who are exposed to radiation shall be suitably protected so that the skin is covered completely to prevent burns and other damage by ultraviolet rays. Welding helmets and hand shields shall be free of leaks and openings, and free of highly reflective surfaces.

(iv) When inert-gas metal-arc welding is being performed on stainless steel, the requirements of paragraph (c)(2) of this section shall be met to protect against dangerous concentrations of nitrogen dioxide.

(e) *General welding, cutting and heating.* (1) Welding, cutting and heating not involving conditions or materials described in paragraphs (b), (c) or (d) of this section may normally be done without mechanical ventilation or respiratory protective equipment, but where, because of unusual physical or atmospheric conditions, an unsafe accumulation of contaminants exists, suitable mechanical ventilation or respiratory protective equipment shall be provided.

(2) Employees performing any type of welding, cutting or heating shall be protected by suitable eye protective equipment in accordance with the requirements of § 1502.81 (a) and (c).

§ 1502.32 Fire prevention.[1]

(a) When practical, objects to be welded, cut or heated shall be moved to a designated safe location or, if the object to be welded, cut or heated cannot be readily moved, all movable fire hazards in the vicinity shall be taken to a safe place.

(b) If the object to be welded, cut or heated cannot be moved and if all the fire hazards cannot be removed, positive means shall be taken to confine the heat, sparks, and slag, and to protect the immovable fire hazards from them.

(c) No welding, cutting or heating shall be done where the application of flammable paints or the presence of other flammable compounds or of heavy dust concentrations creates a hazard.

(d) Suitable fire extinguishing equipment shall be immediately available in the work area and shall be maintained in a state of readiness for instant use. In addition, when hot work is being performed aboard a vessel and pressure is not available on the vessel's fire system, an auxiliary supply of water shall be made available where practicable, consistent with avoiding freezing of the lines or hose.

(e) When the welding, cutting or heating operation is such that normal fire prevention precautions are not sufficient, additional personnel shall be assigned to guard against fire while the actual welding, cutting or heating operations are being performed and for a sufficient period of time after completion of the work to ensure that no possibility of fire exists.

(f) When welding, cutting or heating is performed on tank shells, decks, overheads and bulkheads, since direct penetration of sparks or heat transfer may introduce a fire hazard to an adjacent compartment, the same precautions shall be taken on the opposite side as are taken on the side on which the welding is being performed.

(g) In order to eliminate the possibility of fire in enclosed spaces as a result of gas escaping through leaking or improperly closed torch valves, the gas supply to the torch shall be positively shut off at some point outside the enclosed space whenever the torch is not to be used or whenever the torch is left unattended for a substantial period of time, such as during the lunch hour. Overnight and at the change of shifts the torch and hose shall be removed from the enclosed space. Open end fuel gas and oxygen hoses shall be immediately removed from enclosed spaces when they are disconnected from the torch or other gas consuming device.

§ 1502.33 Welding, cutting and heating in way of preservative coatings.

(a) Before welding, cutting or heating is commenced on any surface covered by a preservative coating whose flammability is not known, a test shall be made by a competent person to determine its flammability. Preservative coatings shall be considered to be highly flammable when scrapings burn with extreme rapidity.

(b) Precautions shall be taken to prevent ignition of highly flammable hardened preservative coatings. When coatings are determined to be highly flammable they shall be stripped from the area to be heated to prevent ignition. A 1½-inch or larger fire hose with fog nozzle, which has been uncoiled and placed under pressure, shall be immediately available for instant use in the immediate vicinity, consistent with avoiding freezing of the hose.

(c) Protection against toxic preservative coatings. (1) In enclosed spaces all surfaces covered with toxic preservatives shall be stripped of all toxic coatings for a distance of at least 4 inches from the area of heat application or the employees shall be protected by air line respirators meeting the requirements of § 1502.82(a).

(2) In the open air employees shall be protected by a filter type respirator in accordance with requirements of § 1502.-82 (a) and (d).

(d) Before welding, cutting or heating is commenced in enclosed spaces on metals covered by soft and greasy preservatives, the following precautions shall be taken:

[1] 46 CFR 146.02–20 contains Coast Guard regulations pertaining to welding and cutting while explosives and dangerous cargoes are being handled.

(1) A competent person shall test the atmosphere in the space to ensure that it does not contain explosive vapors, since there is a possibility that some soft and greasy preservatives may have flash points below temperatures which may be expected to occur naturally. If such vapors are determined to be present, no hot work shall be commenced until such precautions have been taken as will ensure that the welding, cutting or heating can be performed in safety.

(2) The preservative coatings shall be removed for a sufficient distance from the area to be heated to ensure that the temperature of the unstripped metal will not be appreciably raised. Artificial cooling of the metal surrounding the heated area may be used to limit the size of the area required to be cleaned. The prohibition contained in § 1502.23(b)(2) shall apply.

(e) Immediately after welding, cutting or heating is commenced in enclosed spaces on metal covered by soft and greasy preservatives, and at frequent intervals thereafter, a competent person shall make tests to ensure that no flammable vapors are being produced by the coatings. If such vapors are determined to be present, the operation shall be stopped immediately and shall not be resumed until such additional precautions have been taken as are necessary to ensure that the operation can be resumed safely.

§ 1502.34 Welding, cutting and heating of hollow metal containers and structures.

(a) Drums, containers, or hollow structures which have contained toxic or flammable substances shall, before welding, cutting or heating is undertaken on them, either be filled with water or thoroughly cleaned of such substances and ventilated and tested.

(b) Before heat is applied to a drum, container, or hollow structure, a vent or opening shall be provided for the release of any build-up pressure during the application of heat.

(c) Before welding, cutting, heating or brazing is begun on structural voids such as skegs, bilge keels, fair waters, masts, booms, support stanchions, pipe stanchions or railings, a competent person shall inspect the object and, if necessary, test it for the presence of flammable liquids or vapors. If flammable liquids or vapors are present, the object shall be made safe.

(d) Objects such as those listed in paragraph (c) of this section shall also be inspected to determine whether water or other non-flammable liquids are present which, when heated, would build up excessive pressure. If such liquids are determined to be present, the object shall be vented, cooled, or otherwise made safe during the application of heat.

(e) Jacketed vessels shall be vented before and during welding, cutting or heating operations in order to release any pressure which may build up during the application of heat.

§ 1502.35 Gas welding and cutting.

(a) *Transporting, moving and storing compressed gas cylinders.* (1) Valve protection caps shall be in place and secure. Oil shall not be used to lubricate protection caps.

(2) When cylinders are hoisted, they shall be secured on a cradle, slingboard or pallet. They shall not be hoisted by means of magnets or choker slings.

(3) Cylinders shall be moved by tilting and rolling them on their bottom edges. They shall not be intentionally dropped, struck, or permitted to strike each other violently.

(4) When cylinders are transported by vehicle, they shall be secured in position.

(5) Valve protection caps shall not be used for lifting cylinders from one verticle position to another. Bars shall not be used under valves or valve protection caps to pry cylinders loose when frozen. Warm, not boiling, water shall be used to thaw cylinders loose.

(6) Unless cylinders are firmly secured on a special carrier intended for this purpose, regulators shall be removed and valve protection caps put in place before cylinders are moved.

(7) A suitable cylinder truck, chain, or other steadying device shall be used to keep cylinders from being knocked over while in use.

(8) When work is finished, when cylinders are empty or when cylinders are moved at any time, the cylinder valve shall be closed.

(9) Acetylene cylinders shall be kept in an upright position at all times.

(b) *Placing cylinders.* (1) Cylinders shall be kept far enough away from the actual welding or cutting operation so that sparks, hot slag or flame will not reach them. When this is impractical, fire resistant shields shall be provided.

(2) Cylinders shall be placed where they cannot become part of an electrical circuit. Electrodes shall not be struck against a cylinder to strike an arc.

(3) Fuel gas cylinders shall be placed with valve end up whenever they are in use. They shall not be placed in a location where they would be subject to open flame, hot metal, or other sources of artificial heat.

(4) Cylinders containing oxygen or acetylene or other fuel gas shall not be taken into confined spaces.

(c) *Treatment of cylinders.* (1) Cylinders, whether full or empty, shall not be used as rollers or supports.

(2) No person other than the gas supplier shall attempt to mix gases in a cylinder. No one except the owner of the cylinder or person authorized by him shall refill a cylinder. No one shall use a cylinder's contents for purposes other than those intended by the supplier. Only cylinders bearing Interstate Commerce Commission identification and inspection markings shall be used.

(3) No damaged or defective cylinder shall be used.

(d) *Use of fuel gas.* The employer shall thoroughly instruct employees in the safe use of fuel gas, as follows:

(1) Before connecting a regulator to a cylinder valve, the valve shall be opened slightly and closed immediately. (This action is generally termed "cracking" and is intended to clear the valve of dust or dirt that might otherwise enter the regulator). The person cracking the valve shall stand to one side of the outlet, not in front of it. The valve of a fuel gas cylinder shall not be cracked where the gas would reach welding work, sparks, flame or other possible sources of ignition.

(2) The cylinder valve shall always be opened slowly to prevent damage to the regulator. To permit quick closing, valves on fuel gas cylinders shall not be opened more than 1½ turns. When a special wrench is required, it shall be left in position on the stem of the valve while the cylinder is in use so that the fuel gas flow can be shut off quickly in case of an emergency. In the case of manifolded or coupled cylinders, at least one such wrench shall always be available for immediate use. Nothing shall be placed on top of a fuel gas cylinder, when in use, which may damage the safety device or interfere with the quick closing of the valve.

(3) Fuel gas shall not be used from cylinders through torches or other devices which are equipped with shut-off valves without reducing the pressure through a suitable regulator attached to the cylinder valve or manifold.

(4) Before a regulator is removed from a cylinder valve, the cylinder valve shall always be closed and the gas released from the regulator.

(5) If, when the valve on a fuel gas cylinder is opened, there is found to be a leak around the valve stem, the valve shall be closed and the gland nut tightened. If this action does not stop the leak, the use of the cylinder shall be discontinued, and it shall be properly tagged and removed from the vessel. In the event that fuel gas should leak from the cylinder valve rather than from the valve stem and the gas cannot be shut off, the cylinder shall be properly tagged and removed from the vessel. If a regulator attached to a cylinder valve will effectively stop a leak through the valve seat, the cylinder need not be removed from the vessel.

(6) If a leak should develop at a fuse plug or other safety device, the cylinder shall be removed from the vessel.

(e) *Manifolds.* (1) Manifolds shall bear the name of the substance they contain in letters at least one (1) inch high which shall be either painted on the manifold or on a sign permanently attached to it.

(2) All manifolds shall be placed in safe and accessible locations.

(3) Manifold hose connections shall be such that hose cannot be interchanged between fuel gases and oxygen manifolds. Adaptors shall not be used to permit the interchange of hose. Manifold hose connections shall be kept free of grease and oil.

(f) *Hose.* (1) Fuel gas hose and oxygen hose shall be easily distinguishable from each other. The contrast may be made by different colors or by surface characteristics readily distinguishable by the sense of touch. Oxygen and fuel gas hoses shall not be interchangeable. A single hose having more than one gas passage, a wall failure of which would permit the flow of one gas into the other gas passage, shall not be used.

(2) When parallel sections of oxygen and fuel gas hose are taped together,

not more than 4 inches out of 8 inches shall be covered by tape.

(3) All hose carrying acetylene, oxygen, natural or manufactured fuel gas, or any gas or substance which may ignite or enter into combustion or be in any way harmful to employees, shall be inspected at the beginning of each shift. Defective hose shall be removed from service.

(4) Hose which has been subjected to flashback or which shows evidence of severe wear or damage shall be tested to twice the normal pressure to which it is subject, but in no case less than two hundred (200) psi. Defective hose or hose in doubtful condition shall not be used.

(5) Hose couplings shall be of the type that cannot be unlocked or disconnected by means of a straight pull without rotary motion.

(6) Boxes used for the stowage of gas hose shall be ventilated.

(g) *Torch tips.* Clogged torch tip openings shall be cleaned with suitable cleaning wires, drills or other devices designed for such purpose.

(h) *Pressure regulators.* Oxygen and fuel gas pressure regulators including their related gauges shall be in proper working order while in use.

§ 1502.36 Arc welding and cutting.

(a) *Manual electrode holders.* (1) only manual electrode holders which are specifically designed for arc welding and cutting and are of a capacity capable of safely handling the maximum rated current required by the electrodes shall be used.

(2) Any current carrying parts passing through the portion of the holder which the arc welder or cutter grips in his hand shall be fully insulated against the maximum voltage encountered to ground.

(b) *Welding cables and connectors.* (1) All arc welding and cutting cables shall be of the completely insulated, flexible type, capable of handling the maximum current requirements of the work in progress, taking into account the duty cycle under which the arc welder or cutter is working.

(2) Only cable free from repair or splices for a minimum distance of ten (10) feet from the cable end to which the electrode holder is connected shall be used, except that cables with standard insulated connectors or with splices whose insulating quality is equal to that of the cable are permitted.

(3) When it becomes necessary to connect or splice lengths of cable one to another, substantial insulated connectors of a capacity at least equivalent to that of the cable shall be used. If connections are effected by means of cable lugs, they shall be securely fastened together to give good electrical contact, and the exposed metal parts of the lugs shall be completely insulated.

(4) Cables in poor repair shall not be used. When a cable, other than the cable lead referred to in subparagraph (2) of this paragraph, becomes worn to the extent of exposing bare conductors, the portion thus exposed shall be protected by means of rubber and friction tapes or other equivalent insulation.

(c) *Ground returns and machine grounding.* (1) A ground return cable shall have a safe current carrying capacity equal to or exceeding the specified maximum output capacity of the arc welding or cutting unit which it services. When a single ground return cable services more than one unit, its safe current carrying capacity shall equal or exceed the total specified maximum output capacities of all the units which it services.

(2) Structures or pipe lines, except pipe lines containing gases or flammable liquids or conduits containing electrical circuits, may be used as part of the ground return circuit, provided that the pipe or structure has a current carrying capacity equal to that required by subparagraph (1) of this paragraph.

(3) When a structure or pipe line is employed as a ground return circuit, it shall be determined that the required electrical contact exists at all joints. The generation of an arc, sparks or heat at any point shall cause rejection of the structure as a ground circuit.

(4) When a structure or pipe line is continuously employed as a ground return circuit, all joints shall be bonded, and periodic inspections shall be conducted to ensure that no condition of electrolysis or fire hazard exists by virtue of such use.

(5) The frames of all arc welding and cutting machines shall be grounded either through a third wire in the cable containing the circuit conductor or through a separate wire which is grounded at the source of the current. Grounding circuits, other than by means of the vessel's structure, shall be checked to ensure that the circuit between the ground and the grounded power conductor has resistance low enough to permit sufficient current to flow to cause the fuse or circuit breaker to interrupt the current.

(6) All ground connections shall be inspected to ensure that they are mechanically strong and electrically adequate for the required current.

(d) *Operating instructions.* Employers shall instruct employees in the safe means of arc welding and cutting as follows:

(1) When electrode holders are to be left unattended, the electrodes shall be removed and the holders shall be so placed or protected that they cannot make electrical contact with employees or conducting objects.

(2) Hot electrode holders shall not be dipped in water, since to do so may expose the arc welder or cutter to electric shock.

(3) When the arc welder or cutter has occasion to leave his work or to stop work for any appreciable length of time, or when the arc welding or cutting machine is to be moved, the power supply switch to the equipment shall be opened.

(4) Any faulty or defective equipment shall be reported to the supervisor.

(e) *Shielding.* Whenever practicable, all arc welding and cutting operations shall be shielded by noncombustible or flame-proof screens which will protect employees and other persons working in the vicinity from the direct rays of the arc.

§ 1502.37 Uses of fissionable material in shipbuilding.

(a) In shipbuilding and related activities involving the use of an exposure to sources of ionizing radiation not only on conventionally powered but also on nuclear powered vessels, the applicable provisions of the Atomic Energy Commission's Standards for Protection Against Radiation (10 CFR Part 20), relating to protection against occupational radiation exposure, shall apply.

(b) Any activity which involves the use of radioactive material, whether or not under license from the Atomic Energy Commission, shall be performed by competent persons specially trained in the proper and safe operation of such equipment. In the case of materials used under Commission license, only persons actually licensed, or competent persons under direction and supervision of the licensee, shall perform such work.

Subpart E—Scaffolds, Ladders and Other Working Surfaces

§ 1502.41 Scaffolds or staging.

(a) *General requirements.* (1) All scaffolds and their supports, whether of lumber, steel or other material, shall be capable of supporting the load they are designed to carry with a safety factor of not less than four (4).

(2) All lumber used in the construction of scaffolds shall be spruce, fir, long leaf yellow pine, Oregon pine or wood of equal strength. The use of hemlock, short leaf yellow pine or short fiber lumber is prohibited.

(3) Lumber dimensions as given in this subpart are nominal except where given in fractions of an inch.

(4) All lumber used in the construction of scaffolds shall be sound, straight-grained, free from cross grain, shakes and large, loose or dead knots. It shall also be free from dry rot, large checks, worm holes or other defects which impair its strength or durability.

(5) Scaffolds shall be maintained in a safe and secure condition. Any component of the scaffold which is broken, burned or otherwise defective shall be replaced.

(6) Barrels, boxes, cans, loose bricks or other unstable objects shall not be used for the support of planking intended as scaffolds or working platforms.

(7) No scaffolds shall be erected, moved, dismantled or altered except under the supervision of competent persons.

(8) No welding, burning, riveting or open flame work shall be performed on any staging suspended by means of fiber rope.

(9) Lifting bridles on working platforms suspended from cranes shall consist of four legs so attached that the stability of the platform is assured.

(10) Unless the crane hook has a safety latch or is moused, the lifting bridles on working platforms suspended from cranes shall be attached by shackles to the lower lifting block or other positive means shall be taken to prevent them from becoming accidentally disengaged from the crane hook.

(b) *Independent pole wood scaffolds.* (1) All pole uprights shall be set plumb. Poles shall rest on a foundation of sufficient size and strength to distribute the load and to prevent displacement.

(2) In light-duty scaffolds not more than 24 feet in height, poles may be spliced by overlapping the ends not less than 4 feet and securely nailing them together. A substantial cleat shall be nailed to the lower section to form a support for the upper section except when bolted connections are used.

(3) All other poles to be spliced shall be squared at the ends of each splice, abutted, and rigidly fastened together by not less than two cleats securely nailed or bolted thereto. Each cleat shall overlap each pole end by at least 24 inches and shall have a width equal to the face of the pole to which it is attached. The combined cross sectional area of the cleats shall be not less than the cross sectional area of the pole.

(4) Ledgers shall extend over two consecutive pole spaces and shall overlap the poles at each end by not less than 4 inches. They shall be left in position to brace the poles as the platform is raised with the progress of the work. Ledgers shall be level and shall be securely nailed or bolted to each pole and shall be placed against the inside face of each pole.

(5) All bearers shall be set with their greater dimension vertical and shall extend beyond the ledgers upon which they rest.

(6) Diagonal bracing shall be provided between the parallel poles, and cross bracing shall be provided between the inner and outer poles or from the outer poles to the ground.

(7) Minimum dimensions and spacing of members shall be in accordance with Table E–1 in § 1502.68.

(8) Platform planking shall be in accordance with the requirements of paragraph (h) of this section.

(9) Backrails and toeboards shall be in accordance with the requirements of paragraph (i) of this section.

(c) *Independent pole metal scaffolds.* (1) Metal scaffold members shall be maintained in good repair and free of corrosion.

(2) All vertical and horizontal members shall be fastened together with a coupler or locking device which will form a positive connection. The locking device shall be of a type which has no loose parts.

(3) Posts shall be kept plumb during erection and the scaffold shall be subsequently kept plumb and rigid by means of adequate bracing.

(4) Posts shall be fitted with bases supported on a firm foundation to distribute the load. When wooden sills are used, the bases shall be fastened thereto.

(5) Bearers shall be located at each set of posts, at each level, and at each intermediate level where working platforms are installed.

(6) Tubular bracing shall be applied both lengthwise and crosswise as required.

(7) Platform planking shall be in accordance with the requirements of paragraph (h) of this section.

(8) Backrails and toeboards shall be in accordance with the requirements of paragraph (i) of this section.

(d) *Wood trestle and extension trestle ladders.* (1) The use of trestle ladders, or extension sections or base sections of extension trestle ladders longer than 20 feet is prohibited. The total height of base and extension may, however, be more than 20 feet.

(2) The minimum dimensions of the side rails of the trestle ladder, or the base sections of the extension trestle ladder, shall be as follows:

(i) Ladders up to and including those 16 feet long shall have side rails of not less than $1\frac{5}{16}$ x $2\frac{3}{4}$ inch lumber.

(ii) Ladders over 16 feet long and up to and including those 20 feet long shall have side rails of not less than $1\frac{5}{16}$ x 3 inch lumber.

(3) The side rails of the extension section of the extension trestle ladder shall be parallel and shall have minimum dimensions as follows:

(i) Ladders up to and including 12 feet long shall have side rails of not less than $1\frac{5}{16}$ x $2\frac{1}{4}$ inch lumber.

(ii) Ladders over 12 feet long and up to and including those 16 feet long shall have side rails of not less than $1\frac{5}{16}$ x $2\frac{1}{2}$ inch lumber.

(iii) Ladders over 16 feet long and up to and including those 20 feet long shall have side rails of not less than $1\frac{5}{16}$ x $2\frac{3}{4}$ inch lumber.

(4) Trestle ladders and base sections of extension trestle ladders shall be so spread that when in an open position the spread of the trestle at the bottom, inside to inside, shall be not less than $5\frac{1}{2}$ inches per foot of the length of the ladder.

(5) The width between the side rails at the bottom of the trestle ladder or of the base section of the extension trestle ladder shall be not less than 21 inches for all ladders and sections 6 feet or less in length. For longer lengths of ladder the width shall be increased at least 1 inch for each additional foot of length. The width between the side rails of the extension section of the trestle ladder shall be not less than 12 inches.

(6) In order to limit spreading, the top ends of the side rails of both the trestle ladder and of the base section of the extension trestle ladder shall be beveled, or of equivalent construction, and shall be provided with a metal hinge.

(7) A metal spreader or locking device to hold the front and back sections in an open position, and to hold the extension section securely in the elevated position, shall be a component of each trestle ladder or extension trestle ladder.

(8) Rungs shall be parallel and level. On the trestle ladder, or on the base section of the extension trestle ladder, rungs shall be spaced not less than 8 inches nor more than 18 inches apart; on the extension section of the extension trestle ladder, rungs shall be spaced not less than 6 inches nor more than 12 inches apart.

(9) Platform planking shall be in accordance with the requirements of paragraph (h) of this section, except that the width of the platform planking shall not exceed the distance between the siderails.

(10) Backrails and toeboards shall be in accordance with the requirements of paragraph (i) of this section.

(e) *Painters' suspended scaffolds.* (1) The supporting hooks of swinging scaffolds shall be constructed to be equivalent in strength to mild steel or wrought iron, shall be forged with care, shall be not less than $\frac{7}{8}$ inch in diameter, and shall be secured to a safe anchorage at all times.

(2) The ropes supporting a swinging scaffold shall be equivalent in strength to first-grade $\frac{3}{4}$ inch diameter manila rope properly rigged into a set of standard 6 inch blocks consisting of at least one double and one single block.

(3) Manila and wire ropes shall be carefully examined before each operation and thereafter as frequently as may be necessary to ensure their safe condition.

(4) Each end of the scaffold platform shall be supported by a wrought iron or mild steel stirrup or hanger, which in turn is supported by the suspension ropes.

(5) Stirrups shall be constructed so as to be equivalent in strength to wrought iron $\frac{3}{4}$ inch in diameter.

(6) The stirrups shall be formed with a horizontal bottom member to support the platform, shall be provided with means to support the guardrail and midrail and shall have a loop or eye at the top for securing the supporting hook on the block.

(7) Two or more swinging scaffolds shall not at any time be combined into one by bridging the distance between them with planks or any other form of platform.

(8) No more than two men shall be permitted to work at one time on a swinging scaffold built to the minimum specifications contained in this paragraph. Where heavier construction is used, the number of men permitted to work on the scaffold shall be determined by the size and the safe working load of the scaffold.

(9) Backrails and toeboards shall be in accordance with the requirements of paragraph (i) of this section.

(10) The swinging scaffold platform shall be one of the three types described in subparagraphs (11), (12) and (13) of this paragraph.

(11) The ladder-type platform consists of boards upon a horizontal ladder-like structure, referred to herein as the ladder, the side rails of which are parallel. If this type of platform is used the following requirements shall be met:

(i) The width between the side rails shall be no more than 20 inches.

(ii) The side rails of ladders in ladder-type platforms shall be equivalent in strength to a beam of clear straight-grained spruce of the dimensions contained in Table E–2 in § 1502.68.

(iii) The side rails shall be tied together with tie rods. The tie rods shall be not less than $\frac{5}{16}$ inch in diameter, located no more than 5 feet apart, pass through the rails, and be riveted up tight against washers at both ends.

(iv) The rungs shall be of straight-grained oak, ash, or hickory, not less than

1⅛ inches diameter, with ⅞ inch tenons mortised into the side rails not less than ⅞ inch and shall be spaced no more than 18 inches on centers.

(v) Flooring strips shall be spaced no more than ⅝ inch apart except at the side rails, where 1 inch spacing is permissible.

(vi) Flooring strips shall be cleated on their undersides.

(12) The plank-type platform consists of planks supported on the stirrups or hangers. If this type of platform is used, the following requirements shall be met:

(i) The planks of plank-type platforms shall be of not less than 2 x 10 inch lumber.

(ii) The platform shall be no more than 24 inches in width.

(iii) The planks shall be tied together by cleats of not less than 1 x 6 inch lumber, nailed on their undersides at intervals of not more than 4 feet.

(iv) The planks shall extend not less than 6 inches nor more than 18 inches beyond the supporting stirrups.

(v) A cleat shall be nailed across the platform on the underside at each end outside the stirrup to prevent the platform from slipping off the stirrup.

(vi) Stirrup supports shall be not more than 10 feet apart.

(13) The beam-type platform consists of longitudinal side stringers with cross beams set on edge and spaced not more than 4 feet apart on which longitudinal platform planks are laid. If this type platform is used the following requirements shall be met:

(i) The side stringers shall be of sound, straight-grained lumber, free from knots, and of not less than 2 x 6 inch lumber, set on edge.

(ii) The stringers shall be supported on the stirrups with a clear span between stirrups of not more than 16 feet.

(iii) The stringers shall be bolted to the stirrups by U-bolts passing around the stirrups and bolted through the stringers with nuts drawn up tight on the inside face.

(iv) The ends of the stringers shall extend beyond the stirrups not less than 6 inches nor more than 12 inches at each end of the platform.

(v) The platform shall be supported on cross beams of 2 x 6 inch lumber between the side stringers securely nailed thereto and spaced not more than 4 feet on centers.

(vi) The platform shall be not more than 24 inches wide.

(vii) The platform shall be formed of boards ⅞ inch in thickness by not less than 6 inches in width, nailed tightly together, and extending to the outside face of the stringers.

(viii) The ends of all platform boards shall rest on the top of the cross beams, shall be securely nailed, and at no intermediate points in the length of the platform shall there be any cantilever ends.

(f) *Horse scaffolds.* (1) The minimum dimensions of lumber used in the construction of horses shall be in accordance with Table E–3 in § 1502.68.

(2) Horses constructed of materials other than lumber shall provide the strength, rigidity and security required of horses constructed of lumber.

(3) The lateral spread of the legs shall be equal to not less than one-third of the height of the horse.

(4) All horses shall be kept in good repair, and shall be properly secured when used in staging or in locations where they may be insecure.

(5) Platform planking shall be in accordance with the requirements of paragraph (h) of this section.

(6) Backrails and toeboards shall be in accordance with paragraph (i) of this section.

(g) *Other types of scaffolds.* (1) Scaffolds of a type for which specifications are not contained in this section shall meet the general requirements of paragraphs (a), (h) and (i) of this section, shall be in accordance with recognized principles of design and shall be constructed in accordance with accepted standards covering such equipment.

(h) *Scaffold or platform planking.* (1) Except as otherwise provided in paragraph (e) (11) and (13) of this section, platform planking shall be of not less than 2 x 10 inch lumber. Platform planking shall be straight-grained and free from large or loose knots and may be either rough or dressed.

(2) Platforms of staging shall be not less than two 10 inch planks in width except in such cases as the structure of the vessel or the width of the trestle ladders make it impossible to provide such a width.

(3) Platform planking shall project beyond the supporting members at either end by at least 6 inches but in no case shall project more than 12 inches unless the planks are fastened to the supporting members.

(4) Table E–4 in § 1502.68 shall be used as a guide in determining safe loads for scaffold planks.

(i) *Backrails and toeboards.* (1) Scaffolding, staging, runways, or working platforms which are supported or suspended more than 5 feet above a solid surface, or at any distance above the water, shall be provided with a railing which has a top rail whose upper surface is from 42 to 45 inches above the upper surface of the staging, platform, or runway and a midrail located halfway between the upper rail and the staging, platform, or runway.

(2) Rails shall be of 2 x 4 inch lumber, flat bar or pipe. When used with rigid supports, taut wire or fiber rope of adequate strength may be used. If the distance between supports is more than 8 feet, rails shall be equivalent in strength to 2 x 4 inch lumber. Rails shall be firmly secured.

(3) Rails may be omitted where the structure of the vessel prevents their use. When rails are omitted employees working more than 5 feet above solid surfaces shall be protected by safety belts and life lines meeting the requirements of § 1502.84(b), and employees working over water shall be protected by buoyant working vests meeting the requirements of § 1502.84(a).

(4) Employees working from swinging scaffolds which are triced out of a vertical line below their supports or from scaffolds on paint floats subject to surging, shall be protected against falling toward the vessel by a railing or a safety belt and line attached to the backrail.

(5) When necessary, to prevent tools and materials from falling on men below, toeboards of not less than 1 x 4 inch lumber shall be provided.

(j) *Access to staging.* (1) Access from below to staging more than 5 feet above a floor, deck or the ground shall consist of well secured stairways, cleated ramps, fixed or portable ladders meeting the applicable requirements of § 1502.42 or rigid type non-collapsible trestles with parallel and level rungs.

(2) Ramps and stairways shall be provided with 36-inch handrails with midrails.

(3) Ladders shall be so located or other means shall be taken so that it is not necessary for employees to step more than one foot from the ladder to any intermediate landing or platform.

(4) Ladders forming integral parts of prefabricated staging are deemed to meet the requirements of these regulations.

(5) Access from above to staging more than 3 feet below the point of access shall consist of a straight, portable ladder meeting the applicable requirements of § 1502.42 or a Jacob's ladder properly secured, meeting the requirements of § 1502.44(d).

§ 1502.42 Ladders.

(a) *General requirements.* (1) The use of ladders with broken or missing rungs or steps, broken or split side rails, or other faulty or defective construction is prohibited. When ladders with such defects are discovered, they shall be immediately withdrawn from service. Inspection of metal ladders shall include checking for corrosion of interiors of open end, hollow rungs.

(2) When sections of ladders are spliced, the ends shall be abutted, and not fewer than 2 cleats shall be securely nailed or bolted to each rail. The combined cross sectional area of the cleats shall be not less than the cross sectional area of the side rail. The dimensions of side rails for their total length shall be those specified in paragraphs (b) or (c) of this section.

(3) Portable ladders shall be lashed, blocked or otherwise secured to prevent their being displaced. The side rails of ladders used for access to any level shall extend not less than 36 inches above that level. When this is not practical, grab rails which will provide a secure grip for an employee moving to or from the point of access shall be installed.

(4) Portable metal ladders shall be of strength equivalent to that of wood ladders. Manufactured portable metal ladders provided by the employer shall be in accordance with the provisions of the American Standard Safety Code for Portable Metal Ladders, A14.2.

(5) Portable metal ladders shall not be used near electrical conductors nor for electric arc welding operations.

(6) Manufactured portable wood ladders provided by the employer shall be in accordance with the provisions of the American Standard Safety Code for Portable Wood Ladders, A14.1.

(b) *Construction of portable wood cleated ladders up to 30 feet in length.*

(1) Wood side rails shall be made from West Coast hemlock, Eastern spruce, Sitka spruce, or wood of equivalent strength. Material shall be seasoned, straight-grained wood, and free from shakes, checks, decay or other defects which will impair its strength. The use of low density woods is prohibited.

(2) Side rails shall be dressed on all sides, and kept free of splinters.

(3) All knots shall be sound and hard. The use of material containing loose knots is prohibited. Knots shall not appear on the narrow face of the rail and, when in the side face, shall be not more than ½ inch in diameter or within ½ inch of the edge of the rail or nearer than 3 inches to a tread or rung.

(4) Pitch pockets not exceeding ⅛ inch in width, 2 inches in length and ½ inch in depth are permissible in wood side rails, provided that not more than one such pocket appears in each 4 feet of length.

(5) The width between side rails at the base shall be not less than 11½ inches for ladders 10 feet or less in length. For longer ladders this width shall be increased at least ¼ inch for each additional 2 feet of length.

(6) Side rails shall be at least 1⅝ x 3⅝ inches in cross section.

(7) Cleats (meaning rungs rectangular in cross section with the wide dimension parallel to the rails) shall be of the material used for side rails, straight-grained and free from knots. Cleats shall be mortised into the edges of the side rails ½ inch, or filler blocks shall be used on the rails between the cleats. The cleats shall be secured to each rail with three 10d common wire nails or fastened with through bolts or other fasteners of equivalent strength. Cleats shall be uniformly spaced not more than 12 inches apart.

(8) Cleats 20 inches or less in length shall be at least $2\frac{5}{32}$ x 3 inches in cross section. Cleats over 20 inches but not more than 30 inches in length shall be at least $2\frac{5}{32}$ x 3¾ inches in cross section.

(c) *Construction of portable wood cleated ladders from 30 to 60 feet in length.* (1) Ladders from 30 to 60 feet in length shall be in accordance with the specifications of paragraph (b) of this section with the following exceptions:

(i) Rails shall be of not less than 2 x 6 inch lumber.

(ii) Cleats shall be of not less than 1 x 4 inch lumber.

(iii) Cleats shall be nailed to each rail with five 10d common wire nails or fastened with through bolts or other fastenings of equivalent strength.

§ 1502.43 Guarding of deck openings.

(a) When employees are working in the vicinity of flush manholes and other small openings of comparable size in the deck and other working surfaces, such openings shall be suitably covered or guarded to a height of not less than 30 inches, except where the use of such guards is made impracticable by the work actually in progress.

(b) When employees are working around open hatches not protected by coamings to a height of 24 inches or around other large openings, the edge of the opening shall be guarded in the working area to a height of 36 to 42 inches, except where the use of such guards is made impracticable by the work actually in progress.

§ 1502.44 Access to vessels.

(a) *Access to vessels afloat.* The employer shall not permit employees to board or leave any vessel, except a barge or river towboat, until the following requirements have been met:

(1) Whenever practicable, a gangway of not less than 20 inches walking surface, of adequate strength, maintained in safe repair and safely secured shall be used. If a gangway is not practicable, a substantial straight ladder, extending at least 36 inches above the upper landing surface and adequately secured against shifting or slipping shall be provided. When conditions are such that neither a gangway nor a straight ladder can be used, a Jacob's ladder meeting the requirements of paragraph (d) (1) and (2) of this section may be used.

(2) Each side of such gangway, and the turn table if used, shall have a railing with a minimum height of approximately 33 inches measured perpendicularly from rail to walking surface at the stanchion, with mid rail. Rails shall be of wood, pipe, chain, wire, or rope and shall be kept taut at all times.

(3) The gangway shall be kept properly trimmed at all times.

(4) When a fixed tread accommodation ladder is used, and the angle is low enough to require employees to walk on the edge of the treads, cleated duckboards shall be laid over and secured to the ladder.

(5) When the lower end of a gangway overhangs the water between the ship and the dock in such a manner that there is danger of employees falling between the ship and the dock, a net or other suitable protection shall be rigged at the foot of the gangway in such a manner as to prevent employees from falling from the end of the gangway.

(6) If the foot of the gangway is more than one foot away from the edge of the apron, the space between them shall be bridged by a firm walkway equipped with railings, with a minimum height of approximately 33 inches with mid rails on both sides.

(7) Supporting bridles shall be kept clear so as to permit unobstructed passage for employees using the gangway.

(8) When the upper end of the means of access rests on or flush with the top of the bulwark, substantial steps properly secured and equipped with at least one substantial handrail approximately 33 inches in height shall be provided between the top of the bulwark and the deck.

(9) Obstructions shall not be laid on or across the gangway.

(10) The means of access shall be adequately illuminated for its full length.

(11) Loads shall not be passed over the means of access while employees are on it.

(b) *Access to vessels in drydock or between vessels.* Gangways meeting the requirements of paragraph (a) (1), (2), (8), (9) and (10) of this section shall be provided for access from wing wall to vessel or, when two or more vessels, other than barges or river towboats, are lying abreast, from one vessel to another.

(c) *Access to barges and river towboats.* (1) Ramps for access of vehicles to or between barges shall be of adequate strength, provided with side boards, well maintained and properly secured.

(2) Unless employees can step safely to or from the wharf, float, barge, or river towboat, either a ramp in accordance with the requirements of subparagraph (1) of this paragraph or a safe walkway in accordance with the requirements of paragraph (a) (7) of this section shall be provided. When a walkway is impracticable, a substantial ladder, extending at least 36 inches above the upper landing surface and adequately secured against shifting or slipping shall be provided. When conditions are such that neither a walkway nor a straight ladder can be used, a Jacob's ladder in accordance with the requirements of paragraph (d) of this section may be used.

(3) The means of access shall be in accordance with the requirements of paragraph (a) (8), (9) and (10) of this section.

(d) *Jacob's ladders.* (1) Jacob's ladders shall be of the double rung or flat tread type. They shall be well maintained and properly secured.

(2) A Jacob's ladder shall either hang without slack from its lashings or be pulled up entirely.

§ 1502.45 Access to and guarding of dry docks.

(a) A gangway, ramp or permanent stairway of not less than 20 inches walking surface, of adequate strength, maintained in safe repair and securely fastened, shall be provided between a floating dry dock and the pier or bulkhead.

(b) Each side of such gangway, ramp or permanent stairway, including those which are used for access to wing walls from dry dock floors, shall have a railing with a mid rail. Such railings on gangways or ramps shall be approximately 42 inches in height; and railings on permanent stairways shall be not less than approximately 30 or more than approximately 34 inches in height. Rails shall be of wood, pipe, chain, wire, or rope and shall be kept taut at all times.

(c) Railings meeting the requirements of paragraph (b) of this section shall be provided on the means of access to and from the floors of graving docks.

(d) Railings approximately 42 inches in height, with a mid rail, shall be provided on the edges of wing walls of floating dry docks and on the edges of graving docks. Sections of the railings may be temporarily removed where necessary to permit line handling while a vessel is entering or leaving the dock.

(e) When employees are working on the floor of a floating dry dock where they are exposed to the hazard of falling into the water, the end of the dry dock shall be equipped with portable stanchions and 42-inch railings with a mid rail. When such a railing would be

impracticable or ineffective, other effective means shall be provided to prevent men from falling into the water.

(f) Access to wingwalls from floors of dry docks shall be by ramps, permanent stairways or ladders meeting the applicable requirements of § 1502.42.

§ 1502.46 Access to cargo spaces and confined spaces.

(a) *Cargo spaces.* (1) There shall be at least one safe and accessible ladder in any cargo space which employees must enter.

(2) When any fixed ladder is visibly unsafe, the employer shall prohibit its use by employees.

(3) Straight ladders of adequate strength and suitably secured against shifting or slipping shall be provided as necessary when fixed ladders in cargo spaces do not meet the requirements of subparagraph (1) of this paragraph. When conditions are such that a straight ladder cannot be used, a Jacob's ladder meeting the requirements of § 1502.44(d) may be used.

(4) Fixed ladders or straight ladders provided for access to cargo spaces shall not be used at the same time that equipment, materials or other loads are entering or leaving the hold. Before using these ladders to enter or leave the hold, the employee shall be required to inform the winchman or the crane signalman of his intention.

(b) *Confined spaces.* (1) More than one means of access shall be provided to a confined space in which employees are working and in which the work may generate a hazardous atmosphere in the space except where the structure or arrangement of the vessel makes this provision impractical.

(2) When the ventilating ducts required by these regulations must pass through these means of access, the ducts shall be of such a type and so arranged as to permit free passage to an employee through at least two of these means of access.

§ 1502.47 Working surfaces.

(a) When firebox floors present tripping hazards of exposed tubing or from missing or removed refractory, sufficient planking to afford safe footing shall be laid while work is being carried on within the boiler.

Subpart F—General Working Conditions

§ 1502.51 Housekeeping.

(a) Good housekeeping conditions shall be maintained at all times. Adequate aisles and passageways shall be maintained in all work areas. All staging platforms, ramps, stairways, walkways, aisles, and passageways on vessels or dry docks shall be kept clear of all debris such as welding rod tips, bolts, nuts, and similar material. Welding leads, burner hose and air hose in aisles or passageways shall be elevated over or placed under the walkway surfaces or covered by cross-over planks.

(b) All working areas on vessels and dry docks shall be kept reasonably free of debris, and construction material shall be so piled as not to present a hazard to employees.

(c) Slippery conditions on walkways or working surfaces shall be eliminated as they occur.

(d) Free access shall be maintained at all times to all exits and to all fire-alarm boxes or fire-extinguishing equipment.

(e) All oils, paints, thinners, solvents, waste, rags, or other flammable substances shall be kept in fire resistant covered containers when not in use.

§ 1502.52 Illumination.

(a) All means of access and walkways leading to working areas as well as the working areas themselves shall be adequately illuminated.

(b) Temporary lights shall meet the following requirements:

(1) Temporary lights shall be equipped with guards to prevent accidental contact with the bulb, except that guards are not required when the construction of the reflector is such that the bulb is deeply recessed.

(2) Temporary lights shall be equipped with heavy duty electric cords with connections and insulation maintained in safe condition. Temporary lights shall not be suspended by their electric cords unless cords and lights are designed for this means of suspension.

(3) Cords shall be kept clear of working spaces and walkways or other locations in which they are readily exposed to damage.

(c) Exposed non-current-carrying metal parts of temporary lights furnished by the employer shall be grounded either through a third wire in the cable containing the circuit conductors or through a separate wire which is grounded at the source of the current. Grounding shall be in accordance with the requirements of § 1502.72(b).

(d) Where temporary lighting from sources outside the vessel is the only means of illumination, portable emergency lighting equipment shall be available to provide illumination for safe movement of employees.

(e) Employees shall not be permitted to enter dark spaces without a suitable portable light. The use of matches and open flame lights is prohibited.

(f) Temporary lighting stringers or streamers shall be so arranged as to avoid overloading of branch circuits. Each branch circuit shall be equipped with overcurrent protection of capacity not exceeding the rated current carrying capacity of the cord used.

§ 1502.53 Utilities.

(a) *Steam supply and hoses.* (1) Prior to supplying a vessel with steam from a source outside the vessel, the employer shall install a pressure gauge and a relief valve of proper size and capacity at the point where the temporary steam hose joins the vessel's steam piping system or systems. The relief valve shall be set and capable of relieving at a pressure not exceeding the safe working pressure of the vessel's system in its present condition, and there shall be no means of isolating the relief valve from the system which it protects. The pressure gauge and relief valve shall be located so as to be visible and readily accessible.

(2) Steam hose and fittings shall have a safety factor of not less than five (5).

(3) When steam hose is hung in a bight or bights, the weight shall be relieved by appropriate lines. The hose shall be protected against chafing.

(4) Steam hose shall be protected from damage and hose and temporary piping shall be so shielded where passing through normal work areas as to prevent accidental contact by employees.

(b) *Electric power.* (1) When the vessel is supplied with electric power from a source outside the vessel, the following precautions shall be taken prior to energizing the vessel's circuits:

(i) If in dry dock, the vessel shall be adequately grounded.

(ii) The employer shall insure that all of the vessel's circuits to be energized are in a safe condition.

(iii) All circuits to be energized shall be equipped with overcurrent protection of capacity not exceeding the rated current carrying capacity of the cord used.

§ 1502.54 Work in confined or isolated spaces.

When any work is performed in a confined space, except as provided in § 1502.31(b)(3), or when an employee is working alone in an isolated location, frequent checks shall be made to ensure the safety of the employees.

§ 1502.55 Work on or in the vicinity of radar and radio.

(a) No employees other than radar or radio repairmen shall be permitted to work on masts, king posts or other aloft areas unless the radar and radio are secured or otherwise made incapable of radiation. In either event, the radio and radar shall be appropriately tagged.

(b) Testing of radar or radio shall not be done until the employer can schedule such tests at a time when no work is in progress aloft or personnel can be cleared from the danger area according to minimum safe distances established for and based on the type, model, and power of the equipment.

§ 1502.56 Work in or on lifeboats.

(a) Before employees are permitted to work in or on a lifeboat, either stowed or in a suspended position, the employer shall ensure that the boat is secured independently of the releasing gear to prevent the boat from falling due to accidental tripping of the releasing gear and movements of the davits or capsizing of a boat in chocks.

(b) Employees shall not be permitted to remain in boats while the boats are being hoisted into final stowed position.

(c) Employees shall not be permitted to work on the outboard side of lifeboats stowed on their chocks unless the boats are secured by gripes or otherwise secured to prevent them from swinging outboard.

§ 1502.57 Health and sanitation.

(a) The employer shall provide adequate washing facilities for employees engaged in the application of paints or coatings or in other operations where

contaminants can, by ingestion or absorption, be detrimental to the health of the employee. The employer shall encourage good personal hygiene practices by informing the employees of the need for removing surface contaminants by thorough washing of hands and face prior to eating or smoking.

(b) The employer shall not permit eating or smoking in areas undergoing surface preparation or preservation.

§ 1502.58 First aid.

(a) Unless a first aid room and a qualified attendant are close at hand and prepared to render first aid to employees on behalf of the employer, the employer shall furnish a first aid kit for each vessel on which work is being performed, except that when work is being performed on more than one small vessel at one pier, only one kit shall be required. The kit, when required, shall be kept close to the vessel and at least one employee, close at hand shall be qualified to administer first aid to the injured.

(b) The first aid kit shall consist of a weatherproof container with individual sealed packages for each type of item. The contents of such kit shall contain a sufficient quantity of at least the following types of items:

Gauze roller bandages, 1 inch and 2 inch.
Gauze compress bandages, 4 inch.
Adhesive bandages, 1 inch.
Triangular bandage, 40 inch.
Ammonia inhalants and ampules.
Antiseptic applicators or swabs.
Burn dressing.
Eye dressing.
Wire or thin board splints.
Forceps and tourniquet.

(c) The contents of the first aid kit shall be checked before being sent out on each job and at least weekly on each job to ensure that the expended items are replaced.

(d) There shall be available for each vessel on which ten (10) or more employees are working one Stokes basket stretcher, or equivalent, permanently equipped with bridles for attaching to the hoisting gear, except that no more than two stretchers are required on each job location. Stretchers shall be kept close to the vessels. This paragraph does not apply where ambulance services carry such stretchers.

Subpart G—Gear and Equipment for Rigging and Materials Handling

§ 1502.61 Inspection.

(a) All gear and equipment provided by the employer for rigging and materials handling shall be inspected before each shift and, when necessary, at intervals during its use to ensure that it is safe. Defective gear shall be removed and repaired or replaced before further use.

(b) The safe working load of gear as specified in §§ 1502.62 and 1502.63 shall not be exceeded.

§ 1502.62 Ropes, chains and slings.

(a) *Manila rope and manila rope slings.* (1) Table G–1 in § 1502.68 shall be used to determine the safe working load of various sizes of manila rope and manila rope slings at various angles, except that higher safe working loads are permissible when recommended by the manufacturer for specific, identifiable products, provided that a safety factor of not less than five (5) is maintained.

(b) *Wire rope and wire rope slings.* (1) Tables G–2 through G–5 in § 1502.68 shall be used to determine the safe working loads of various sizes and classifications of improved plow steel wire rope and wire rope slings with various types of terminals. For sizes, classifications and grades not included in these tables, the safe working load recommended by the manufacturer for specific, identifiable products shall be followed, provided that a safety factor of not less than five (5) is maintained.

(2) Protruding ends of strands in splices on slings and bridles shall be covered or blunted.

(3) Where U-bolt wire rope clips are used to form eyes, Table G–6 in § 1502.68 shall be used to determine the number and spacing of clips. The U-bolt shall be applied so that the "U" section is in contact with the dead end of the rope.

(4) Wire rope shall not be secured by knots.

(c) *Chains and chain slings.* (1) Tables G–7 and G–8 in § 1502.68 shall be used to determine the working load limit of various sizes of wrought iron and alloy steel chains and chain slings, except that higher safe working loads are permissible when recommended by the manufacturer for specific, identifiable products.

(2) All sling chains, including end fastenings, shall be given a visual inspection before being used on the job. A thorough inspection of all chains in use shall be made every 3 months. Each chain shall bear an indication of the month in which it was thoroughly inspected. The thorough inspection shall include inspection for wear, defective welds, deformation and increase in length or stretch.

(3) Interlink wear, not accompanied by stretch in excess of 5 percent, shall be noted and the chain removed from service when maximum allowable wear at any point of link, as indicated in Table G–9 in § 1502.68 has been reached.

(4) Chain slings shall be removed from service when, due to stretch, the increase in length of a measured section exceeds five (5) percent; when a link is bent, twisted or otherwise damaged; or when raised scarfs or defective welds appear.

(5) All repairs to chains shall be made under qualified supervision. Links or portions of the chain found to be defective as described in subparagraph (4) of this paragraph shall be replaced by links having proper dimensions and made of material similar to that of the chain. Before repaired chains are returned to service, they shall be proof tested to the proof test load recommended by the manufacturer.

(6) Wrought iron chains in constant use shall be annealed or normalized at intervals not exceeding six months when recommended by the manufacturer. The chain manufacturer shall be consulted for recommended procedures for annealing or normalizing. Alloy chains shall never be annealed.

(7) A load shall not be lifted with a chain having a kink or knot in it. A chain shall not be shortened by bolting, wiring or knotting.

§ 1502.63 Shackles and hooks.

(a) *Shackles.* (1) Table G–10 in § 1502.68 shall be used to determine the safe working loads of various sizes of shackles, except that higher safe working loads are permissible when recommended by the manufacturer for specific, identifiable products, provided that a safety factor of not less than five (5) is maintained.

(b) *Hooks.* (1) The manufacturer's recommendations shall be followed in determining the safe working loads of the various sizes and types of specific and identifiable hooks. All hooks for which no applicable manufacturer's recommendations are available shall be tested to twice the intended safe working load before they are initially put into use. The employer shall maintain a record of the dates and results of such tests.

(2) Loads shall be applied to the throat of the hook since loading the point overstresses and bends or springs the hook.

(3) Hooks shall be inspected periodically to see that they have not been bent by overloading. Bent or sprung hooks shall not be used.

§ 1502.64 Chain falls and pull-lifts.

(a) Chain falls and pull-lifts shall be clearly marked to show the capacity and the capacity shall not be exceeded.

(b) Chain falls shall be regularly inspected to ensure that they are safe, particular attention being given to the lift chain, pinion, sheaves and hooks for distortion and wear. Pull-lifts shall be regularly inspected to ensure that they are safe, particular attention being given to the ratchet, pawl, chain and hooks for distortion and wear.

(c) Straps, shackles, and the beam or overhead structure to which a chain fall or pull-lift is secured shall be of adequate strength to support the weight of load plus gear. The upper hook shall be moused or otherwise secured against coming free of its support.

§ 1502.65 Hoisting and hauling equipment.

(a) The moving parts of hoisting and hauling equipment shall be guarded.

(b) *Mobile crawler or truck cranes used on a vessel.* (1) The maximum manufacturer's rated safe working loads for the various working radii of the boom and the maximum and minimum radii at which the boom may be safely used with and without outriggers shall be conspicuously posted near the controls and shall be visible to the operator. A radius indicator shall be provided.

(2) The posted safe working loads of mobile crawler or truck cranes under the conditions of use shall not be exceeded.

(3) The area within the swing radius of the body of a crawler or truck crane and the extended parts thereof shall be guarded in such a manner as to prevent an employee from being in such a position as to be struck by the crane or

caught between the crane and fixed parts of the vessel or of the crane itself.

(c) *Marine railways.* (1) The cradle or carriage on the marine railway shall be positively blocked or secured when in the hauled position to prevent it from being accidentally released.

§ 1502.66 Use of gear.

(a) Loads shall be safely rigged before being hoisted.

(b) Plates shall be handled on and off hulls by means of shackles whenever possible. Clips or pads of ample size shall be welded to the plate to receive the shackle pins when there are no holes in the plate. When it is not possible to make holes in or to weld pads to the plate, alligator tongs, grab hooks, grab clamps or screw clamps may be used. In such cases special precautions shall be taken to keep employees from under such lifts.

(c) Tag lines shall be provided on loads likely to swing or to need guidance.

(d) When slings are secured to eyebolts, the slings shall be so arranged, using spreaders if necessary, that the pull is within 20 degrees of the axis of the bolt.

(e) Slings shall be padded by means of wood blocks or other suitable material where they pass over sharp edges or corners of loads so as to prevent cutting or kinking.

(f) Skips shall be rigged to be handled by not less than 3 legged bridles, and all legs shall always be used. When open end skips are used, means shall be taken to prevent the contents from falling.

(g) Loose ends of idle legs of slings in use shall be hung on the hook.

(h) Employees shall not be permitted to ride the hook or the load.

(i) Loads (tools, equipment or other materials) shall not be swung or suspended over the heads of employees.

(j) Pieces of equipment or structure susceptible to falling or dislodgement shall be secured as early as possible.

(k) An individual who is familiar with the signal code in use shall be assigned to act as a signalman when the hoist operator cannot see the load being handled. Communications shall be made by means of clear and distinct visual or auditory signals except that verbal signals shall not be permitted.

(l) Pallets, when used, shall be of such material and construction and so maintained as to safely support and carry the loads being handled on them.

(m) A section of hatch through which materials or equipment are being raised, lowered, moved or otherwise shifted by a crane, winch, hoist or derrick, shall be completely opened. The beams and pontoons left in place adjacent to an opening shall be sufficiently lashed, locked or otherwise secured to prevent them from being unshipped.

(n) Before loads or empty lifting gear are raised, lowered, or swung, clear and sufficient advance warning shall be given to employees in the vicinity of such operations.

(o) At no time shall an employee be permitted to place himself in a hazardous position between a swinging load and a fixed object.

§ 1502.67 Qualifications of operators.

(a) When ship's gear is used to hoist materials aboard, a competent person shall determine that the gear is properly rigged, that it is in safe condition, and that it will not be overloaded by the size and weight of the lift.

(b) Only those employees who understand the signs, notices, and operating instructions, and are familiar with the signal code in use, shall be permitted to operate a crane, winch, or other power operated hoisting apparatus.

(c) No employee known to have defective uncorrected eyesight or hearing, or to be suffering from heart disease, epilepsy, or similar ailments which may suddenly incapacitate him, shall be permitted to operate a crane, winch or other power operated hoisting apparatus.

(d) No minor under eighteen (18) years of age shall be employed in occupations involving the operation of any power-driven hoisting apparatus or assisting in such operations by work such as hooking on, loading slings, rigging gear, etc.

§ 1502.68 Tables.

TABLE E-1

DIMENSIONS AND SPACING OF WOOD INDEPENDENT-POLE SCAFFOLD MEMBERS

Structural Members	Light duty (Up to 25 pounds per square foot)			Heavy duty (25 to 75 pounds per square foot)		
	Height in feet			Height in feet		
	24 or less	24–40	40–60	24 or less	24–40	40–60
Poles or uprights (in inches)	2 x 4	3 x 4 or 2 x 6	4 x 4	3 x 4	4 x 4	4 x 6
Bearers (in inches)	2 x 6	2 x 6	2 x 6	2 x 8	2 x 8	2 x 10
Ledgers (in inches)	2 x 6	2 x 6	2 x 6	2 x 8	2 x 8	2 x 8
Stringers (not supporting bearers) (in inches)	1 x 6	1 x 6	1 x 6	1 x 6	1 x 6	1 x 6
Braces (in inches)	1 x 4	1 x 6	1 x 6	1 x 6	1 x 6	1 x 6
Pole spacing—longitudinally (in feet)	7½	7½	7½	7	7	7
Pole spacing—transversely (in feet)	6½ min	7½ min	8½ min	6½	10	10
Ledger spacing—vertically (in feet)	7	7	7	4½	4½	4½

TABLE E-2

SPECIFICATIONS FOR SIDE RAILS OF LADDERS

Length (in feet)	Cross section (in inches)	
	At ends	At center
15	1⅞ x 2¾	1⅞ x 3¾
16	1⅞ x 2¾	1⅞ x 3¾
18	1⅞ x 3	1⅞ x 4
20	1⅞ x 3	1⅞ x 4
24	1⅞ x 3	1⅞ x 4½

TABLE E-3

SPECIFICATIONS FOR THE CONSTRUCTION OF HORSES

Structural members	Height in feet		
	Up to 10	10 to 16	16 to 20
	Inches	*Inches*	*Inches*
Legs	2 x 4	3 x 4	4 x 6
Bearers or headers	2 x 6	2 x 8	4 x 6
Crossbraces	2 x 4 or 1 x 8	2 x 4	2 x 6
Longitudinal braces	2 x 4	2 x 6	2 x 6

TABLE E-4

SAFE CENTER LOADS FOR SCAFFOLD PLANK OF 1,100 POUNDS FIBRE STRESS

Span in Feet	Lumber dimensions in inches									
	A	B	A	B	A	B	A	B	A	B
	2 x 10	1⅝ x 9¼	2 x 12	1⅝ x 11⅛	3 x 8	2⅝ x 7½	3 x 10	2⅝ x 9¼	3 x 12	2⅝ x 11⅛
6	256	309	526	667	807					
8	192	232	395	500	605					
10	153	186	316	400	484					
12	128	155	263	333	404					
14	110	133	225	286	346					
16	-------	116	197	250	303					

(A)—Rough lumber.
(B)—Dressed lumber.

TABLE G-1
MANILA ROPE
(In pounds or tons of 2000 pounds)

Circumference	Diameter in Inches	Single Leg	60°	45°	30°
					
3/4	1/4	120 lbs.	204 lbs.	170 lbs.	120 lbs.
1	5/16	200	346	282	200
1-1/8	3/8	270	467	380	270
1-1/4	7/16	350	605	493	350
1-3/8	15/32	450	775	635	450
1-1/2	1/2	530	915	798	530
1-3/4	9/16	690	1190	973	690
2	5/8	880	1520	1240	880
2-1/4	3/4	1080	1870	1520	1080
2-1/2	13/16	1300	2250	1830	1300
2-3/4	7/8	1540	2660	2170	1540
3	1	1800	3120	2540	1800
3-1/4	1-1/16	1.0 Tons	1.7 Tons	1.4 Tons	1.0 Tons
3-1/2	1-1/8	1.2	2.1	1.7	1.2
3-3/4	1-1/4	1.35	2.3	1.9	1.35
4	1-5/16	1.5	2.6	2.1	1.5
4-1/2	1-1/2	1.8	3.1	2.5	1.8
5	1-5/8	2.25	3.9	3.2	2.25
5-1/2	1-3/4	2.6	4.5	3.7	2.6
6	2	3.1	5.4	4.4	3.1
6-1/2	2-1/8	3.6	6.2	5.1	3.6

TABLE G-2

RATED CAPACITIES FOR IMPROVED PLOW STEEL, INDEPENDENT WIRE ROPE CORE, WIRE ROPE AND WIRE ROPE SLINGS

(In tons of 2000 pounds)

Rope Dia. Inches	SINGLE LEG					
	Vertical			Choker		
	A	B	C	A	B	C
6x19 CLASSIFICATION						
1/4"	.59	.56	.53	.44	.42	.40
3/8"	1.3	1.2	1.1	.98	.93	.86
1/2"	2.3	2.2	2.0	1.7	1.6	1.5
5/8"	3.6	3.4	3.0	2.7	2.5	2.2
3/4"	5.1	4.9	4.2	3.8	3.6	3.1
7/8"	6.9	6.6	5.5	5.2	4.9	4.1
1"	9.0	8.5	7.2	6.7	6.4	5.4
1-1/8"	11.	10.	9.0	8.5	7.8	6.8
6x37 CLASSIFICATION						
1-1/4"	13.	12.	10.	9.9	9.2	7.9
1-3/8"	16.	15.	13.	12.	11.	9.6
1-1/2"	19.	17.	15.	14.	13.	11.
1-3/4"	26.	24.	20.	19.	18.	15.
2"	33.	30.	26.	25.	23.	20.
2-1/4"	41.	38.	33.	31.	29.	25.

(A) - Socket or Swaged Terminal attachment.
(B) - Mechanical Sleeve attachment.
(C) - Hand Tucked Splice attachment.

TABLE G-3
RATED CAPACITIES FOR IMPROVED PLOW STEEL, INDEPENDENT WIRE ROPE CORE, WIRE ROPE SLINGS
(In tons of 2000 pounds)

TWO - LEG BRIDLE OR BASKET HITCH												
Rope Dia. Inches	Vertical			60°			45°			30°		
	A	B	C	A	B	C	A	B	C	A	B	C
6x19 CLASSIFICATION												
1/4"	1.2	1.1	1.0	1.0	.97	.92	.83	.79	.75	.59	.56	.53
3/8"	2.6	2.5	2.3	2.3	2.1	2.0	1.8	1.8	1.6	1.3	1.2	1.1
1/2"	4.6	4.4	3.9	4.0	3.8	3.4	3.2	3.1	2.8	2.3	2.2	2.0
5/8"	7.2	6.8	6.0	6.2	5.9	5.2	5.1	4.8	4.2	3.6	3.4	3.0
3/4"	10.	9.7	8.4	8.9	8.4	7.3	7.2	6.9	5.9	5.1	4.9	4.2
7/8"	14.	13.	11.	12.	11.	9.6	9.8	9.3	7.8	6.9	6.6	5.5
1"	18.	17.	14.	15.	15.	12.	13.	12.	10.	9.0	8.5	7.2
1-1/8"	23.	21.	18.	19.	18.	16.	16.	15.	13.	11.	10.	9.0
6x37 CLASSIFICATION												
1-1/4"	26.	24.	21.	23.	21.	18.	19.	17.	15.	13.	12.	10.
1-3/8"	32.	29.	25.	28.	25.	22.	22.	21.	18.	16.	15.	13.
1-1/2"	38.	35.	30.	33.	30.	26.	27.	25.	21.	19.	17.	15.
1-3/4"	51.	47.	41.	44.	41.	35.	36.	33.	29.	26.	24.	20.
2"	66.	61.	53.	57.	53.	46.	47.	43.	37.	33.	30.	26.
2-1/4"	83.	76.	66.	72.	66.	57.	58.	54.	47.	41.	38.	33.

(A) - Socket or Swaged Terminal Attachment.
(B) - Mechanical Sleeve Attachment.
(C) - Hand Tucked Splice Attachment.

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TABLE G-4
RATED CAPACITIES FOR IMPROVED PLOW STEEL, FIBER CORE, WIRE ROPE AND WIRE ROPE SLINGS
(In tons of 2000 pounds)

Rope Dia. Inches	SINGLE LEG					
	Vertical			Choker		
	A	B	C	A	B	C
6x19 CLASSIFICATION						
1/4	.55	.51	.49	.41	.38	.37
3/8	1.2	1.1	1.1	.91	.85	.80
1/2	2.1	2.0	1.8	1.6	1.5	1.4
5/8	3.3	3.1	2.8	2.5	2.3	2.1
3/4	4.8	4.4	3.9	3.6	3.3	2.9
7/8	6.4	5.9	5.1	4.8	4.5	3.9
1	8.4	7.7	6.7	6.3	5.8	5.0
1-1/8	10.	9.5	8.4	7.9	7.1	6.3
6x37 CLASSIFICATION						
1-1/4	12.	11.	9.8	9.2	8.3	7.4
1-3/8	15.	13.	12.	11.	10.	8.9
1-1/2	17.	16.	14.	13.	12.	10.
1-3/4	24.	21.	19.	18.	16.	14.
2	31.	28.	25.	23.	21.	18.

(A) - Socket or Swaged Terminal attachment.
(B) - Mechanical Sleeve attachment.
(C) - Hand Tucked Splice attachment.

TABLE G-5
RATED CAPACITIES FOR IMPROVED PLOW STEEL, FIBER CORE, WIRE ROPE SLINGS
(In tons of 2000 pounds)

Rope Dia. Inches	TWO - LEG BRIDLE OR BASKET HITCH											
	Vertical			60°			45°			30°		
	A	B	C	A	B	C	A	B	C	A	B	C
6x19 CLASSIFICATION												
1/4	1.1	1.0	.99	.95	.88	.85	.77	.72	.70	.55	.51	.49
3/8	2.4	2.2	2.1	2.1	1.9	1.8	1.7	1.6	1.5	1.2	1.1	1.1
1/2	4.3	3.9	3.7	3.7	3.4	3.2	3.0	2.8	2.6	2.1	2.0	1.8
5/8	6.7	6.2	5.6	5.8	5.3	4.8	4.7	4.4	4.0	3.3	3.1	2.8
3/4	9.5	8.8	7.8	8.2	7.6	6.8	6.7	6.2	5.5	4.8	4.4	3.9
7/8	13.	12.	10.	11.	10.	8.9	9.1	8.4	7.3	6.4	5.9	5.1
1	17.	15.	13.	14.	13.	11.	12.	11.	9.4	8.4	7.7	6.7
1-1/8	21.	19.	17.	18.	16.	14.	15.	13.	12.	10.	9.5	8.4
6x37 CLASSIFICATION												
1-1/4	25.	22.	20.	21.	19.	17.	17.	16.	14.	12.	11.	9.8
1-3/8	30.	27.	24.	26.	23.	20.	21.	19.	17.	15.	13.	12.
1-1/2	35.	32.	28.	30.	27.	24.	25.	22.	20.	17.	16.	14.
1-3/4	48.	43.	38.	41.	37.	33.	34.	30.	27.	24.	21.	19.
2	62.	55.	49.	53.	48.	43.	43.	39.	35.	31.	28.	25.

(A) - Socket or Swaged Terminal attachment.
(B) - Mechanical Sleeve attachment.
(C) - Hand Tucked Splice attachment.

TABLE G-6

NUMBER AND SPACING OF U-BOLT WIRE ROPE CLIPS

Improved Plow Steel, Rope Diameter, Inches	Number of Clips		Minimum Spacing, Inches
	Drop Forged	Other Material	
½	3	4	3
⅝	3	4	3¾
¾	4	5	4½
⅞	4	5	5¼
1	4	6	6
1⅛	5	6	6¾
1¼	5	7	7½
1⅜	6	7	8¼
1½	6	8	9

TABLE G-7
WROUGHT IRON CHAIN
(In pounds or tons of 2000 pounds)

Nominal Size Chain Stock Inch.	Single Leg	60°	45°	30°
* 1/4	1060	1835	1500	1060
* 5/16	1655	2865	2340	1655
3/8	2385	2.1	3370	2385
* 7/16	3250	2.8	2.3	3250
1/2	2.1	3.7	3.0	2.1
* 9/16	2.7	4.6	3.8	2.7
5/8	3.3	5.7	4.7	3.3
3/4	4.8	8.3	6.7	4.8
7/8	6.5	11.2	9.2	6.5
1	8.5	14.7	12.0	8.5
1-1/8	10.0	17.3	14.2	10.0
1-1/4	12.4	21.4	17.5	12.4
1-3/8	15.0	25.9	21.1	15.0
1-1/2	17.8	30.8	25.2	17.8
1-5/8	20.9	36.2	29.5	20.9
1-3/4	24.2	42.0	34.3	24.2
1-7/8	27.6	47.9	39.1	27.6
2	31.6	54.8	44.8	31.6

* These sizes of wrought iron chain are no longer manufactured in the United States.

TABLE G-8
ALLOY STEEL CHAIN
(In tons of 2000 pounds)

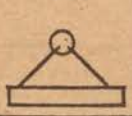
Nominal Size Chain Stock Inch.	Single Leg 	60° 	45° 	30° 
1/4	1.62	2.82	2.27	1.62
3/8	3.30	5.70	4.65	3.30
1/2	5.62	9.75	7.90	5.62
5/8	8.25	14.25	11.65	8.25
3/4	11.5	19.9	16.2	11.5
7/8	14.3	24.9	20.3	14.3
1	19.3	33.5	27.3	19.8
1-1/8	22.2	38.5	31.5	22.2
1-1/4	28.7	49.7	40.5	28.7
1-3/8	33.5	58.0	47.0	33.5
1-1/2	39.7	68.5	56.0	39.7
1-5/8	42.5	73.5	59.5	42.5
1-3/4	47.0	81.5	62.0	47.0

TABLE G-9
MAXIMUM ALLOWABLE WEAR AT ANY POINT OF LINK

Chain size in inches	Maximum allowable wear in fraction of inches
¼ (9/32)	3/64
3/8	5/64
1/2	7/64
5/8	9/64
3/4	5/32
7/8	11/64
1	3/16
1⅛	7/32
1¼	¼
1⅜	9/32
1½	5/16
1¾	11/32

TABLE G-10
SAFE WORKING LOADS FOR SHACKLES
[In tons of 2000 pounds]

Material size (inches)	Pin diameter (inches)	Safe working load
½	⅝	1.4
⅝	¾	2.2
¾	⅞	3.2
⅞	1	4.3
1	1⅛	5.6
1⅛	1¼	6.7
1¼	1⅜	8.2
1⅜	1½	10.0
1½	1⅝	11.9
1¾	2	16.2
2	2¼	21.2

TABLE I-1
FILTER LENSES FOR PROTECTION AGAINST RADIANT ENERGY

Operation	Shade No.
Soldering	2
Torch Brazing	3 or 4
Light cutting, up to 1 inch	3 or 4
Medium cutting, 1-6 inches	4 or 5
Heavy cutting, over 6 inches	5 or 6
Light gas welding, up to ½ inch	4 or 5
Medium gas welding, ½-½ inch	5 or 6
Heavy gas welding, over ½ inch	6 or 8
Shielded Metal-Arc Welding 1/16- to 5/32-inch electrodes	10
Inert-gas Metal Arc Welding (Nonferrous) 1/16- to 5/32-inch electrodes.	11
Inert-gas Metal-Arc Welding (Ferrous) 1/16- to 5/32-inch electrodes.	12
Shielded Metal-Arc Welding:	
3/16- to ¼-inch electrodes	12
5/16- and ⅜-inch electrodes	14
Atomic Hydrogen Welding	10 to 14
Carbon Arc Welding	14

Subpart H—Tools and Related Equipment

§ 1502.71 General precautions.

(a) Hand lines, slings, or tackles of adequate strength shall be provided to handle tools, materials and equipment so that employees can have their hands free when using ship's ladders and access ladders. The use of hoses or electric cords for this purpose shall be prohibited.

(b) When air tools of the reciprocating type are not in use, the discs and tools shall be removed.

(c) All portable, power-driven circular saws shall be equipped with guards above and below the base plate or shoe. The upper guard shall cover the saw to the depth of the teeth, except for the minimum arc required to permit the base to be tilted for bevel cuts. The lower guard shall cover the saw to the depth of the teeth, except for the minimum arc required to allow proper retraction and contact with the work. When the tool is withdrawn from the work, the lower guard shall automatically and instantly return to the covering position.

(d) The moving parts of machinery on dry docks shall be guarded.

(e) Before use, pneumatic tools shall be secured to the extension hose or whip by some positive means to prevent the tool from becoming accidentally disconnected from the whip.

§ 1502.72 Portable electric tools.

(a) The frames of portable electric tools and appliances shall be grounded either through a third wire in the cable containing the circuit conductors or through a separate wire which is grounded at the source of the current.

(b) Grounding circuits, other than by means of the structure of the vessel on which the tool is being used, shall be checked to ensure that the circuit between the ground and the grounded power conductor has resistance which is low enough to permit sufficient current to flow to cause the fuse or circuit breaker to interrupt the current.

(c) Portable electric tools which are held in the hand shall be equipped with switches of a type which must be manually held in the closed position.

(d) Worn or frayed electric cables shall not be used.

§ 1502.73 Hand tools.

(a) Employers shall not issue or permit the use of unsafe hand tools.

(b) Wrenches, including crescent, pipe, end and socket wrenches, shall not be used when jaws are sprung to the point that slippage occurs.

(c) Impact tools, such as drift pins, wedges, and chisels, shall be kept free of mushroomed heads.

(d) The wooden handles of tools shall be kept free of splinters or cracks and shall be kept tight in the tool.

§ 1502.74 Abrasive wheels.

(a) Floor stand and bench mounted abrasive wheels used for external grinding shall be provided with safety guards (protection hoods). The maximum angular exposure of the grinding wheel periphery and sides shall be not more than 90 degrees, except that when work requires contact with the wheel below the horizontal plane of the spindle, the angular exposure shall not exceed 125

degrees. In either case the exposure shall begin not more than 65 degrees above the horizontal plane of the spindle. Safety guards shall be strong enough to withstand the effect of a bursting wheel.

(b) Floor and bench mounted grinders shall be provided with work rests which are rigidly supported and readily adjustable. Such work rests shall be kept a distance not to exceed ⅛ inch from the surface of the wheel.

(c) All portable abrasive wheels used for external grinding shall be provided with safety guards (protection hoods) meeting the requirements of paragraph (e) of this section, except as follows:

(1) When the work location makes it impossible, in which case a wheel equipped with safety flanges as described in paragraph (f) of this section shall be used.

(2) When wheels 2 inches or less in diameter which are securely mounted on the end of a steel mandrel are used.

(d) Portable abrasive wheels used for internal grinding shall be provided with safety flanges (protection flanges) meeting the requirements of paragraph (f) of this section, except as follows:

(1) When wheels 2 inches or less in diameter which are securely mounted on the end of a steel mandrel are used.

(2) If the wheel is entirely within the work being ground while in use.

(e) When safety guards are required, they shall be so mounted as to maintain proper alignment with the wheel, and the guard and its fastenings shall be of sufficient strength to retain fragments of the wheel in case of accidental breakage. The maximum angular exposure of the grinding wheel periphery and sides shall not exceed 180 degrees.

(f) When safety flanges are required, they shall be used only with wheels designed to fit the flanges. Only safety flanges of a type and design and properly assembled so as to insure that the pieces of the wheel will be retained in case of accidental breakage shall be used.

(g) All abrasive wheels shall be closely inspected and ring tested before mounting to ensure that they are free from cracks or defects.

(h) Grinding wheels shall fit freely on the spindle and shall not be forced on. The spindle nut shall be tightened only enough to hold the wheel in place.

(i) The power supply shall be sufficient to maintain the rated spindle speed under all conditions of normal grinding. The rated maximum speed of the wheel shall not be exceeded.

(j) All employees using abrasive wheels shall be protected by eye protection equipment in accordance with the requirements of § 1502.81 (a) and (b), except when adequate eye protection is afforded by eye shields which are permanently attached to the bench or floor stand.

§ 1502.75 Powder actuated fastening tools.

(a) *General precautions.* (1) Powder actuated fastening tools shall be tested each day before loading to ensure that the safety devices are in proper working condition. Any tool found not to be in proper working order shall be immediately removed from service until repairs are made.

(2) Powder actuated fastening tools shall not be used in an explosive or flammable atmosphere.

(3) All tools shall be used with the type of shield or muzzle guard appropriate for a particular use.

(4) Fasteners shall not be driven into very hard or brittle materials, such as cast iron, glazed tile, surface hardened steel, glass block, live rock, face brick or hollow tile.

(5) Fasteners shall not be driven into soft materials unless such materials are backed by a substance that will prevent the pin or fastener from passing completely through and creating a flying missile hazard on the opposite side.

(6) Unless a special guard, fixture or jig is used, fasteners shall not be driven directly into materials such as brick or concrete within 3 inches of the unsupported edge or corner, or into steel surfaces within ½ inch of the unsupported edge or corner. When fastening other material, such as 2 x 4 inch lumber to a concrete surface, fasteners of greater than 7/32-inch shank diameter shall not be used and fasteners shall not be driven within 2 inches of the unsupported edge or corner of the work surface.

(7) Fasteners shall not be driven through existing holes unless a positive guide is used to secure accurate alignment.

(8) No attempt shall be made to drive a fastener into a spalled area caused by an unsatisfactory fastening.

(9) Employees using powder actuated fastening tools shall be protected by eye protection equipment in accordance with the requirements of § 1502.81 (a) and (b).

(b) *Instruction of operators.* Before employees are permitted to use powder actuated fastening tools, they shall have been thoroughly instructed by a competent person with respect to the requirements of paragraph (a) of this section and the safe use of such tools as follows:

(1) Before using a tool, the operator shall inspect it to determine that it is clean, that all moving parts operate freely and that the barrel is free from obstructions.

(2) When a tool develops a defect during use, the operator shall immediately cease to use it and shall notify his supervisor.

(3) Tools shall not be loaded until just prior to the intended firing time and the tool shall not be left unattended while loaded.

(4) The tool, whether loaded or empty, shall not be pointed at any person, and hands shall be kept clear of the open barrel end.

(5) In case of a misfire, the operator shall hold the tool in the operating position for at least 15 seconds and shall continue to hold the muzzle against the work surface during disassembly or opening of the tool and removal of the powder load.

(6) Neither tools nor powder charges shall be left unattended in places where they would be available to unauthorized persons.

Subpart I—Personal Protective Equipment

§ 1502.81 Eye protection.

(a) *General precautions.* (1) All eye protection equipment required by these regulations shall meet the specifications prescribed by the American Standard Safety Code for Head, Eye and Respiratory Protection, Z2.1.

(2) Eye protection equipment shall be maintained in good condition.

(3) Eye protection equipment which has previously been used shall be cleaned and disinfected before it is issued by the employer to another employee.

(4) Employees who wear corrective spectacles while engaged in eye hazardous work shall be protected by eye protection equipment of a type which can be worn over personal spectacles, except that glasses with prescription ground safety lenses may be worn in lieu of cover goggles when such glasses provide suitable protection against the hazard involved.

(b) *Protection against impact.* (1) In any operations such as chipping, caulking, drilling, riveting, grinding, and pouring babbitt metal, in which the eye hazard of flying particles, molten metal, or liquid chemical exists, employees shall be protected by suitable face shields or goggles meeting the requirements of paragraph (a) of this section.

(c) *Protection against radiant energy.* (1) In any operation in which the eye hazard of injurious light rays or other radiant energy exists, depending upon the intensity of the radiation to which employees are exposed, they shall be protected by spectacles, cup goggles, helmets or hand shields equipped with filter lenses in accordance with the requirements of paragraphs (a) and (c)(2) of this section.

(2) Filter lenses shall be of a shade number appropriate to the type of work to be performed as indicated in Table I–1 in § 1502.68 except that variations of one or two shade numbers are permissible to suit individual preferences.

(3) If filter lenses are used in the goggles worn under the helmet, the shade number of the lens in the helmet may be reduced so that the sum of the shade numbers of the two lenses will equal the value shown in Table I–1 in § 1502.68.

§ 1502.82 Respiratory protection.

(a) *General.* (1) All respiratory protective equipment required by these regulations shall carry the U.S. Bureau of Mines approval for the use for which it is intended. Respiratory protective equipment shall be used only for the purpose intended and no modifications of the equipment shall be made.

(2) Respiratory protective equipment shall be inspected regularly and maintained in good condition. Gas mask canisters and chemical cartridges shall be replaced as necessary so as to provide complete protection. Mechanical filters shall be cleaned or replaced as necessary so as to avoid undue resistance to breathing.

(3) Respiratory protective equipment which has been previously used shall be

cleaned and disinfected before it is issued by the employer to another employee. Emergency rescue equipment shall be cleaned and disinfected immediately after each use.

(4) Employees required to use respiratory protective equipment approved for use in atmospheres immediately dangerous to life shall be thoroughly trained in its use. Employees required to use other types of respiratory protective equipment shall be instructed in the use and limitations of such equipment.

(5) When an air line respirator is used, the air line shall be fitted with a pressure regulating valve and a filter which will remove oil, water, and rust particles. The air intake shall be from a source which is free from all contaminants, such as the exhaust from internal combustion engines.

(6) In all cases, when an employee is stationed outside a compartment, tank or space as a tender or safety man for men working inside in an atmosphere immediately dangerous to life, the tender shall have immediately available for emergency use repiratory protective equipment equivalent to that required for the men in the compartment. When a tender is stationed outside a compartment for men working inside in an atmosphere not immediately dangerous to life, the tender shall wear respiratory protective equipment equivalent to that required for the men in the compartment if he is exposed for prolonged periods to the same concentration of atmospheric contaminants.

(b) *Protection in atmospheres immediately dangerous to life.* (1) Atmospheres immediately dangerous to life are those which contain less than 16.5 percent oxygen, or which by reason of the high toxicity of the contaminant, as in fumigation, or high concentration of the contaminant, as with carbon dioxide, would endanger the life of a person breathing them for even a short period of time.

(2) In atmospheres immediately dangerous to life the only approved types of respiratory protective equipment are the following:

(i) Self-contained breathing apparatus, in which the wearer carries with him a supply of oxygen, air, or an oxygen generating material.

(ii) Hose mask with blower, in which a hand or motor operated blower supplies air at high volume and low pressure through a large diameter hose through which the wearer can draw air in case the blower fails.

(iii) If there is known to be more than 16 percent oxygen and less than 2 percent gas by volume, a gas mask equipped with a canister approved for the particular type gas involved.

NOTE: A gas mask offers absolutely no protection in an atmosphere deficient in oxygen.

(3) Work in atmospheres immediately dangerous to life shall be performed only in an emergency, as when rescuing a man who has been overcome or when shutting off a source of contamination that cannot otherwise be controlled. When an employee enters such an atmosphere he shall be provided with and use an adequate, attended life line.

(4) In the vicinity of each vessel in which there is a danger of employees being exposed to an atmosphere immediately dangerous to life the employer shall have on hand and ready for use respiratory protective equipment approved for such use. When such equipment is required, one or more persons shall be thoroughly trained in the use of the equipment.

(c) *Protection against gaseous contaminants not immediately dangerous to life.* (1) Gaseous contaminants not immediately dangerous to life are gases present in concentrations that could be breathed for a short period without endangering the life of a person breathing them, but which might produce discomfort and possible injury after a prolonged single exposure or repeated short exposures.

(2) When employees are exposed to a gaseous contaminated atmosphere not immediately dangerous to life, they shall be protected by respiratory protective equipment approved for use in the type and concentration of the gaseous contaminant as follows:

(i) In high or unknown concentrations, a hose mask or an air line respirator. The use of either a hose mask or an air line respirator in lower concentrations is permissible.

(ii) In concentration of ammonia of less than 3 percent, or of other gases less than 2 percent, by volume, a canister type gas mask equipped with the proper type of canister. Different canisters are approved for specific use against the following gases or groups of gases: acid gases, hydrocyanic acid gas, chlorine gas, organic vapors, ammonia gas, carbon monoxide, or combination of the above.

(iii) In low concentrations (less than 0.1 percent by volume), a chemical cartridge respirator equipped with the type of cartridge approved for use against the particular gases or groups of gases listed in subdivision (ii) of this subparagraph.

(d) *Protection against particulate contaminants not immediately dangerous to life.* (1) When employees are exposed to unsafe concentrations of particulate contaminants, such as dusts and fumes, mists and fogs or combinations of solids and liquids, they shall be protected by either air line or filter respirators, except as otherwise provided in the regulations of this part.

(2) Filter respirators shall be equipped with the proper type of filter. Different filters are approved for specific protection against groups of contaminants, as follows:

(i) Pneumoconiosis-producing dust and nuisance dust filters which provide respiratory protection against pneumoconiosis-producing dusts, such as aluminum, cellulose, cement, charcoal, coal, coke, flour, gypsum, iron ore, limestone and wood.

(ii) Toxic dust filters which provide respiratory protection against toxic dusts that are not significantly more toxic than lead, such as arsenic, cadmium, chromium, lead, manganese, selenium, vanadium, and their compounds.

(iii) Mist filters which provide respiratory protection against pneumoconiosis-producing mists, chromic acid mists, and nuisance mists.

(iv) Fume filters which provide respiratory protection against fumes (solid dispersoids or particulate matter formed by the condensation of vapors, such as those from heated metals and other substances).

(v) Filters which provide respiratory protection against combinations of two or more of the contaminants described in subdivisions (i) through (iv) of this subparagraph.

(e) *Protection against combinations of gaseous and particulate contaminants not immediately dangerous to life.* (1) When employees are exposed to combinations of gaseous and particulate contaminants not immediately dangerous to life, as in spray painting, they shall be protected by respiratory protective equipment approved for use in the type and concentration of the contaminants, as follows:

(i) In high or unknown concentrations, a hose mask or an air line respirator. The use of either a hose mask or an air line respirator is permissible in lower concentrations.

(ii) In concentrations of gaseous contaminants of less than 2 percent by volume, a canister type gas mask with a combination canister approved for the particular type of gaseous contaminant as specified in paragraph (c)(2) of this section and a filter for the particular type of particulate contaminant as specified in paragraph (d)(1) of this section.

(iii) In low concentrations of gaseous contaminants (less than 0.1 percent by volume) a respirator equipped with the type of cartridge and filter as specified in subdivision (ii) of this subparagraph.

§ 1502.83 Head, foot and body protection.

(a) When employees are working in areas where there is danger of falling objects they shall be protected by protective hats.

(b) Protective hats shall meet the specifications contained in the American Standard Safety Code for Head, Eye and Respiratory Protection, Z–2.1. Hats without dielectric strength shall not be used where there is the possibility of contact with electric conductors.

(c) Protective hats which have been previously worn shall be cleaned and disinfected before they are issued by the employer to another employee.

(d) The employer shall arrange through means, such as vendors or local stores, or otherwise, to make safety shoes readily available to all employees, and shall encourage their use. Metal toe caps from which the covering has been worn shall be insulated when employees are working on exposed energized circuits of the vessel's electrical system.

(e) Employees shall not be permitted to wear excessively greasy clothing when performing hot work operations.

(f) Employees shall be protected by suitable gloves when engaged in operations hazardous to their hands.

§ 1502.84 Life saving equipment.

(a) *Buoyant working vests.* (1) When employees are working from small boats or floats, near the unguarded edges of decks, or over water on scaffolds with-

out guard rails, they shall be protected by U.S. Coast Guard approved buoyant working vests.

(b) *Safety belts and life lines.* (1) When employees are working aloft, or over a solid surface on staging more than 5 feet high without guard rails, they shall be protected by safety belts equipped with life lines which are secured with a minimum amount of slack to a fixed structure.

(2) When employees are working in atmospheres immediately dangerous to life, they shall be protected by a safety belt and an adequate, attended life line.

(3) Prior to each use, belts and life lines shall be inspected for dry rot, chemical damage or other defects which may affect their strength. Defective belts and life lines shall not be used.

(4) When employees are working in any location requiring a safety belt and a life line, as required in paragraph (b) (1) or (2) of this section, care shall be exercised to ensure that the life line is not cut, pinched or led over a sharp edge. In hot work operations or those involving the use of acids or caustics, the line shall be kept clear to avoid its being burned or weakened.

(c) *Life rings and ladders.* (1) At least three 30-inch Coast Guard approved life rings with lines attached shall be kept in easily visible and readily accessible places aboard each vessel afloat on which work is being performed. Life rings shall be located, one forward, one aft, and one on the gangway, except on vessels under 200 feet in length, in which case one at the gangway will be sufficient.

(2) At least one life ring with a line attached shall be located on each staging float alongside a vessel on which work is being performed.

(3) At least 90 feet of line shall be attached to each life ring. Life rings and lines shall be maintained in good condition.

(4) In the vicinity of each vessel on which employees are working over water or close to unguarded deck edges there shall be at least one portable or permanent ladder of sufficient length to assist employees to reach safety in the event that they fall into the water.

Subpart J—Ship's Machinery and Piping Systems

§ 1502.91 Ship's boilers.

(a) Before work is performed in the fire, steam, or water spaces of boilers, the employer shall ensure that the following steps are taken:

(1) The isolation and shut-off valves connecting the dead boilers with the live boilers shall be secured, blanked, and tagged indicating that employees are working in the boilers. This tag shall not be removed nor the valves unblanked until it is determined that this may be done without creating a hazard to the employees working in the boilers, or until the work is completed.

(2) Drain connections to atmosphere on all of the dead interconnecting systems shall be opened.

(3) A warning sign calling attention to the fact that employees are working in the boilers shall be hung in a conspicuous location in the engine room. This sign shall not be removed until it is determined that the work is completed and all employees are out of the boilers.

§ 1502.92 Ship's piping systems.

(a) Before work is performed on a valve, fitting, or section of piping in a piping system that has carried a high temperature medium, the employer shall ensure that the following steps are taken:

(1) The isolation and shut-off valves connecting the dead system with a live system or systems, shall be secured, blanked, and tagged indicating employees are working on the system. This tag shall not be removed nor the valves unblanked until it is determined that this may be done without creating a hazard to the employees working on the system, or until the work on the system is completed.

(2) Drain connections to atmosphere on all of the dead interconnecting systems shall be opened.

§ 1502.93 Ship's propulsion machinery.

(a) Before work is performed on the main engine, reduction gear, or connecting accessories, the employer shall ensure that the following steps are taken:

(1) The jacking gear shall be engaged to prevent the main engine from turning over. A sign shall be posted at the throttle indicating that the jacking gear is engaged. This sign shall not be removed until the jacking gear can be safely disengaged.

(2) If the jacking gear is steam driven, the stop valves to the jacking gear shall be secured, locked, and tagged indicating that employees are working on the main engine.

(3) If the jacking gear is electrically driven, the circuit controlling the jacking gear shall be deenergized by tripping the circuit breaker, opening the switch or removing the fuse, whichever is appropriate. The breaker, switch, or fuse location shall be tagged indicating that employees are working on the main engine.

(b) Before the jacking engine is operated, the following precautions shall be taken:

(1) A check shall be made to ensure that all employees, equipment, and tools are clear of the engine, reduction gear, and its connecting accessories.

(2) A check shall be made to ensure that all employees, equipment and tools are free of the propeller.

(c) Before work is started on or in the immediate vicinity of the propeller, a warning sign calling attention to the fact that employees are working in that area shall be hung in a conspicuous location in the engine room. This sign shall not be removed until it is determined that the work is completed and all employees are free of the propeller.

(d) Before the main engine is turned over (e.g., when warming up before departure or testing after an overhaul) a check shall be made to ensure that all employees, equipment, and tools are free of the propeller.

§ 1502.94 Ship's deck machinery.

(a) Before work is performed on the anchor windlass or any of its attached accessories, the employer shall ensure that the following steps are taken:

(1) The devil claws shall be made fast to the anchor chains.

(2) The riding pawls shall be in the engaged position.

(3) In the absence of devil claws and riding pawls, the anchor chains shall be secured to a suitable fixed structure of the vessel.

Subpart K—Portable, Unfired Pressure Vessels, Drums, and Containers, Other Than Ship's Equipment

§ 1502.101 Portable air receivers and other unfired pressure vessels.

(a) Portable, unfired pressure vessels, built after the effective date of this regulation, shall be marked and reported indicating that they have been designed and constructed to meet the standards of the American Society of Mechanical Engineers Boiler and Pressure Vessel Code, Section VIII, Rules for Construction of Unfired Pressure Vessels, 1963. They shall be subjected to a hydrostatic pressure test of one and one-half times the working pressure of the vessels.

(b) Portable, unfired pressure vessels, not built to the code requirements of paragraph (a) of this section, and built prior to the effective date of this regulation, shall be examined quarterly by a competent person. They shall be subjected yearly to a hydrostatic pressure test of one and one-half times the working pressure of the vessels.

(c) The relief valves on the portable, unfired pressure vessels in paragraphs (a) and (b) of this section shall be set to the safe working pressure of the vessels, or set to the lowest safe working pressure of the systems, whichever is lower.

(d) A record of such examinations and tests made in compliance with the requirements of paragraphs (a) and (b) of this section shall be maintained.

§ 1502.102 Drums and containers.

(a) Shipping drums and containers shall not be pressurized to remove their contents.

(b) A temporarily assembled pressurized piping system conveying hazardous liquids or gases shall be provided with a relief valve and by-pass to prevent rupture of the system and the escape of such hazardous liquids or gases.

(c) Pressure vessels, drums and containers containing toxic or flammable liquids or gases shall not be stored or used where they are subject to open flame, hot metal, or other sources of artificial heat.

(d) Unless pressure vessels, drums and containers of 30-gallon capacity or over containing flammable or toxic liquids or gases are placed in an out-of-the-way area where they will not be subject to physical injury from an outside source, barriers or guards shall be erected to protect them from such physical injury.

(e) Containers of 55 gallons or more capacity containing flammable or toxic liquid shall be surrounded by dikes or pans which enclose a volume equal to at least 25 percent of the total volume of the containers.

(f) Fire extinguishers adequate in number and suitable for the hazard shall

be provided. These extinguishers shall be located in the immediate area where pressure vessels, drums, and containers containing flammable liquids or gases are stored or in use. Such extinguishers shall be ready for use at all times.

Subpart L—Electrical Machinery

§ 1502.111 Electrical circuits and distribution boards.

(a) Before an employee is permitted to work on an electrical circuit, except when the circuit must remain energized for testing and adjusting, the circuit shall be deenergized by an authorized employee by opening the circuit breaker, opening the switch, or removing the fuse, whichever method is appropriate. The circuit breaker, switch or fuse location shall be tagged to indicate that an employee is working on the circuit. Such tags shall not be removed nor the circuit energized except by the authorized employee who placed the tag or by another employee authorized by the employer.

(b) When work is performed immediately adjacent to an open-front energized board or in back of an energized board, the board shall be covered or some other equal means shall be used to prevent contact with any of the energized parts.

APPENDIX I

THRESHOLD LIMIT VALUES FOR 1963

These values should be used as guides in the control of health hazards and should not be regarded as fine lines between safe and dangerous concentrations. They represent conditions under which it is believed that nearly all workers may be repeatedly exposed, day after day, without adverse effect. The values listed refer to time-weighted average concentrations for a normal workday. The amount by which these figures may be exceeded for short periods without injury to health depends upon a number of factors such as the nature of the contaminant, whether very high concentrations even for short periods produce acute poisoning, whether the effects are cumulative, the frequency with which high concentrations occur, and the duration of such periods. All must be taken into consideration in arriving at a decision as to whether a hazardous situation exists. Because it has been recognized that the threshold limits of certain acutely-acting substances may not provide a safety factor comparable to that of chronically-acting substances for which a time-weighted average applies, a "C" designation or "ceiling" has been affixed to such values indicating that the Threshold Limit Value should not be exceeded. The bases for the "C" listing is given in appendix C.

Special consideration should be given to the application of these values in assessing the health hazards which may be associated with exposure to mixtures of two or more substances. A brief discussion of basic considerations involved in developing threshold limit values for mixtures, and methods for their development, amplified by specific examples are given in appendix B.

Threshold limits are based in the best available information from industrial experience, from experimental studies, and, when possible, from a combination of the two. These values are based in various criteria of toxic effects or on marked discomfort; thus, they should not be used as a common denominator of toxicity, nor should they be considered as the sole criterion in proving or disproving diagnosis of suspected occupational disease.

These limits are intended for use in the field of industrial hygiene and should be interpreted and applied only by persons trained in this field. They are not intended for use, or for modification for use, (1) as a relative index of toxicity, by making a ratio of two limits, or (2) in the evaluation or control of community air pollution or air pollution nuisances, or (3) in estimating the toxic potential of continuous uninterrupted exposures.

RECOMMENDED VALUES (IN ALPHABETICAL ORDER)

	Substance	ppm*	Mg/M³**
	Acetaldehyde	200	360
	Acetic acid	10	25
	Acetic anhydride	5	20
	Acetone	1,000	2,400
	Acetonitrile	40	70
	Acetylene tetrabromide	1	14
†	Acrolein	0.1	0.25
	Acrylonitrile—Skin	20	45
	Aldrin (1,2,3,4,10,10-hexachloro-1,4,4a,5,8,8a-hexahydro-1,4,5,8-dimethano-naphthalene)—Skin	—	0.25
†	Allyl alcohol—Skin	2	5
	Allyl chloride	1	3
C	Allylglycidyl ether (AGE)	10	45
	Allyl propyl disulfide	2	12
†	Ammonia	50	35
	Ammonium sulfamate (Ammate)	—	15
†	Amyl acetate	100	525
	Amyl alcohol (isoamyl alcohol)	100	360
	Aniline—Skin	5	19
	Antimony	—	0.5
	ANTU (alpha naphthyl thiourea)	—	0.3
	Arsenic	—	0.5
	Arsine	0.05	0.2
	Barium (soluble compounds)	—	0.5
C	Benzene (benzol)—Skin	25	80
	Benzidine	—	A¹
	Benzyl chloride	1	5
	Beryllium	—	0.002
	Boron oxide	—	15
C	Boron trifluoride	1	3
	Bromine	0.1	0.7
	Butadiene (1,3-butadiene)	1,000	2,200
	2-Butanone (methyl ethyl ketone)	200	590
	2-Butoxy ethanol (Butyl Cellosolve)	50	240
	Butyl acetate (*n*-butyl acetate)	200	950
	Butyl alcohol	100	300
	tert. Butyl Alcohol	100	300
C	Butylamine	5	15
	n-Butyl glycidyl ether (BGE)	50	270
	Butyl mercaptan	10	35
	p-tert. Butyltoluene	10	60
	Cadmium oxide fume	—	0.1
	Calcium arsenate	—	1
	Carbon dioxide	5,000	9,000
	Carbon disulfide—Skin	20	60
	Carbon monoxide	100	110
	Carbon tetrachloride—Skin	10	65
	Chlordane (1,2,4,5,6,7,8,8-octachloro-3a,4,7,7a-tetrahydro-4,7-methanoindene)	—	0.5
	Chlorinated camphene, 60%	—	0.5
	Chlorinated diphenyl oxide	—	0.5
	Chlorine	1	3
	Chlorine dioxide	0.1	0.3
C	Chlorine trifluoride	0.1	0.4
C	Chloroacetaldehyde	1	3
	Chlorobenzene (monochlorobenzene)	75	350
	Chlorobromomethane	200	1,050
	Chlorodiphenyl (42% Chlorine)—Skin	—	1
	Chlorodiphenyl (54% Chlorine)—Skin	—	0.5
C	Chloroform (trichloromethane)	50	240
	1-Chloro-1-nitropropane	20	100
	Chloropicrin	0.1	0.7
	Chloroprene (2-chloro-1,3-butadiene)	25	90
	Chromic acid and chromates (as CrO_3)	—	0.1
	Cobalt	—	0.5
	Crag (R) herbicide (sodium 2-[2,4-dichlorophenoxy] ethanol hydrogen sulfate)	—	15
	Cresol (all isomers)—Skin	5	22
	Cyanide (as CN)—Skin	—	5
	Cyclohexane	400	1,400
	Cyclohexanol	50	200
	Cyclohexanone	50	200
	Cyclohexene	400	1,350
	2,4-D (2,4-dichlorophenoxyacetic acid)	—	10
	DDT (2,2-bis [*p*-chlorophenyl]-1, 1, 1-trichloroethane)—Skin	—	1
	Decaborane—Skin	0.05	0.3
	Diacetone alcohol (4-hydroxy-4-methyl-2-pentanone)	50	240
	Diborane	0.1	0.1
	1,2-Dibromoethane (Ethylene dibromide)	25	190
	o-Dichlorobenzene	50	300
	p-Dichlorobenzene	75	450
	Dichlorodifluoromethane	1,000	4,950
	1,1-Dichloroethane	100	400
	1,2-Dichloroethane (ethylene dichloride)	50	200
	1,2-Dichloroethylene	200	790
C	Dichloroethyl ether	15	90
	Dichloromonofluoromethane	1,000	4,200
C	1,1-Dichloro-1-nitroethane	10	60
	Dichlorotetrafluoroethane	1,000	7,000
	Dieldrin (1, 2, 3, 4, 10, 10-hexachloro-6, 7-epoxy-1, 4, 4a, 5, 6, 7, 8, 8a-octahydro-1,4,5,8,-dimethanonaphthalene)—Skin	—	0.25
	Diethylamine	25	75
	Difluorodibromomethane	100	860
†C	Diglycidyl ether (DGE)	0.5	2.8
	Diisobutyl ketone	50	290
	Dimethyl acetamide—Skin	10	35
	Dimethylaniline (N-dimethylaniline)—Skin	5	25
	Dimethylformamide	20	60
	1,1-Dimethylhydrazine—Skin	0.5	1
	Dimethylsulfate—Skin	1	5
	Dinitrobenzene—Skin	—	1
	Dinitrotoluene—Skin	—	1.5
	Dinitro-o-cresol—Skin	—	0.2
	Dioxane (diethylene dioxide)	100	360
	Dipropylene glycol methyl ether	100	600
	EPN (O-ethyl O-*p*-nitrophenyl thionobenzenephosphonate)—Skin	—	0.5
	Ethyl acetate	400	1,400
	Ethyl acrylate—Skin	25	100
	Ethyl alcohol (ethanol)	1,000	1,900
	Ethylamine	25	45
C	Ethylbenzene	200	870
	Ethyl bromide	200	890
	Ethyl chloride	1,000	2,600
	Ethyl ether	400	1,200
	Ethyl formate	100	300
†C	Ethyl mercaptan	20	52
	Ethyl silicate	100	850
	Ethylene chlorohydrin—Skin	5	16
	Ethylenediamine	10	30
	Ethylene glycol dinitrate (Combined EGDN + NG)—Skin	0.2	1.2
	Ethylene imine—Skin	5	9
	Ethylene oxide	50	90
	2-Ethoxyethanol (Cellosolve)	200	740
	2-Ethoxyethylacetate (Cellosolve Acetate)	100	540
	Ferbam (ferric dimethyl dithiocarbamate)	—	15
	Ferrovanadium dust	—	1
	Fluoride (as F)	—	2.5
	Fluorine	0.1	0.2
	Fluorotrichloromethane	1,000	5,600
C	Formaldehyde	5	6
	Furfural	5	20
	Furfuryl alcohol	50	200
	Gasoline	500	2,000
	Glycidol (2,3-Epoxy-1-propanol)	50	150
	Heptane (*n*-heptane)	500	2,000
	Hexane (*n*-hexane)	500	1,800
	Hexanone (methyl butyl ketone)	100	410
†	sec-Hexyl acetate	50	295
	Hexone (methyl isobutyl ketone)	100	410
C	Hydrazine—Skin	1	1.3
	Hydrogen bromide	3	10
C	Hydrogen chloride	5	7
	Hydrogen cyanide—Skin	10	11
	Hydrogen fluoride	3	2
	Hydrogen peroxide, 90%	1	1.4
	Hydrogen selenide	0.05	0.2
C	Hydrogen sulfide	20	30
	Hydroquinone	—	2
C	Iodine	0.1	1
	Iron oxide fume	—	15
	Isophorone	25	140
	Isopropylamine	5	12
	Isopropylglycidyl ether (IGE)	50	240
	Ketene	0.5	0.9
	Lead	—	0.2
	Lead arsenate	—	0.15
	Lindane (hexachlorocyclohexane, gamma isomer)	—	0.5
	Lithium hydride	—	0.025
	Magnesium oxide fume	—	15
	Malathion (*o,o*-dimethyl dithiophosphate of diethyl mercaptosuccinate)—Skin	—	15
C	Manganese	—	5
	Mercury—Skin	—	0.1

†1963 Revision.

*Parts of vapor or gas per million parts of air by volume at 25° C and 760 mm. Hg pressure.

**Approximate milligrams of particulate per cubic meter of air.

A Numbers, See Appendix A.

RECOMMENDED VALUES (IN ALPHABETICAL ORDER)—continued

Substance	ppm*	Mg/M³**
Mercury (organic compounds)—Skin	—	0.01
Mesityl oxide	25	100
Methoxychlor (2,2-di-*p*-methoxyphenyl-1, 1, 1-trichloroethane)	—	15
Methyl acetate	200	610
Methyl acetylene	1,000	1,650
Methyl acrylate—Skin	10	35
Methylal (dimethoxymethane)	1,000	3,100
Methyl alcohol (methanol)	200	260
C Methyl bromide—Skin	20	80
Methyl cellosolve (2-methoxyethanol)—Skin	25	80
Methyl cellosolve acetate (ethylene glycol monomethyl ether acetate)	25	120
C Methyl chloride	100	210
† Methyl chloroform (1,1,1-trichloroethane)	350	1,900
Methylcyclohexane	500	2,000
Methylcyclohexanol	100	470
Methylcyclohexanone	100	460
Methyl formate	100	250
Methyl isobutyl carbinol (methyl amyl alcohol)	25	100
†C Methyl mercaptan	20	40
α Methyl styrene	100	480
Methylene chloride (dichloromethane)	500	1,750
Monomethyl aniline—Skin	2	9
Molybdenum (soluble compounds)	—	5
(insoluble compounds)	—	15
Naphtha (coal tar)	200	800
Naphtha (petroleum)	500	2,000
β-Naphthylamine	—	A²
Nickel carbonyl	0.001	0.007
Nicotine—Skin	—	0.5
Nitric acid	10	25
p-Nitroaniline—Skin	1	6
Nitrobenzene—Skin	1	5
Nitroethane	100	310
C Nitrogen dioxide	5	9
C Nitroglycerin (combined EGDN+NG)—Skin	0.2	2
Nitromethane	100	250
1-Nitropropane	25	90
2-Nitropropane	25	90
N-Nitrosodimethylamine (Dimethylnitrosamine)—Skin	A³	—
Nitrotoluene—Skin	5	30
Octane	500	2,350
Osmium tetroxide	—	0.002
Ozone	0.1	0.2
Parathion (O, O, diethyl-O-*p*-nitrophenyl thiophosphate)—Skin	—	0.1
Pentaborane	0.005	0.01
Pentachloronaphthalene—Skin	—	0.5
Pentachlorophenol—Skin	—	0.5
Pentanone (methyl propyl ketone)	200	700
Pentane	1,000	2,950
Perchloroethylene (tetrachloroethylene)	100	670
Perchloromethyl mercaptan	0.1	0.8
Perchloryl fluoride	3	13.5
Phenol—Skin	5	19
Phenyl glycidyl ether (PGE)	50	310
Phenylhydrazine—Skin	5	22
Phosdrin (2-carbomethoxy-1-methyl vinyl dimethyl phosphate)	—	0.1
Phosgene (carbonyl chloride)	1	4
† Phosphine	0.3	0.4
Phosphoric acid	—	1
Phosphorus (yellow)	—	0.1
Phosphorus pentachloride	—	1
Phosphorus pentasulfide	—	1
Phosphorus trichloride	0.5	3
Picric acid—Skin	—	0.1
Platinum (soluble salts)	—	0.002
Propyl acetate	200	840
Propyl alcohol (isopropyl alcohol)	400	980
Propyl ether (isopropyl ether)	500	2,100
n-Propyl nitrate	25	110
Propylene dichloride (1,2-dichloropropane)	75	350
Propylene imine—Skin	25	60
Propylene oxide	100	240
Pyrethrum	—	5
Pyridine	5	15
Quinone	0.1	0.4
Rotenone (commercial)	—	5
Selenium compounds (as Se)	—	0.1
Sodium fluoroacetate (1080)—Skin	—	0.05
Sodium hydroxide	—	2
Stibine	0.1	0.5
Stoddard solvent	500	2,900
Strychnine	—	0.15

†1963 Revision.
*Parts of vapor or gas per million parts of air by volume at 25° C and 760 mm. Hg pressure.
**Approximate milligrams of particulate per cubic meter of air.
A Numbers, See Appendix A.

RECOMMENDED VALUES (IN ALPHABETICAL ORDER)—continued

Substance	ppm*	Mg/M³**
Styrene monomer (phenylethylene)	100	420
Sulfur dioxide	5	13
Sulfur hexafluoride	1,000	6,000
Sulfuric acid	—	1
C Sulfur monochloride	1	6
Sulfur pentafluoride	0.025	0.25
Sulfuryl fluoride	5	20
2,4,5T (2,4,5-Trichlorophenoxyacetic acid)	—	10
TEDP (tetraethyl dithionopyrophosphate)—Skin	—	0.2
Teflon (R) decomposition products	—	A⁴
TEPP (tetraethyl pyrophosphate)—Skin	—	0.05
Tellurium	—	0.1
1,2,2,2-Tetrachloroethane—Skin	5	35
Tetrahydrofuran	200	590
Tetranitromethane	1	8
Tetryl (2,4,6-trinitrophenylmethylnitramine)—Skin	—	1.5
Thallium (soluble compounds)—Skin	—	0.1
Thiram (tetramethyl thiuram disulfide)	—	5
Titanium dioxide	—	15
C Toluene (toluol)	200	750
o-Toluidine—Skin	5	22
C Tolylene-2,4-diisocyanate	0.02	0.14
Trichloroethylene	100	520
Trichloronaphthalene—Skin	—	5
1,2,3-Trichloropropane	50	300
1,1,2-Trichloro 1,2,2-trifluoroethane	1,000	7,600
Triethylamine	25	100
Trifluoromonobromomethane	1,000	6,100
Trinitrotoluene—Skin	—	1.5
Triorthocresyl phosphate	—	0.1
Triphenyl phosphate	—	3
Turpentine	100	560
Uranium (soluble compounds)	—	0.05
(insoluble compounds)	—	0.25
Vanadium C (V_2O_5 dust)	—	0.5
(V_2O_5 fume)	—	0.1
C Vinyl chloride (chloroethylene)	500	1,300
Vinyl toulene	100	480
Warfarin (3[*α* acetonylbenzyl]-4-hydroxycoumarin)	—	0.1
Yttrium	—	5
C Xylene (xylol)	200	870
Xylidene—Skin	5	25
Zinc oxide fume	—	5
Zirconium compounds (as Zr)	—	5

NOTE: The word "Skin" following a substance indicates that the substance can penetrate the skin to contribute to the exposure and threshold limit value should be reduced accordingly.

Radioactivity: For permissible concentrations of radio-isotopes in air, see U.S. Department of Commerce, National Bureau of Standards, Handbook 69, "Maximum Permissible Body Burdens and Maximum Permissible Concentrations of Radionuclides in Air and in Water for Occupational Exposure," June 5, 1959. Also, see U.S. Department of Commerce, National Bureau of Standards, Handbook 59, "Permissible Dose from External Sources of Ionizing Radiation," September 24, 1954, and addendum of April 15, 1958.

MINERAL DUSTS

Substance	m.p.p.c.f.§
SILICA	
Crystalline	
Quartz, Threshold Limit calculated from the formula	250 / %SiO₂‡+5
Cristobalite, Threshold Limit calculated from the formula	
Amorphous, including natural diatomaceous earth	20
SILICATES (less than 1% crystalline silica)	
Asbestos	5
Mica	20
Soapstone	20
Talc	20
Portland Cement	50
Miscellaneous (less than 1% crystalline silica)	50

Conversion factors
mppcf x 35.3=million particles per cubic meter
=particles per c.c.

§Millions of particles per cubic foot of air, based on impinger samples counted by light-field technics.
‡The percentage of crystalline silica in the formula is the amount determined from air-borne samples, except in those instances in which other methods have been shown to be applicable.

TENTATIVE VALUES

Substance	ppm*	Mg/M³**
C tert. Butyl chromate (as CrO_3)—Skin	—	0.1
† Calcium oxide	—	5
Camphor	—	2
† Copper Fume	—	0.1
Dusts & Mists	—	1.0

TENTATIVE VALUES—continued

Substance	ppm*	Mg/M³**
DDVP (O, O-Dimethyl-2,2-dichlorovinyl phosphate)	—	1
† Demeton (R) (Systox)	—	0.1
Endrin (1,2,3,4,10,10,-hexachloro-6, 7-epoxy-1,4,4a, 5,6,7,8,8a-octa hydro 1,4-endo-5,8-dimethanonaphthalene)—Skin	—	0.1
Epichlorhydrin	5	19
Ethanolamine	3	6
† Graphite	—	15 mppcf
† Hafnium	—	0.5
Heptachlor (1,4,5,6,7,8,8a-heptachloro-3a,4,7,7a-tetrahydro-4,7-methanoindene)	—	0.5
† Methylamine	25	31
† Methyl Methacrylate	100	410
†C Methylene bis phenylisocyanate	0.02	0.2
† Mineral Wool (Fiberglas)	—	2
† Naphthalene	10	50
Oil (mineral)	—	5
† *β*-Propiolactone	—	A⁵
† Silver	—	0.05
† Tantalum	—	5
† 1,1,1,2,-Tetrachloro-2,2,-difluoroethane	1,000	8,340
† 1,1,2,2-Tetrachloro-1,2-difluoroethane	500	4,170
† Tetraethyl lead	—	0.075
† Tin (inorganic compounds)	—	2
(organic compounds as Sn)—Skin	—	0.1

†1962 Additions.
*Parts of vapor or gas per million parts of air by volume at 25° C and 760 mm. Hg pressure.
**Approximate milligrams of particulate per cubic meter of air.
A numbers, See Appendix A.

APPENDIX A

A¹ **Benzidine.** Because of high incidence of bladder tumors in man, any exposure, including skin, is extremely hazardous.

A² ***β*-Naphthylamine.** Because of the extremely high incidence of bladder tumors in workers handling this compound, and the inability to control exposures, *β*-naphthylamine has been prohibited from manufacture, use and other activities that involve human contact by the State of Pennsylvania.

A³ **N-Nitrosodimethylamine.** Because of extremely high toxicity and presumed carcinogenic potential of this compound, contact by any route should not be permitted.

A⁴ **Teflon ® decomposition products.** At least one identified component of Teflon decomposition products is extremely toxic, but in the absence of more complete toxicity information and suitable analytic methods, a definite threshold limit value is not recommended at this time; but air concentrations should be minimal.

A⁵ ***β*-Propiolactone.** Because of high acute toxicity and demonstrated skin tumor production in animals, contact by any route should be avoided.

APPENDIX B

THRESHOLD LIMIT VALUES FOR MIXTURES

When two or more hazardous substances are present, their combined effect, rather than that of either individually, should be given primary consideration. In the absence of information to the contrary, the effects of the different hazards should be considered as additive. That is, if the sum of the following fractions,

$$\frac{C_1}{T_1}+\frac{C_2}{T_2}+\cdots\frac{Cn}{Tn}$$

exceeds unity, then the threshold limit of the mixture should be considered as being exceeded. C indicates the observed atmospheric concentration, and T_1 the corresponding threshold limit. (See Example 1A.a.)

Exceptions to the above rule may be made when there is good reason to believe that the chief effects of the different harmful substances are not in fact additive, but inde-

pendent as when purely local effects on different organs of the body are produced by the various components of the mixture. In such cases the threshold limit ordinarily is exceeded only when at least one member of the series

$$\left(\frac{C_1}{T_1} \text{ or } \frac{C_2}{T_2} \text{ etc.}\right)$$

itself has a value exceeding unity. (See Example 1A.b.)

Antagonistic action or potentiation may occur with some combinations of atmospheric contaminants. Such cases at present must be determined individually. Potentiating or antagonistic agents are not necessarily harmful by themselves. Potentiating effects of exposure to such agents by routes other than that of inhalation is also possible, e.g., imbibed alcohol and inhaled narcotic (trichlorethylene). Potentiation is characteristically exhibited at high concentrations, less probably at low.

When a given operation or process characteristically emits a number of harmful dusts, fumes, vapors or gases, it will frequently be only feasible to attempt to evaluate the hazard by measurement of a single substance. In such cases, the threshold limit used for this substance should be reduced by a suitable factor, the magnitude of which will depend on the number, toxicity and relative quantity of the other contaminants ordinarily present.

Examples of processes which are typically associated with two or more harmful atmospheric contaminants are welding, automobile repair, blasting, painting, lacquering, certain foundry operations, diesel exhausts, etc. (Example 2.)

THRESHOLD LIMIT VALUES FOR MIXTURES

EXAMPLES

1A. General case, where air is analyzed for each component.

a. **ADDITIVE EFFECTS**

$$\frac{C_1}{T_1} + \frac{C_2}{T_2} + \frac{C_3}{T_3} + \ldots \frac{C_n}{T_n} = 1$$

Air contains 5 ppm of carbon tetrachloride (TLV, 10), 20 ppm of ethylene dichloride (TLV,50) and 10 ppm of ethylene dibromide, (TLV, 25).

$$\frac{5}{10} + \frac{20}{50} + \frac{10}{25} = \frac{65}{50} = 1.3$$

Threshold limit is exceeded.

b. **INDEPENDENT EFFECTS**

Air contains 0.15 mg/m³ of lead (TLV, 0.2) and 0.7 mg/m³ of sulfuric acid (TLV, 1).

$$\frac{0.15}{0.20} = 0.75; \frac{0.7}{1} = 0.7$$

Threshold limit is not exceeded.

1B. Special case when source of contaminant is a mixture and atmospheric composition is assumed similar to that of original material, i.e. vapor pressure of each component is the same at the observed temperature.

a. **ADDITIVE EFFECTS,** approximate solution.

1. A mixture of equal parts (1) trichloroethylene (TLV, 100), and (2) methyl chloroform (TLV, 350).

$$\frac{C_1}{100} + \frac{C_2}{350} = \frac{C_m}{T_m}$$

Solution applicable to "spot" solvent mixture usage, where all or nearly all, solvent evaporates.

$$C_1 = C_2 = \frac{1}{2} C_m$$

$$\frac{C_1}{100} + \frac{C_1}{350} = \frac{2C_1}{T_m}$$

$$\frac{7C_1}{700} + \frac{2C_1}{700} = \frac{2C_1}{T_m}$$

$$T_m = 700 \times \frac{2}{9} = 155 \text{ ppm}$$

1B.b. General Exact Solution for Mixtures of N Components With Additive Effects and Different Vapor Pressures.

(1) $\frac{C_1}{T_1} + \frac{C_2}{T_2} + \ldots + \frac{C_n}{T_n} = 1;$

(2) $C_1 + C_2 + \ldots + C_n = T;$

(2.1) $\frac{C_1}{T} + \frac{C_2}{T} + \ldots + \frac{C_n}{T} = 1.$

By the Law of Partial Pressures,

(3) $C_1 = ap_1$

And by Raoult's Law,

(4) $p_1 = F_1 p_1^\circ.$

Combine (3) and (4) to obtain

(5) $C_1 = aF_1p_1^\circ.$

Combining (1), (2.1), and (5), we obtain

(6) $\frac{F_1p_1^\circ}{T} + \frac{F_2p_2^\circ}{T} + \ldots + \frac{F_np_n^\circ}{T} = \frac{F_1p_1^\circ}{T_1} + \frac{F_2p_2^\circ}{T_2} + \ldots + \frac{F_np_n^\circ}{T_n}$ and solving for T,

(6.1) $$T = \frac{F_1p_1^\circ + F_2p_2^\circ + \ldots + F_np_n^\circ}{\frac{F_1p_1^\circ}{T_1} + \frac{F_2p_2^\circ}{T_2} + \ldots + \frac{F_np_n^\circ}{T_n}}$$

or

(6.2) $$T = \frac{\sum_{i=1}^{i=n} F_ip_i^\circ}{\sum_{i=1}^{i=n} \frac{F_ip_i^\circ}{T_i}}$$

T = Threshold limit value in ppm.
C = Vapor concentration in ppm.
p = Vapor pressure of component in solution.
p° = Vapor pressure of pure component.
F = Mol fraction of component in solution.
a = A constant of proportionality.
Subscripts 1,2, . . . n relate the above quantities to components 1,2, . . . n, respectively.
Subscript i refers to an arbitrary component from 1 to n.
Absence of subscript relates the quantity to the mixture.

Solution to be applied when there is a reservoir of the solvent mixture whose composition does not change appreciably by evaporation.

Exact Arithmetic Solution of Specific Mixture

	Mol. wt.	Density	T	p° at 25°C	Mol fraction in half-and half solution by volume
Trichloroethylene (1)	131.4	1.46 g/ml	100	73mm Hg	0.527
Methylchloroform (2)	133.42	1.33 g/ml	350	125mm Hg	0.473

$$F_1p_1^\circ = (0.527)(73) = 38.2$$
$$F_2p_2^\circ = (0.473)(125) = 59.2$$

$$T = \frac{38.2 + 59.2}{\frac{38.2}{100} + \frac{59.2}{350}} = \frac{(97.4)(350)}{133.8 + 59.2} = \frac{(97.4)(350)}{193.0} = 177$$

T = 177 ppm (Note difference in T.L.V. when account is taken of vapor pressure and mol fraction in comparison with above example where such account is not taken).

2. A mixture of one part of (1) parathion (TLV, 0.1) and two parts of (2) EPN (TLV, 0.5).

$$\frac{C_1}{0.1} + \frac{C_2}{0.5} = \frac{C_m}{T_m}; \quad C_2 = 2C_1$$

$$C_m = 3C_1$$

$$\frac{C_1}{0.1} + \frac{2C_1}{0.5} = \frac{3C_1}{T_m}$$

$$\frac{7C_1}{0.5} = \frac{3C_1}{T_m}$$

$$T_m = \frac{1.5}{7} = 0.21 \text{ mg/m}^3$$

1C. **INDEPENDENT EFFECTS**

1. From naphtha (TLV, 500) containing 10 mole per cent benzene (TLV, 25) the narcotic effects can considered as approximately the same as that of benzene-free naphtha.

The blood effects can be considered as due to the benzene alone.

For **intermittent exposure,** a TLV of 500 ppm may be used as long as the **average** concentration does not exceed $25 \times \frac{100}{10} = 250$ ppm, the TLV based on the benzene content.

2. Diesel engine exhaust contains several irritants, one of which is nitrogen dioxide. A limit of 2 ppm NO_2 has been found to correlate fairly well with the beginning of subjective (irritation) effects from such gases, although no subjective effects are experienced from NO_2 alone at 5 ppm.

Appendix C

BASES FOR ASSIGNING LIMITING "C" VALUES*

T.L.V. RANGE ppm* or mg/m³	Permitted Fluctuation Factor of T.L.V. for 5, 10 or 30 min.	Examples
0 to 1	3	Boron trifluoride (1 ppm) at 3 ppm if repeatedly encountered for periods of 5, 10, or 30 minutes, may lead to pneumonitis; a "C" listing recommended.
1+ to 10	2	
10+ to 100	1.5	Ethyl benzene (200 ppm) at 250 ppm if repeatedly encountered for periods of 5 or 10 minutes may prove intolerably irritating to the eyes; a "C" listing recommended.
100+ to 1000	1.25	

* According to this limitation, the presently listed TLVs will or will not be candidates for a "C" (ceiling) listing. 1963 TLVs not coming within this limitation will bear a "C" before the substance name. Judgment is based on whether the excursions in concentration under the time limits stated may result in a) intolerable irritation, b) chronic or irreversible tissue change, or c) narcosis of sufficient degree to increase accident proneness or materially reduce work efficiency.

[F.R. Doc. 64-2886; Filed, Mar. 26, 1964; 8:45 a.m.]

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PART IV

FEDERAL REGISTER

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Department of Labor

Bureau of Labor Standards

Safety and Health Regulations for Shipbreaking

Title 29—LABOR

Chapter XIII—Bureau of Labor Standards, Department of Labor

PART 1503—SAFETY AND HEALTH REGULATIONS FOR SHIPBREAKING

On August 23, 1963, a proposal to establish safety and health regulations for shipbreaking under section 41 of the Longshoremen's and Harbor Workers' Compensation Act (33 U.S.C. 941) was published in the FEDERAL REGISTER (28 F.R. 9303). Interested persons were provided opportunities to submit data, views, and argument both orally and in writing in regard to the proposals. After consideration of all relevant matter presented, I have decided to and do hereby establish a new 29 CFR Part 1503 to read as set forth below.

The revised regulations shall become effective on April 26, 1964.

Signed at Washington, D.C., this 20th day of March, 1964.

W. WILLARD WIRTZ,
Secretary.

Subpart A—General Provisions

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1503.4 Variation from the regulations of this part.
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1503.31 Ventilation and protection in welding, cutting, and heating.
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Subpart E—Scaffolds, Ladders, and Other Working Surfaces

1503.41 Scaffolds or staging.
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1503.44 Access to vessels.
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Subpart F—General Working Conditions

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1503.56 Work in or on lifeboats.
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Subpart G—Gear and Equipment for Rigging and Materials Handling

Sec.
1503.61 Inspection.
1503.62 Ropes, chains, and slings.
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1503.64 Chain falls and pull-lifts.
1503.65 Hoisting and hauling equipment.
1503.66 Use of gear.
1503.67 Qualifications of operators.
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Subpart H—Tools and Related Equipment

1503.71 General precautions.
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Subpart I—Personal Protective Equipment

Sec.
1503.81 Eye protection.
1503.82 Respiratory protection.
1503.83 Head, foot and body protection.
1503.84 Life saving equipment.

Appendix I—Threshold Limit Values for 1963.

AUTHORITY: The provisions of this Part 1503 issued under sec. 41, 44 Stat. 1444; sec. 1, 72 Stat. 835; 33 U.S.C. 941.

Subpart A—General Provisions

§ 1503.1 Purpose, scope and responsibility.

(a) Section 41 of the Longshoremen's and Harbor Workers' Compensation Act requires every employer to furnish and maintain employment and places of employment which are reasonably safe for his employees in all employments covered thereby (the Act applies to all injuries sustained by employees on navigable waters of the United States if the employees are employed by an "employer" as defined in section 2(4) of the Act i.e., "an employer any of whose employees are employed in maritime employment, in whole or in part, upon the navigable waters of the United States (including any dry dock)." Calbeck v. Travelers Insurance Co. and Donovan v. Avondale Shipyards, Inc. (52 S. Ct. 1196 (1962)) and to install, furnish, maintain and use devices and safeguards (with particular reference to equipment used by such employers and working conditions established by them) determined by the Secretary of Labor to be reasonably necessary to protect the life, health and safety of such employees, and to render safe such employment and places of employment and to prevent injury to such employees. The purpose of this part is to make determinations under this standard with respect to shipbreaking activity.

(b) This part does not apply to matters under the control of the United States Coast Guard within the scope of Title 52 of the Revised Statutes and acts supplementary or amendatory thereto (46 U.S.C. secs. 1–1388 passim) including, but not restricted to, the master, ship's officer, crew members, design, construction and maintenance of the vessel, its gear and equipment; to matters within the regulatory authority of the United States Coast Guard to safeguard vessels, harbors, ports and waterfront facilities under the provisions of the Espionage Act of June 17, 1917, as amended (50 U.S.C. 191 et seq.; 22 U.S.C. 401 et seq.); including the provisions of Executive Order 10173, as amended by Executive Orders 10277 and 10352 (3 CFR 1949–1953 Comp., pp. 356, 778 and 873); or to matters within the regulatory authority of the United States Coast Guard with respect to lights, warning devices, safety equipment and other matters relating to the promotion of safety of lives and property under section 4(e) of the Outer Continental Shelf Lands Act (43 U.S.C. 1333). Also, this part does not apply to owners, operators, agents or masters of vessels unless they are acting as "employers". However, this part is not intended to relieve owners, operators, agents or masters of vessels who are not "employers" from responsibilities or duties now placed upon them by law, regulations or custom.

(c) The responsibilities placed upon the competent person herein shall be deemed to be the responsibilities of the employer.

§ 1503.2 Definitions.

(a) The term "shall" indicates provisions which are mandatory.

(b) The term "Secretary" means the Secretary of Labor.

(c) The term "employer" means an employer any of whose employees are employed, in whole or in part, in shipbreaking or related employments as defined in paragraphs (i) and (j) of this section on navigable waters of the United States, including dry docks, graving docks and marine railways, and any of whose employees are employed in maritime employment, in whole or in part, upon the navigable waters of the United States, including dry docks, graving docks and marine railways.

(d) The term "employee" means any person employed in shipbreaking or related employments on the navigable waters of the United States, including dry docks, graving docks and marine railways, by an employer as defined in paragraph (c) of this section.

(e) The term "gangway" means any ramp-like or stair-like means of access provided to enable personnel to board or leave a vessel including accommodation ladders, gangplanks and brows.

(f) The term "vessel" includes every description of watercraft or other artificial contrivance used, or capable of being used, as a means of transportation on water, including special purpose floating structures not primarily designed for or used as a means of transportation on water.

(g) For purposes of § 1503.44, the term "barge" means an unpowered, flat bottom, shallow draft vessel including scows, carfloats and lighters. For purposes of this section, the term does not include ship shaped or deep draft barges.

(h) For purposes of § 1503.44, the term "river tow boat" means a shallow draft, low free board, self-propelled vessel designed to tow river barges by pushing ahead. For purposes of this section, the term does not include other towing vessels.

(i) The term "shipbreaking" means any breaking down of a vessel's structure for the purpose of scrapping the vessel, including the removal of gear, equipment or any component part of a vessel.

(j) The term "related employments" means any employments performed as

an incident to or in conjunction with shipbreaking work, including, but not restricted to, inspection, survey and employment as a watchman.

(k) The term "hazardous substance" means a substance which by reason of being explosive, flammable, poisonous, corrosive, oxidizing, irritant or otherwise harmful is likely to cause injury.

(l) The term "competent person" for purposes of this part means a person who is capable of recognizing and evaluating employee exposure to hazardous substances or to other unsafe conditions and is capable of specifying the necessary protection and precautions to be taken to ensure the safety of employees as required by the particular regulation under the condition to which it applies. For the purposes of Subparts B and D, the competent person shall be one meeting the requirements of § 1503.10.

(m) The term "confined space" means a compartment of small size and limited access such as a double bottom tank, cofferdam or other space which by its small size and confined nature can readily create or aggravate a hazardous exposure.

(n) The term "enclosed space" means any space, other than a confined space, which is enclosed by bulkheads and overhead. It includes cargo holds, tanks, quarters and machinery and boiler spaces.

(o) The term "hot work" means riveting, welding, burning or other fire or spark producing operations.

(p) The term "cold work" means any work which does not involve riveting, welding, burning or other fire or spark producing operations.

(q) The term "powder actuated fastening tool" means a tool or machine which drives a stud, pin or fastener by means of an explosive charge.

§ 1503.3 Penalty.

(a) As provided in Public Law 85–742, any employer who, willfully, violates or fails or refuses to comply with the provisions of the regulations of this part and any employer or other person who willfully interferes with, hinders or delays the Secretary or his authorized representative in carrying out his duties under subsection (c) of section 41 of the Act by refusing to admit the Secretary or his authorized representative to any place, or to permit the inspection or examination of any employment or place of employment, or who willfully hinders or delays the Secretary or his authorized representative in the performance of his duties in the enforcement of the regulations of this part, shall be guilty of an offense, and, upon conviction thereof, shall be punished for each offense by a fine of not less than $100 nor more than $3,000; and in any case where such employer is a corporation, the officer who willfully permits any such violation to occur shall be guilty of an offense, and, upon conviction thereof, shall be punished also for each offense by a fine of not less than $100 nor more than $3,000.

(b) The liability under this provision of Public Law 85–742 shall not affect any other liability of the employer under the Longshoremen's and Harbor Workers' Compensation Act.

§ 1503.4 Variation from the regulations of this part.

(a) As provided in Public Law 85–742, in case of practical difficulties or unnecessary hardships, the Secretary in his discretion may grant variations from the regulations of this part or particular provisions thereof, and permit the use of other or different devices if he finds that the purpose of the regulation will be observed by the variation and the safety of employees will be equally secured thereby. Any person affected by such regulations or his agent, may request the Secretary to grant such variation, stating in writing the grounds on which his request is based. Any authorization by the Secretary of a variation shall be in writing, shall describe the conditions under which the variation shall be permitted, and shall be published as provided in section 3 of the Administrative Procedure Act (ch. 324, 60 Stat. 237), as amended. A properly indexed record of all variations shall be kept in the Office of the Secretary and be open to public inspection.

§ 1503.5 Reference specifications, standards and codes.

(a) Specifications, standards and codes of agencies of the United States Government, to the extent specified in the text, form a part of the regulations of this part. In addition, under the authority vested in the Secretary under the Act, the specifications, standards and codes of organizations which are not agencies of the United States Government, in effect on the date of the promulgation of the regulations of this part as listed below, to the extent specified in the text, form a part of the regulations of this part:

National Fire Protection Association, 60 Batterymarch Street, Boston 10, Mass., Subpart B, § 1503.13(b).

Underwriters' Laboratories, Inc., 207 East Ohio Street, Chicago, Ill., Subpart B, § 1503.12(b).

American Standard Safety Code for Portable Wood Ladders, A14.1—1959, American Standards Association, Inc., 10 East 40th Street, New York 16, N.Y., Subpart E, § 1503.42(a)(6).

American Standard Safety Code for Portable Metal Ladders, A14.2—1956, American Standards Association, Inc., 10 East 40th Street, New York 16, N.Y., Subpart E, § 1503.42(a)(4).

American Standard Safety Code for Head, Eye and Respiratory Protection, Z2.1—1959, American Standards Association, Inc., 10 East 40th Street, New York 16, N.Y., Subpart I, §§ 1503.81(a)(1), 1503.83(b).

§ 1503.6 Notification of accidents resulting in fatalities or serious injuries.

(a) Within 48 hours after the occurrence of an accident causing the death of an employee or resulting in an employee's admission to a hospital as a bed patient, the employer shall file a copy of Bureau of Employees' Compensation Form BEC—202 (approved by Budget Bureau No. 44–R887.3) with the Field Safety Consultant of the Bureau of Labor Standards serving the area where the accident occurred (in addition to such filing as is required by 20 CFR 31.3) unless prior thereto and as soon after the accident as feasible the employer has given oral or written notice of the accident to the person in charge of such office in sufficient detail to permit the accident to be identified readily. (44 Stat. 1444; 33 U.S.C. 930)

§ 1503.7 Amendment of the regulations of this part.

The Secretary may at any time, upon his own motion or upon written petition of any interested person setting forth reasonable grounds therefor, and after opportunity has been given to interested persons to present their views, amend or revoke any of the provisions of the regulations of this part.

Subpart B—Explosive and Dangerous Atmospheres

§ 1503.10 Competent person.

(a) *Designation.* (1) For the purposes of Subparts B and D of this part one or more competent persons shall be designated by the employer in accordance with the applicable requirements of this section unless the requirements of Subparts B and D of this part are always carried out by an N.F.P.A. Certified Marine Chemist.

(2) The employer shall indicate on U.S. Department of Labor Form MAR–8, "Designation of Competent Person" either those employees designated as competent persons or that the prescribed functions of such persons are always carried out by an N.F.P.A. Certified Marine Chemist in addition to his professional duties. When additions or changes are made in the personnel so designated, a new Form MAR–8 shall be executed. A copy of this executed form shall be forwarded to the nearest office of the Bureau of Labor Standards.

(b) *Criteria.* The following criteria shall guide the employer in designating employees as competent persons:

(1) Ability to understand the meaning of designations on certificates and of any qualifications relating thereto and to carry out any instructions, either written or oral, left by the N.F.P.A. Certified Marine Chemist.

(2) Ability to use and interpret the readings of an oxygen indicator and a combustible gas indicator. The ability to use and interpret the readings of a carbon monoxide indicator and a carbon dioxide indicator, if the operations involve such hazardous gases.

(3) Familiarity with and understanding of Subparts B and D of this part.

(4) Familiarity with the structure and knowledge of the location and designation of spaces of the types of vessels on which breaking work is done.

(5) Capability to perform the tests and inspections required by Subparts B and D of this part and to write the required logs.

(c) *Logging of inspections and tests* (1) When tests and inspections required to be performed by a competent person by any provisions of Subparts B and D of this part are made, a record of the locations, operations performed and date, time, and results of the tests and any instructions resulting therefrom shall be

recorded on U.S. Department of Labor Form MAR–9, "Log of Inspections and Tests by Competent Person." A separate form shall be used for each vessel on which tests and inspections are made.

(2) This record shall be available for inspection in the immediate vicinity of the affected operations while they are in progress. This record or copy thereof shall be kept on file for a period of at least 3 months from the date of the completion of the job.

(3) A copy of any certificate issued in accordance with § 1503.13 and of any instructions issued by the N.F.P.A. Certified Marine Chemist shall be kept on file with the log for a period of at least 3 months from the date of the completion of the job.

(d) *Application.* The provisions of this section are intended to apply in their entirety to employers engaged in general shipbreaking work where both Subparts B and D of this part are applicable. They do not apply in their entirety to employers whose work involves only certain portions of Subparts B and D of this part, such as the breaking of vessels with no exposure to fuel oil or other flammable hazards. In such cases employers may designate persons who are competent on the basis of the applicable portions of the criteria set forth in paragraph (b) of this section.

§ 1503.11 Precautions before entering.

(a) *Gassy atmospheres.* (1) Before employees are initially permitted to enter any of the ship's spaces designated in subdivisions (i) to (iii) of this subparagraph, either the atmosphere shall be considered to be immediately dangerous to life and the employees shall be protected with self-contained breathing apparatus or hose masks with blowers in accordance with § 1503.82 (a) and (b) (2) (i) or (ii), or the atmosphere shall be tested by a competent person to determine whether or not a flammable atmosphere is present.

(i) Cargo spaces or other spaces containing or having last contained combustible or flammable liquids or gases in bulk.

(ii) Cargo spaces or other spaces containing or having last contained bulk liquid or gas cargoes of a poisonous, corrosive, or irritant nature.

(iii) Spaces in tank vessels immediately above or adjacent to those described in subdivisions (i) and (ii) of this subparagraph.

(2) If the atmosphere is found to contain flammable or explosive vapors in concentrations at or above ten (10) percent of their lower explosive limit, either the space shall be ventilated sufficiently to bring the concentration below ten (10) percent of the lower explosive limit and, when necessary, the provisions of subparagraph (4) of this paragraph shall be applied, or employees shall be protected by self-contained breathing apparatus or hose masks with blowers in accordance with § 1503.82 (a) and (b) (2) (i) or (ii).

(3) Only emergency work shall be performed in spaces where conditions exist requiring self-contained breathing apparatus or hose masks as prescribed by subparagraph (2) of this paragraph and paragraph (b) (1) of this section.

(4) If the atmosphere is found to contain a concentration of hazardous contaminants below ten (10) percent of the lower explosive limit and not immediately dangerous to life, but above the threshold limit values for toxic substances, employees shall be protected in accordance with § 1503.82 (a) and (c).

(5) Where tests indicate that no flammable vapors are present the competent person shall test for the presence of sufficient oxygen as specified by paragraph (b) (2) of this section.

(b) *Oxygen deficient atmospheres.* (1) Before employees are permitted to enter sealed compartments, spaces which have been in a state of preservation, or any nonventilated compartments, either the atmosphere shall be considered to be immediately dangerous to life and the employees shall be protected in accordance with the provisions of § 1503.82 (a) and (b) (2) (i) or (ii), or the atmosphere shall be tested by a competent person with an oxygen indicator or other suitable device to ensure that it contains sufficient oxygen to sustain life.

(2) For purposes of this paragraph, an atmosphere containing 16.5 percent oxygen or capable of supporting a flame shall be considered to contain sufficient oxygen to sustain life.

(3) Mechanical ventilation which will provide at least one complete change of uncontaminated air may be substituted in lieu of either of the requirements of subparagraph (1) of this paragraph.

§ 1503.12 Cleaning and other cold work.

(a) Employees shall be permitted to remove residue materials or to perform other cold work in spaces described in § 1503.11(a) (1) (i) through (iii) only under the following conditions:

(1) Liquid residues of flammable and toxic materials shall be removed from the spaces as thoroughly as practicable before employees start actual cleaning operations in these spaces. Drippings and spills of these materials on deck or elsewhere alongside the vessel shall be cleaned up as the work progresses. Special care shall be taken to prevent the spilling or the draining of these materials into the water surrounding the vessel.

(2) Continuous natural or mechanical ventilation shall be provided to keep the concentration of flammable vapors below ten (10) percent of the lower explosive limit in all parts of the space, provided that if, because of the high volatility of the residues, a uniform concentration of less than ten (10) percent of the lower explosive limit cannot be achieved, sufficient exhaust ventilation shall be provided to reduce the concentration to or below that level in the major portions of the compartment.

(3) Tests shall be made by a competent person prior to commencement of cold work and with sufficient frequency thereafter, in accordance with temperature, volatility of the residues and other existing conditions in and about the spaces to ensure that the concentration stated in subparagraph (2) of this paragraph is not exceeded.

(4) Cold work only shall be permitted.

(5) Tests shall be made by a competent person to ensure that the exhaust vapors from these spaces are not accumulating in other areas within or around the vessel, marine railway, dry dock, or under the pier where sources of ignition may be present. Should such accumulations be found, any sources of ignition within the affected area shall be removed or extinguished.

(b) In spaces described in paragraph (b) of § 1503.13 only approved explosion-proof, self-contained, battery-fed portable lamps shall be used. Battery-fed portable lamps bearing the approval of the Underwriters' Laboratories for use in Class I, Group D atmospheres, or approved as permissible by the U.S. Bureau of Mines, and such lamps listed by the United States Coast Guard as approved for such use are deemed to meet the requirements of this paragraph.

(c) Signs shall be posted on the open deck adjacent to the access to spaces described in paragraph (b) of § 1503.13 prohibiting smoking and the use of open flames.

(d) Jet-type air-moving devices shall be electrically bonded to the vessel's structure.

§ 1503.13 Certification before hot work is begun.

(a) *Hot work in the open.* Before hot work is performed from open decks or in tanks or compartments from which the overhead has been completely removed, on the boundaries of cargo spaces or other spaces containing or having last contained combustible or flammable liquids or gases in bulk, the following steps shall be taken:

(1) Tests shall be made by a competent person to determine the concentration of flammable vapors in these spaces. The permissible level of concentration of flammable vapors shall not exceed ten (10) percent of the lower explosive limit in all parts of the spaces.

(2) When the tests indicate that a space contains a concentration of flammable vapors above the permissible concentration, the space shall be inerted with a nonflammable gas or with water, or sufficient ventilation shall be provided to reduce the concentration below the permissible level.

(3) When the bottom of a space contains flammable residues, it shall be flooded with water to cover all parts of the space to a depth of at least one (1) foot unless the space is inerted.

(b) *Hot work below decks.* Employees shall not be permitted to engage in hot work in or on the following spaces, boundaries or pipelines until a certificate setting forth that the hot work can be done in safety is issued. Such certificate shall be acceptable only if issued by a Marine Chemist certificated by the National Fire Protection Association.

(1) On tank vessels:

(i) Within or on the boundaries of cargo tanks which have been used to carry combustible or flammable liquids and gases in bulk, or within spaces adjacent to such cargo tanks.

(ii) Within or on the boundaries of fuel tanks.

(iii) On pipelines, heating coils, pumps, fittings, or other appurtenances connected to such cargo or fuel tanks.

(2) On dry cargo, miscellaneous, and passenger vessels:

(i) Within or on the boundaries of cargo tanks which have been used to carry combustible or flammable liquids and gases in bulk.

(ii) Within spaces adjacent to cargo tanks which have been used to carry flammable gases, or liquids with a flash point below 150° F., except where the distance between such cargo tanks and the work to be performed is not less than twenty-five (25) feet.

(iii) Within or on the boundaries of fuel tanks.

(iv) On pipelines, heating coils, pumps, fittings, or other appurtenances connected to such cargo or fuel tanks.

(3) In dry cargo holds for which a gas free certificate is not required by paragraph (b) (2) (ii) of this section, hot work may be performed only after a competent person has carefully examined the hold and found it to be free of flammable liquids, gases, and vapors. If flammable liquids, gases or vapors are found, hot work shall not be performed within the space until the flammable liquids, gases or vapors have been removed and a test indicates that the space is safe for fire.

(4) Before hot work is performed in engine room and boiler room spaces of any vessel for which a gas free certificate is not required by the provisions of paragraph (b) (1) and (2) of this section or in fuel tank and engine compartments of boats, the bilges shall be inspected and tested by a competent person to ensure that they are free of flammable liquids, gases and vapors. If flammable liquids, gases or vapors are found, hot work shall not be performed within the space until the flammable liquids, gases or vapors have been removed and a test indicates that the space is safe for fire.

§ 1503.14 Maintaining gas free conditions.

(a) *Hot work in the open.* (1) During the performance of hot work from open decks or in tanks or compartments from which the overhead has been completely removed, on the boundaries of spaces described in § 1503.13(a), other than those filled with water, the competent person shall make frequent tests to ensure that the inert atmosphere is being maintained or that the concentration of flammable vapors remains below ten (10) percent of the lower explosive limit.

(b) *Hot work below decks.* (1) When conditions in spaces below decks described in § 1503.13(b) (1) and (2) are such that there is a possibility of hazardous vapors being released from residues or other sources, after a gas free certificate has been issued, a competent person shall make tests to ensure that the gas free condition is maintained irrespective of whether hot work is being performed in or on the aforementioned spaces. When the competent person finds that the atmospheric conditions have altered, work shall be stopped and a new gas free certificate, in accordance with § 1503.13 (b) (1) and (2) shall be obtained, before work is resumed.

Subpart C—[Reserved]

Subpart D—Welding, Cutting and Heating

§ 1503.31 Ventilation and protection in welding, cutting and heating.

(a) *Mechanical ventilation; requirements.* (1) For purposes of this section, mechanical ventilation shall meet the following requirements:

(i) Mechanical ventilation shall consist of either general mechanical ventilation systems or local exhaust systems.

(ii) General mechanical ventilation shall be of sufficient capacity and so arranged as to produce the number of air changes necessary to maintain welding fumes and smoke within safe limits.

(iii) Local exhaust ventilation shall consist of freely movable hoods intended to be placed by the welder or burner as close as practicable to the work. This system shall be of sufficient capacity and so arranged as to remove fumes and smoke at the source and keep the concentration of them in the breathing zone within safe limits.

(iv) Contaminated air exhausted from a working space shall be discharged into the open air or otherwise clear of the source of intake air.

(v) All air replacing that withdrawn shall be clean and respirable.

(vi) Oxygen from a cylinder or torch shall not be used for ventilation purposes.

(b) *Welding, cutting and heating in confined spaces.* (1) Except as provided in subparagraph (3) of this paragraph and paragraph (c) (2) of this section, either general mechanical or local exhaust ventilation meeting the requirements of paragraph (a) of this section shall be provided whenever welding, cutting or heating is performed in a confined space.

(2) The means of access shall be provided to a confined space in accordance with § 1503.46(b) (1) and (2).

(3) When sufficient ventilation cannot be obtained without blocking the means of access, employees in the confined space shall be protected by air line respirators in accordance with the requirements of § 1503.82(a), and an employee on the outside of such a confined space shall be assigned to maintain communication with those working within it and to aid them in an emergency.

(c) *Welding, cutting or heating of metals of toxic significance.* (1) Welding, cutting or heating in any enclosed spaces aboard the vessel involving the metals specified in this subparagraph shall be performed with either general mechanical or local exhaust ventilation meeting the requirements of paragraph (a) of this section.

(i) Zinc-bearing base or filler metals or metals coated with zinc-bearing materials.

(ii) Lead base metals.

(iii) Cadmium-bearing filler materials.

(iv) Chromium-bearing metals or metals coated with chromium-bearing materials.

(2) Welding, cutting or heating in any enclosed spaces aboard the vessel involving the metals specified in this subparagraph shall be performed with local exhaust ventilation in accordance with the requirements of paragraph (a) of this section or employees shall be protected by air line respirators in accordance with the requirements of § 1503.82 (a).

(i) Metals containing lead, other than as an impurity, or metals coated with lead-bearing materials.

(ii) Cadmium-bearing or cadmium coated base metals.

(iii) Metals coated with mercury-bearing metals.

(iv) Beryllium-containing base or filler metals. Because of its high toxicity, work involving beryllium shall be done with both local exhaust ventilation and air line respirators.

(3) Employees performing such operations in the open air shall be protected by filter type respirators in accordance with requirements of paragraphs (a) and (d) (2) (iv) of § 1503.82, except that employees performing such operations on beryllium-containing base or filler metals shall be protected by air line respirators in accordance with the requirements of § 1503.82(a).

(4) Other employees exposed to the same atmosphere as the welders or burners shall be protected in the same manner as the welder or burner.

(d) *General welding, cutting and heating.* (1) Welding, cutting and heating not involving conditions or materials described in paragraph (b) or (c) of this section may normally be done without mechanical ventilation or respiratory protective equipment, but where, because of unusual physical or atmospheric conditions, an unsafe accumulation of contaminants exists, suitable mechanical ventilation or respiratory protective equipment shall be provided.

(2) Employees performing any type of welding, cutting or heating shall be protected by suitable eye protective equipment in accordance with the requirements of § 1503.81 (a) and (c).

§ 1503.32 Fire prevention.

(a) When hot work is performed below decks or in other situations in which accidental fire would jeopardize the safety of employees the following precautions shall be taken:

(1) When practical, objects to be welded, cut or heated shall be moved to a designated safe location or, if the object to be welded, cut or heated cannot be readily moved, all movable fire hazards in the vicinity shall be taken to a safe place.

(2) If the object to be welded, cut or heated cannot be moved and if all the fire hazards cannot be removed, positive means shall be taken to confine the heat, sparks and slag, and to protect the immovable fire hazards from them.

(3) When welding, cutting or heating is performed on tank shells, decks, overheads and bulkheads, since direct penetration of sparks or heat transfer may introduce a fire hazard to an adjacent compartment, the same precautions shall be taken on the opposite side as are taken on the side on which the welding is being performed.

(4) In order to eliminate the possibility of fire in enclosed spaces as a result of gas escaping through leaking or improperly closed torch valves, the gas supply to the torch shall be positively shut off at some point outside the enclosed space whenever the torch is not to be used or whenever the torch is left unattended for a substantial period of time, such as during the lunch hour. Overnight and at the change of shifts the torch and hose shall be removed from the enclosed space. Open end fuel gas and oxygen hoses shall be immediately removed from enclosed spaces when they are disconnected from the torch or other gas consuming device.

(b) In all cases suitable fire extinguishing equipment shall be immediately available in the work area and shall be maintained in a state of readiness for instant use.

§ 1503.33 Welding, cutting and heating in way of preservative coatings.

(a) Before welding, cutting or heating is commenced on any surface covered by a preservative coating whose flammability is not known, a test shall be made by a competent person to determine its flammability. Preservative coatings shall be considered to be highly flammable when scrapings burn with extreme rapidity.

(b) When coatings are determined to be highly flammable either they shall be stripped from the area to be heated to prevent ignition or they shall be burned away under controlled conditions. A 1½-inch or larger fire hose with fog nozzle, which has been uncoiled and placed under pressure, shall be immediately available for instant use in the immediate vicinity, consistent with avoiding freezing of the hose.

(c) Protection against toxic preservative coatings. (1) In enclosed spaces all surfaces covered with toxic preservatives shall be stripped of all toxic coatings for a distance of at least 4 inches from the area of heat application or the employees shall be protected by air line respirators meeting the requirements of § 1503.82(a).

(2) In the open air, employees shall be protected by a filter type respirator in accordance with requirements of § 1503.82 (a) and (d).

§ 1503.34 Welding, cutting and heating of hollow metal containers and structures not covered by § 1503.11.

(a) Drums, containers or hollow structures which have contained flammable substances shall, before welding, cutting or heating is undertaken on them, either be filled with water or thoroughly cleaned of such substances and ventilated and tested.

(b) Before heat is applied to a drum, container or hollow structure, a vent or opening shall be provided for the release of any built-up pressure during the application of heat.

(c) Before welding, cutting, heating or brazing is begun on structural voids such as skegs, bilge keels, fair waters, masts, booms, support stanchions, pipe stanchions or railings, a competent person shall inspect the object and, if necessary, test it for the presence of flammable liquids or vapors. If flammable liquids or vapors are present, the object shall be made safe.

(d) Objects such as those listed in paragraph (c) of this section shall also be inspected to determine whether water or other nonflammable liquids are present which, when heated, would build up excessive pressure. If such liquids are determined to be present, the object shall be vented, cooled or otherwise made safe during the application of heat.

(e) Jacketed vessels shall be vented before and during welding, cutting or heating operations in order to release any pressure which may build up during the application of heat.

§ 1503.35 Gas welding and cutting.

(a) *Transporting, moving and storing compressed gas cylinders.* (1) Valve protection caps shall be in place and secure. Oil shall not be used to lubricate protection caps.

(2) When cylinders are hoisted, they shall be secured on a cradle, slingboard or pallet. They shall not be hoisted by means of magnets or choker slings.

(3) Cylinders shall be moved by tilting and rolling them on their bottom edges. They shall not be intentionally dropped, struck or permitted to strike each other violently.

(4) When cylinders are transported by vehicle, they shall be secured in position.

(5) Valve protection caps shall not be used for lifting cylinders from one vertical position to another. Bars shall not be used under valves or valve protection caps to pry cylinders loose when frozen. Warm, not boiling, water shall be used to thaw cylinders loose.

(6) Unless cylinders are firmly secured on a special carrier intended for this purpose, regulators shall be removed and valve protection caps put in place before cylinders are moved.

(7) A suitable cylinder truck, chain or other steadying device shall be used to keep cylinders from being knocked over while in use.

(8) When work is finished, when cylinders are empty, or when cylinders are moved at any time, the cylinder valves shall be closed.

(9) Acetylene cylinders shall be kept in an upright position at all times.

(b) *Placing cylinders.* (1) Cylinders shall be kept far enough away from the actual welding or cutting operation so that sparks, hot slag or flame will not reach them. When this is impractical, fire resistant shields shall be provided.

(2) Cylinders shall be placed where they cannot become part of an electrical circuit. Electrodes shall not be struck against a cylinder to strike an arc.

(3) Fuel gas cylinders shall be placed with valve end up whenever they are in use. They shall not be placed in a location where they would be subject to open flame, hot metal or other sources of artificial heat.

(4) Cylinders containing oxygen or acetylene or other fuel gas shall not be taken into confined spaces.

(c) *Treatment of cylinders.* (1) Cylinders, whether full or empty, shall not be used as rollers or supports.

(2) No person other than the gas supplier shall attempt to mix gases in a cylinder. No one except the owner of the cylinder or person authorized by him shall refill a cylinder. No one shall use a cylinder's contents for purposes other than those intended by the supplier. Only cylinders bearing Interstate Commerce Commission identification and inspection markings shall be used.

(3) No damaged or defective cylinder shall be used.

(d) *Use of fuel gas.* The employer shall thoroughly instruct employees in the safe use of fuel gas, as follows:

(1) Before connecting a regulator to a cylinder valve, the valve shall be opened slightly and closed immediately. (This action is generally termed "cracking" and is intended to clear the valve of dust or dirt that might otherwise enter the regulator). The person cracking the valve shall stand to one side of the outlet, not in front of it. The valve of a fuel gas cylinder shall not be cracked where the gas would reach welding work, sparks, flame or other possible sources of ignition.

(2) The cylinder valve shall always be opened slowly to prevent damage to the regulator. To permit quick closing, valves on fuel gas cylinders shall not be opened more than 1½ turns. When a special wrench is required, it shall be left in position on the stem of the valve while the cylinder is in use so that the fuel gas flow can be shut off quickly in case of an emergency. In the case of manifolded or coupled cylinders, at least one such wrench shall always be available for immediate use. Nothing shall be placed on top of a fuel gas cylinder, when in use, which may damage the safety device or interfere with the quick closing of the valve.

(3) Fuel gas shall not be used from cylinders through torches or other devices which are equipped with shut-off valves without reducing the pressure through a suitable regulator attached to the cylinder valve or manifold.

(4) Before a regulator is removed from a cylinder valve, the cylinder valve shall always be closed and the gas released from the regulator.

(5) If, when the valve on a fuel gas cylinder is opened, there is found to be a leak around the valve stem, the valve shall be closed and the gland nut tightened. If this action does not stop the leak, the use of the cylinder shall be discontinued, and it shall be properly tagged and removed from the vessel. In the event that fuel gas should leak from the cylinder valve rather than from the valve stem and the gas cannot be shut off, the cylinder shall be properly tagged and removed from the vessel. If a regulator attached to a cylinder valve will effectively stop a leak through the valve seat, the cylinder need not be removed from the vessel.

(6) If a leak should develop at a fuse plug or other safety device, the cylinder shall be removed from the vessel.

(e) *Manifolds.* (1) Manifolds shall bear the name of the substance they

contain in letters at least one (1) inch high which shall be either painted on the manifold or on a sign permanently attached to it.

(2) All manifolds shall be placed in safe and accessible locations.

(3) Manifold hose connections shall be such that hose cannot be interchanged between fuel gases and oxygen manifolds. Adaptors shall not be used to permit the interchange of hose. Manifold hose connections shall be kept free of grease and oil.

(f) *Hose.* (1) Fuel gas hose and oxygen hose shall be easily distinguishable from each other. The contrast may be made by different colors or by surface characteristics readily distinguishable by the sense of touch. Oxygen and fuel gas hoses shall not be interchangable. A single hose having more than one gas passage, a wall failure of which would permit the flow of one gas into the other gas passage, shall not be used.

(2) When parallel sections of oxygen and fuel gas hose are taped together, not more than 4 inches out of 8 inches shall be covered by tape.

(3) All hose carrying acetylene, oxygen, natural or manufactured fuel gas, or any gas or substance which may ignite or enter into combustion or be in any way harmful to employees, shall be inspected at the beginning of each shift. Defective hose shall be removed from service.

(4) Hose which has been subjected to flashback or which shows evidence of severe wear or damage shall be tested to twice the normal pressure to which it is subject, but in no case less than two hundred (200) psi. Defective hose or hose in doubtful condition shall not be used.

(5) Hose couplings shall be of the type that cannot be unlocked or disconnected by means of a straight pull without rotary motion.

(6) Boxes used for the stowage of gas hose shall be ventilated.

(g) *Torch tips.* Clogged torch tip openings shall be cleaned with suitable cleaning wires, drills or other devices designed for such purpose.

(h) *Pressure regulators.* Oxygen and fuel gas regulators including their related gauges shall be in proper working order while in use.

§ 1503.36 Arc welding and cutting.

(a) *Manual electrode holders.* (1) Only manual electrode holders which are specifically designed for arc welding and cutting and are of a capacity capable of safely handling the maximum rated current required by the electrodes shall be used.

(2) Any current carrying parts passing through the portion of the holder which the arc welder or cutter grips in his hand shall be fully insulated against the maximum voltage encountered to ground.

(b) *Welding cables and connectors.* (1) All arc welding and cutting cables shall be of the completely insulated, flexible type, capable of handling the maximum current requirements of the work in progress, taking into account the duty cycle under which the arc welder or cutter is working.

(2) Only cable free from repair or splices for a minimum distance of ten (10) feet from the cable end to which the electrode holder is connected shall be used, except that cables with standard insulated connectors or with splices whose insulating quality is equal to that of the cable are permitted.

(3) When it becomes necessary to connect or splice lengths of cable one to another, substantial insulated connectors of a capacity at least equivalent to that of the cable shall be used. If connections are effected by means of cable lugs, they shall be securely fastened together to give good electrical contact, and the exposed metal parts of the lugs shall be completely insulated.

(4) Cables in poor repair shall not be used. When a cable, other than the cable lead referred to in subparagraph (2) of this paragraph, becomes worn to the extent of exposing bare conductors, the portion thus exposed shall be protected by means of rubber and friction tapes or other equivalent insulation.

(c) *Ground returns and machine grounding.* (1) A ground return cable shall have a safe current carrying capacity equal to or exceeding the specified maximum output capacity of the arc welding or cutting unit which it services. When a single ground return cable services more than one unit, its safe current carrying capacity shall equal or exceed the total specified maximum output capacities of all the units which it services.

(2) Structures or pipe lines, except pipe lines containing gases or flammable liquids or conduits containing electrical circuits, may be used as part of the ground return circuit, provided that the pipe or structure has a current carrying capacity equal to that required by subparagraph (1) of this paragraph.

(3) When a structure or pipe line is employed as a ground return circuit, it shall be determined that the required electrical contact exists at all joints. The generation of an arc, sparks or heat at any point shall cause rejection of the structure as a ground circuit.

(4) When a structure or pipe line is continuously employed as a ground return circuit, all joints shall be bonded, and periodic inspections shall be conducted to ensure that no condition of electrolysis or fire hazard exists by virtue of such use.

(5) The frames of all arc welding and cutting machines shall be grounded either through a third wire in the cable containing the circuit conductor or through a separate wire which is grounded at the source of the current. Grounding circuits, other than by means of the vessel's structure, shall be checked to ensure that the circuit between the ground and the grounded power conductor has resistance low enough to permit sufficient current to flow to cause the fuse or circuit breaker to interrupt the current.

(6) All ground connections shall be inspected to ensure that they are mechanically strong and electrically adequate for the required current.

(d) *Operating instructions.* Employers shall instruct employees in the safe means of arc welding and cutting as follows:

(1) When electrode holders are to be left unattended, the electrodes shall be removed and the holders shall be so placed or protected that they cannot make electrical contact with employees or conducting objects.

(2) Hot electrode holders shall not be dipped in water, since to do so may expose the arc welder or cutter to electric shock.

(3) When the arc welder or cutter has occasion to leave his work or to stop work for any appreciable length of time, or when the arc welding or cutting machine is to be moved, the power supply switch to the equipment shall be opened.

(4) Any faulty or defective equipment shall be reported to the supervisor.

(e) *Shielding.* Whenever practicable, all arc welding and cutting operations shall be shielded by noncombustible or flame-proof screens which will protect employees and other persons working in the vicinity from the direct rays of the arc.

Subpart E—Scaffolds, Ladders and Other Working Surfaces

§ 1503.41 Scaffolds or staging.

(a) *General requirements.* (1) All scaffolds and their supports, whether of lumber, steel or other material, shall be capable of supporting the load they are designed to carry with a safety factor of not less than four (4).

(2) All lumber used in the construction of scaffolds shall be spruce, fir, long leaf yellow pine, Oregon pine or wood of equal strength. The use of hemlock, short leaf yellow pine or short fiber lumber is prohibited.

(3) Lumber dimensions as given in this subpart are nominal except where given in fractions of an inch.

(4) All lumber used in the construction of scaffolds shall be sound, straight-grained, free from cross grain, shakes and large, loose or dead knots. It shall also be free from dry rot, large checks, worm holes or other defects which impair its strength or durability.

(5) Scaffolds shall be maintained in a safe and secure condition. Any component of the scaffold which is broken, burned or otherwise defective shall be replaced.

(6) Barrels, boxes, cans, loose bricks or other unstable objects shall not be used for the support of planking intended as scaffolds or working platforms.

(7) No scaffold shall be erected, moved, dismantled or altered except under the supervision of competent persons.

(b) *Horse scaffolds.* (1) The minimum dimensions of lumber used in the construction of horses shall be in accordance with Table E–1 in § 1503.68.

(2) Horses constructed of materials other than lumber shall provide the strength, rigidity, and security required of horses constructed of lumber.

(3) The lateral spread of the legs shall be equal to not less than one-third of the height of the horse.

(4) All horses shall be kept in good repair, and shall be properly secured

when used in staging or in locations where they may be insecure.

(5) Platform planking shall be in accordance with the requirements of paragraph (d) of this section.

(6) Backrails and toeboards shall be in accordance with paragraph (e) of this section.

(c) *Other types of scaffolds.* (1) Scaffolds of a type for which specifications are not contained in this section shall meet the general requirements of paragraphs (a), (d), and (e) of this section, shall be in accordance with recognized principles of design and shall be constructed in accordance with accepted standards covering such equipment.

(d) *Scaffold or platform planking.* (1) Platform planking shall be of not less than 2 x 10 inch lumber. Platform planking shall be straight-grained and free from large or loose knots and may be either rough or dressed.

(2) Platforms of staging shall be not less than two 10 inch planks in width except in such cases as the structure of the vessel or the width of the trestle ladders make it impossible to provide such a width.

(3) Platform planking shall project beyond the supporting members at either end by at least 6 inches but in no case shall project more than 12 inches unless the planks are fastened to the supporting members.

(4) Table E–2 in § 1503.68 shall be used as a guide in determining safe loads for scaffold planks.

(e) *Backrails and toeboards.* (1) Scaffolding, staging, runways, or working platforms which are supported or suspended more than 5 feet above a solid surface, or at any distance above the water, shall be provided with a railing which has a top rail whose upper surface is from 42 to 45 inches above the upper surface of the staging, platform, or runway and a midrail located half-way between the upper rail and the staging, platform, or runway.

(2) Rails shall be of 2 x 4 inch lumber, flat bar or pipe. When used with rigid supports, taut wire or fiber rope of adequate strength may be used. If the distance between supports is more than 8 feet, rails shall be equivalent in strength to 2 x 4 inch lumber. Rails shall be firmly secured.

(3) Rails may be omitted where the structure of the vessel prevents their use. When rails are omitted employees working more than 5 feet above solid surfaces shall be protected by safety belts and life lines meeting the requirements of § 1503.84(b), and employees working over water shall be protected by buoyant working vests meeting the requirements of § 1503.84(a).

(4) Employees working from scaffolds on floats subject to surging, shall be protected against falling toward the vessel by a railing or a safety belt and line attached to the backrail.

(5) When necessary, to prevent tools and materials from falling on men below, toeboards of not less than 1 x 4 inch lumber shall be provided.

(f) *Access to staging.* (1) Access to staging more than 5 feet above a floor, deck or the ground shall consist of well secured stairways, cleated ramps, fixed or portable ladders meeting the applicable requirements of § 1503.42 or rigid type non-collapsible trestles with parallel and level rungs.

(2) Ramps and stairways shall be provided with 36-inch handrails with midrails.

(3) Ladders shall be so located or other means shall be taken so that it is not necessary for employees to step more than one foot from the ladder to any intermediate landing or platform.

(4) Ladders forming integral parts of prefabricated staging are deemed to meet the requirements of these regulations.

(5) Access from above to staging more than 3 feet below the point of access shall consist of a straight, portable ladder meeting the applicable requirements of § 1503.42 or a Jacob's ladder properly secured, meeting the requirements of § 1503.44(d).

§ 1503.42 Ladders.

(a) *General requirements.* (1) The use of ladders with broken or missing rungs or steps, broken or split side rails, or other faulty or defective construction is prohibited. When ladders with such defects are discovered, they shall be immediately withdrawn from service. Inspection of metal ladders shall include checking for corrosion of interiors of open end, hollow rungs.

(2) When sections of ladders are spliced, the ends shall be abutted, and not fewer than 2 cleats shall be securely nailed or bolted to each rail. The combined cross sectional area of the cleats shall be not less than the cross sectional area of the side rail. The dimensions of side rails for their total length shall be those specified in paragraph (b) or (c) of this section.

(3) Portable ladders shall be lashed, blocked or otherwise secured to prevent their being displaced. The side rails of ladders used for access to any level shall extend not less than 36 inches above that level. When this is not practical, grab rails which will provide a secure grip for an employee moving to or from the point of access shall be installed.

(4) Portable metal ladders shall be of strength equivalent to that of wood ladders. Manufactured portable metal ladders provided by the employer shall be in accordance with the provisions of the American Standard Safety Code for Portable Metal Ladders, A14.2.

(5) Portable metal ladders shall not be used near electrical conductors nor for electric arc welding operations.

(6) Manufactured portable wood ladders provided by the employer shall be in accordance with the provisions of the American Standard Safety Code for Portable Wood Ladders, A14.1.

(b) *Construction of portable wood cleated ladders up to 30 feet in length.* (1) Wood side rails shall be made from West Coast hemlock, Eastern spruce, Sitka spruce, or wood of equivalent strength. Material shall be seasoned, straight-grained wood, and free from shakes, checks, decay or other defects which will impair its strength. The use of low density woods is prohibited.

(2) Side rails shall be dressed on all sides, and kept free of splinters.

(3) All knots shall be sound and hard. The use of material containing loose knots is prohibited. Knots shall not appear on the narrow face of the rail and, when in the side face, shall be not more than ½ inch in diameter or within ½ inch of the edge of the rail or nearer than 3 inches to a tread or rung.

(4) Pitch pockets not exceeding ⅛ inch in width, 2 inches in length and ½ inch in depth are permissible in wood side rails, provided that not more than one such pocket appears in each 4 feet of length.

(5) The width between side rails at the base shall be not less than 11½ inches for ladders 10 feet or less in length. For longer ladders this width shall be increased at least ¼ inch for each additional 2 feet of length.

(6) Side rails shall be at least 1⅝ x 3⅝ inches in cross section.

(7) Cleats (meaning rungs rectangular in cross section with the wide dimension parallel to the rails) shall be of the material used for side rails, straight-grained and free from knots. Cleats shall be mortised into the edges of the side rails ½ inch, or filler blocks shall be used on the rails between the cleats. The cleats shall be secured to each rail with three 10d common wire nails or fastened with through bolts or other fasteners of equivalent strength. Cleats shall be uniformly spaced not more than 12 inches apart.

(8) Cleats 20 inches or less in length shall be at least $^{25}/_{32}$ x 3 inches in cross section. Cleats over 20 inches but not more than 30 inches in length shall be at least $^{25}/_{32}$ x 3¾ inches in cross section.

(c) *Construction of portable wood cleated ladders from 30 to 60 feet in length.* (1) Ladders from 30 to 60 feet in length shall be in accordance with the specifications of paragraph (b) of this section with the following exceptions:

(i) Rails shall be of not less than 2 x 6 inch lumber.

(ii) Cleats shall be of not less than 1 x 4 inch lumber.

(iii) Cleats shall be nailed to each rail with five 10d common wire nails or fastened with through bolts or other fastenings of equivalent strength.

§ 1503.43 [Reserved]

§ 1503.44 Access to vessels.

(a) *Access to vessels afloat.* The employer shall not permit employees to board or leave any vessel, except a barge or river towboat, until the following requirements have been met:

(1) Whenever practicable, a gangway of not less than 20 inches walking surface, of adequate strength, maintained in safe repair and safely secured shall be used. If a gangway is not practicable, a substantial straight ladder, extending at least 36 inches above the upper landing surface and adequately secured against shifting or slipping shall be provided. In an emergency a Jacob's ladder meeting the requirements of paragraph (d) (1) and (2) of this section may be used.

(2) Each side of such gangway, and the turn table if used, shall have a rail-

ing with a minimum height of approximately 33 inches measured perpendicularly from rail to walking surface at the stanchion, with a midrail. Rails shall be of wood, pipe, chain, wire, or rope and shall be kept taut at all times.

(3) The gangway shall be kept properly trimmed at all times.

(4) When a fixed tread accommodation ladder is used, and the angle is low enough to require employees to walk on the edge of the treads, cleated duckboards shall be laid over and secured to the ladder.

(5) When the lower end of a gangway overhangs the water between the ship and the dock in such a manner that there is danger of employees falling between the ship and the dock, a net or other suitable protection shall be rigged at the foot of the gangway in such a manner as to prevent employees from falling from the end of the gangway.

(6) If the foot of the gangway is more than one foot away from the edge of the apron, the space between them shall be bridged by a firm walkway equipped with railings, with a minimum height of approximately 33 inches with midrails on both sides.

(7) Supporting bridles shall be kept clear so as to permit unobstructed passage for employees using the gangway.

(8) When the upper end of the means of access rests on or flush with the top of the bulwark, substantial steps properly secured and equipped with at least one substantial handrail approximately 33 inches in height shall be provided between the top of the bulwark and the deck.

(9) Obstructions shall not be laid on or across the gangway.

(10) The means of access shall be adequately illuminated for its full length.

(11) Loads shall not be passed over the means of access while employees are on it.

(b) *Access to vessels in drydock or between vessels.* Gangways meeting the requirements of paragraph (a) (1), (2), (8), (9) and (10) of this section shall be provided for access from wing wall to vessel or, when two or more vessels, other than barges or river towboats, are lying abreast, from one vessel to another.

(c) *Access to barges and river towboats.* (1) Ramps for access of vehicles to or between barges shall be of adequate strength, provided with side boards, well maintained and properly secured.

(2) Unless employees can step safely to or from the wharf, float, barge, or river towboat, either a ramp in accordance with the requirements of subparagraph (1) of this paragraph or a safe walkway in accordance with the requirements of paragraph (a)(6) of this section shall be provided. When a walkway is impracticable, a substantial straight ladder, extending at least 36 inches above the upper landing surface and adequately secured against shifting or slipping shall be provided. In an emergency a Jacob's ladder in accordance with the requirements of paragraph (d) of this section may be used.

(3) The means of access shall be in accordance with the requirements of paragraph (a) (8), (9) and (10) of this section.

(d) *Jacob's ladders.* (1) Jacob's ladders shall be of the double rung or flat tread type. They shall be well maintained and properly secured.

(2) A Jacob's ladder shall either hang without slack from its lashings or be pulled up entirely.

§ 1503.45 Access to and guarding of dry docks.

(a) A gangway, ramp or permanent stairway of not less than 20 inches walking surface, of adequate strength, maintained in safe repair and securely fastened, shall be provided between a floating dry dock and the pier or bulkhead.

(b) Each side of such gangway, ramp or permanent stairway, including those which are used for access to wing walls from dry dock floors, shall have a railing with a midrail. Such railings on gangways or ramps shall be approximately 42 inches in height; and railings on permanent stairways shall be not less than approximately 30 or more than approximately 34 inches in height. Rails shall be of wood, pipe, chain, wire, or rope and shall be kept taut at all times.

(c) Railings meeting the requirements of paragraph (b) of this section shall be provided on the means of access to and from the floors of graving docks.

(d) Railings approximately 42 inches in height, with a midrail, shall be provided on the edges of wing walls of floating dry docks and on the edges of graving docks. Sections of the railings may be temporarily removed where necessary to permit line handling while a vessel is entering the dock.

(e) When employees are working on the floor of a floating dry dock where they are exposed to the hazard of falling into the water, the end of the dry dock shall be equipped with portable stanchions and 42-inch railings with a mid rail. When such a railing would be impracticable or ineffective, other effective means shall be provided to prevent men from falling into the water.

(f) Access to wingwalls from floors of dry docks shall be by ramps, permanent stairways or ladders meeting the applicable requirements of § 1503.42.

§ 1503.46 Access to cargo and confined spaces.

(a) *Cargo spaces.* (1) There shall be at least one safe and accessible ladder in any cargo space which employees must enter.

(2) When any fixed ladder is visibly unsafe, the employer shall prohibit its use by employees.

(3) Straight ladders of adequate strength and suitably secured against shifting or slipping shall be provided as necessary when fixed ladders in cargo spaces do not meet the requirements of subparagraph (1) of this paragraph. In an emergency a Jacob's ladder meeting the requirements of § 1503.44(d) may be used.

(4) Fixed ladders or straight ladders provided for access to cargo spaces shall not be used at the same time that equipment, materials, scrap or other loads are entering or leaving the hold. Before using these ladders to enter or leave the hold, the employee shall be required to inform the winchman or crane signalman of his intention.

(b) *Confined spaces.* (1) More than one means of access shall be provided to a confined space in which employees are working and in which the work may generate a hazardous atmosphere.

(2) When the ventilating ducts required by these regulations must pass through these means of access an additional means of access shall be provided.

Subpart F—General Working Conditions

§ 1503.51 Housekeeping.

(a) All working areas on or immediately surrounding the vessel in a dry dock and graving dock or on a marine railway shall be kept in a reasonable state of order. Scrap, equipment and other materials shall be so piled as not to present a hazard to employees.

(b) Adequate aisles and passageways shall be maintained, as far as practicable, in all work areas, except when impossible due to the nature of the work being performed.

(c) Free access shall be maintained at all times to all exits and to fire-extinguishing equipment.

§ 1503.52 Illumination.

(a) All means of access and walkways leading to working areas as well as the working areas themselves shall be adequately illuminated.

(b) Temporary lights shall meet the following requirements:

(1) Temporary lights shall be equipped with guards to prevent accidental contact with the bulb, except that guards are not required when the construction of the reflector is such that the bulb is deeply recessed.

(2) Temporary lights shall be equipped with heavy duty electric cords with connections and insulation maintained in safe condition. Temporary lights shall not be suspended by their electric cords unless cords and lights are designed for this means of suspension.

(3) Cords shall be kept clear of working spaces and walkways or other locations in which they are readily exposed to damage.

(c) Exposed non-current-carrying metal parts of temporary lights furnished by the employer shall be grounded either through a third wire in the cable containing the circuit conductors or through a separate wire which is grounded at the source of the current. Grounding shall be in accordance with the requirements of § 1503.72(b).

(d) Where temporary lighting from sources outside the vessel is the only means of illumination, portable emergency lighting equipment shall be available to provide illumination for safe movement of employees.

(e) Employees shall not be permitted to enter dark spaces without a suitable portable light. The use of matches and open flame lights is prohibited. In non-gas free spaces, portable lights shall meet the requirements of § 1503.12(b).

(f) Temporary lighting stringers or streamers shall be so arranged as to avoid overloading of branch circuits. Each

branch circuit shall be equipped with overcurrent protection of capacity not exceeding the rated current carrying capacity of the cord used.

§ 1503.53 Utilities.

(a) *Steam supply and hoses.* (1) Prior to supplying a vessel with steam from a source outside the vessel, the employer shall ascertain the safe working pressure of the vessel's steam system. The employer shall install a pressure gauge and a relief valve of proper size and capacity at the point where the temporary steam hose joins the vessel's steam piping system or systems. The relief valve shall be set and capable of relieving at a pressure not exceeding the safe working pressure of the vessel's system in its present condition, and there shall be no means of isolating the relief valve from the system which it protects. The pressure gauge and relief valve shall be located so as to be visible and readily accessible.

(2) Steam hose fittings shall have a safety factor of not less than five (5).

(3) When steam hose is hung in a bight or bights, the weight shall be relieved by appropriate lines. The hose shall be protected against chafing.

(4) Steam hose shall be protected from damage and hose and temporary piping shall be so shielded where passing through normal work areas as to prevent accidental contact by employees.

(b) *Electric power.* (1) When the vessel is supplied with electric power from a source outside the vessel, the following precautions shall be taken prior to energizing the vessel's circuits:

(i) If in dry dock, the vessel shall be adequately grounded.

(ii) The employer shall ensure that all circuits to be energized are in a safe condition.

(iii) All circuits to be energized shall be equipped with overcurrent protection of capacity not exceeding the rated current carrying capacity of the cord used.

§ 1503.54 Work in confined or isolated spaces.

When any work is performed in a confined space, except as provided in § 1503.31(b)(3), or when an employee is working alone in an isolated location, frequent checks shall be made to ensure the safety of the employees.

§ 1503.55 [Reserved]

§ 1503.56 Work in or on lifeboats.

(a) Before employees are permitted to work in or on a lifeboat, either stowed or in a suspended position, the employer shall ensure that the boat is secured independently of the releasing gear to prevent the boat from falling due to accidental tripping of the releasing gear and movement of the davits or capsizing of a boat in chocks.

(b) Employees shall not be permitted to work on the outboard side of lifeboats stowed on their chocks unless the boats are secured by gripes or otherwise secured to prevent them from swinging outboard.

§ 1503.57 Health and sanitation.

(a) The employer shall provide adequate washing facilities for employees engaged in the various shipbreaking operations where contaminants can, by ingestion or absorption, be detrimental to the health of the employee. The employer shall encourage good personal hygiene practices by informing the employees of the need for removing surface contaminants by thorough washing of hands and face prior to eating or smoking.

(b) The employer shall not permit eating or smoking in the immediate areas where shipbreaking operations produce atmospheric contaminants.

(c) No minor under 18 years of age shall be employed in shipbreaking or related employments.

§ 1503.58 First aid.

(a) Unless a first aid room and a qualified attendant are close at hand and prepared to render first aid to employees on behalf of the employer, the employer shall furnish a first aid kit for each vessel on which work is being performed, except that when work is being performed on more than one small vessel at one pier, only one kit shall be required. The kit, when required, shall be kept close to the vessel and at least one employee, close at hand, shall be qualified to administer first aid to the injured.

(b) The first aid kit shall consist of a weatherproof container with individual sealed packages for each type of item. The contents of such kit shall contain a sufficient quantity of at least the following types of items:

Gauze roller bandages, 1 inch and 2 inch.
Gauze compress bandages, 4 inch.
Adhesive bandages, 1 inch.
Triangular bandage, 40 inch.
Ammonia inhalants and ampules.
Antiseptic applicators or swabs.
Burn dressing.
Eye dressing.
Wire or thin board splints.
Forceps and tourniquet.

(c) The contents of the first aid kit shall be checked before being sent out on each job, and at least weekly on each job, to ensure that the expended items are replaced.

(d) There shall be available for each vessel one Stokes basket stretcher, or equivalent, permanently equipped with bridles for attaching to the hoisting gear, except that no more than two stretchers are required on each job location. Stretchers shall be kept close to the vessels. This paragraph does not apply where ambulance services carry such stretchers.

Subpart G—Gear and Equipment for Rigging and Materials Handling

§ 1503.61 Inspection.

(a) All gear and equipment provided by the employer for rigging and materials handling shall be inspected before each shift and, when necessary, at intervals during its use to ensure that it is safe. Defective gear shall be removed and repaired or replaced before further use.

(b) The safe working load of gear as specified in §§ 1503.62 and 1503.63 shall not be exceeded.

§ 1503.62 Ropes, chains and slings.

(a) *Manila rope and manila rope slings.* Table G–1 in § 1503.68 shall be used to determine the safe working load of various sizes of manila rope and manila rope slings at various angles, except that higher safe working loads are permissible when recommended by the manufacturer for specific, identifiable products, provided that a safety factor of not less than five (5) is maintained.

(b) *Wire rope and wire rope slings.* (1) Tables G–2 through G–5 in § 1503.68 shall be used to determine the safe working loads of various sizes and classifications of improved plow steel wire rope and wire rope slings with various types of terminals. For sizes, classifications and grades not included in these tables, the safe working load recommended by the manufacturer for specific, identifiable products shall be followed, provided that a safety factor of not less than five (5) is maintained.

(2) Protruding ends of strands in splices on slings and bridles shall be covered or blunted.

(3) Where U-bolt wire rope clips are used to form eyes, Table G–6 in § 1503.68 shall be used to determine the number and spacing of clips. The U-bolt shall be applied so that the "U" section is in contact with the dead end of the rope.

(4) Wire rope shall not be secured by knots.

(c) *Chains and chain slings.* (1) Tables G–7 and G–8 in § 1503.68 shall be used to determine the working load limit of various sizes of wrought iron and alloy steel chains and chain slings, except that higher safe working loads are permissible when recommended by the manufacturer for specific, identifiable products.

(2) All sling chains, including end fastenings, shall be given a visual inspection before being used on the job. A thorough inspection of all chains in use shall be made every 3 months. Each chain shall bear an indication of the month in which it was thoroughly inspected. The thorough inspection shall include inspection for wear, defective welds, deformation and increase in length or stretch.

(3) Interlink wear, not accompanied by stretch in excess of 5 percent, shall be noted and the chain removed from service when maximum allowable wear at any point of link, as indicated in Table G–9 in § 1503.68, has been reached.

(4) Chain slings shall be removed from service when, due to stretch, the increase in length of a measured section exceeds five (5) percent; when a link is bent, twisted or otherwise damaged; or when raised scarfs or defective welds appear.

(5) All repairs to chains shall be made under qualified supervision. Links or portions of the chain found to be defective as described in paragraph (d) of this section shall be replaced by links having proper dimensions and made of material similar to that of the chain. Before repaired chains are returned to service, they shall be proof tested to the proof test load recommended by the manufacturer.

(6) Wrought iron chains in constant use shall be annealed or normalized at intervals not exceeding six months when recommended by the manufacturer. The chain manufacturer shall be consulted

for recommended procedures for annealing or normalizing. Alloy chains shall never be annealed.

(7) A load shall not be lifted with a chain having a kink or knot in it. A chain shall not be shortened by bolting, wiring or knotting.

§ 1503.63 Shackles and hooks.

(a) *Shackles.* (1) Table G–10 in § 1503.68 shall be used to determine the safe working loads of various sizes of shackles, except that higher safe working loads are permissible when recommended by the manufacturer for specific, identifiable products, provided that a safety factor of not less than five (5) is maintained.

(b) *Hooks.* (1) The manufacturer's recommendations shall be followed in determining the safe working loads of the various sizes and types of specific and identifiable hooks. All hooks for which no applicable manufacturer's recommendations are available shall be tested to twice the intended safe working load before they are initially put into use. The employer shall maintain a record of the dates and results of such tests.

(2) Loads shall be applied to the throat of the hook since loading the point overstresses and bends or springs the hook.

(3) Hooks shall be inspected periodically to see that they have not been bent by overloading. Bent or sprung hooks shall not be used.

§ 1503.64 Chain falls and pull-lifts.

(a) Chain falls and pull-lifts shall be clearly marked to show the capacity and the capacity shall not be exceeded.

(b) Chain falls shall be regularly inspected to ensure that they are safe, particular attention being given to the lift chain, pinion, sheaves and hooks for distortion and wear. Pull-lifts shall be regularly inspected to ensure that they are safe, particular attention being given to the ratchet, pawl, chain and hooks for distortion and wear.

(c) Straps, shackles, and the beam or overhead structure to which a chain fall or pull-lift is secured shall be of adequate strength to support the weight of load plus gear. The upper hook shall be moused or otherwise secured against coming free of its support.

§ 1503.65 Hoisting and hauling equipment.

(a) The moving parts of hoisting and hauling equipment shall be guarded.

(b) Mobile crawler or truck cranes used on a vessel:

(1) The maximum manufacturer's rated safe working loads for the various working radii of the boom and the maximum and minimum radii at which the boom may be safely used with and without outriggers shall be conspicuously posted near the controls and shall be visible to the operator. A radius indicator shall be provided.

(2) The posted safe working loads of mobile crawler or truck cranes under the conditions of use shall not be exceeded.

(3) The area within the swing radius of the body of a crawler or truck crane and the extended parts thereof shall be guarded in such a manner as to prevent an employer from being in such a position as to be struck by the crane or caught between the crane and fixed parts of the vessel or of the crane itself.

(c) Marine railways:

(1) The cradle or carriage on the marine railway shall be positively blocked or secured when in the hauled position to prevent it from being accidentally released.

§ 1503.66 Use of gear.

(a) Loads shall be safely rigged before being hoisted.

(b) When slings are secured to eyebolts, the slings shall be so arranged, using spreaders if necessary, that the pull is within 20 degrees of the axis of the bolt.

(c) Slings shall be padded by means of wood blocks or other suitable material where they pass over sharp edges or corners of loads so as to prevent cutting or kinking.

(d) Skips shall be rigged to be handled by not less than 3 legged bridles, and all legs shall always be used. When open end skips are used, means shall be taken to prevent the contents from falling.

(e) Loose ends of idle legs of slings in use shall be hung on the hook.

(f) Employees shall not be permitted to ride the hook or the load.

(g) Loads (tools, equipment or other materials) shall not be swung or suspended over the heads of employees.

(h) Pieces of equipment or structure susceptible to falling or dislodgement shall be secured or removed as early as possible.

(i) An individual who is familiar with the signal code in use shall be assigned to act as a signalman when the hoist operator cannot see the load being handled. Communications shall be made by means of clear and distinct visual or auditory signals except that verbal signals shall not be permitted.

(j) Pallets, when used, shall be of such material and construction and so maintained as to safely support and carry the loads being handled on them.

(k) Before loads or empty lifting gear are raised, lowered, or swung, clear and sufficient advance warning shall be given to employees in the vicinity of such operations.

(l) At no time shall an employee be permitted to place himself in a hazardous position between a swinging load and a fixed object.

(m) A section of hatch through which materials or equipment are being raised, lowered, moved or otherwise shifted by a crane, winch, hoist or derrick, shall be completely opened. The beams and pontoons left in place adjacent to an opening shall be sufficiently lashed, locked or otherwise secured to prevent them from being unshipped.

§ 1503.67 Qualifications of operators.

(a) Only those employees who understand the signs, notices, and operating instructions, and are familiar with the signal code in use, shall be permitted to operate a crane, winch, or other power operated hoisting apparatus.

(b) No employee known to have defective uncorrected eyesight or hearing, or to be suffering from heart disease, epilepsy, or similar ailment which may suddenly incapacitate him, shall be permitted to operate a crane, winch or other power operated hoisting apparatus.

§ 1503.68 Tables.

TABLE E–1

SPECIFICATIONS FOR THE CONSTRUCTION OF HORSES

Structural members	Height in feet		
	Up to 10	10 to 16	16 to 20
	Inches	*Inches*	*Inches*
Legs	2 x 4	3 x 4	4 x 6
Bearers or headers	2 x 6	2 x 8	4 x 6
Crossbraces	2 x 4 or 1 x 8	2 x 4	2 x 6
Longitudinal braces	2 x 4	2 x 6	2 x 6

TABLE E–2

SAFE CENTER LOADS FOR SCAFFOLD PLANK OF 1,100 POUNDS FIBRE STRESS

Span in feet	Lumber dimensions in inches									
	A	B	A	B	A	B	A	B	A	B
	2 x 10	1⅝ x 9¼	2 x 12	1⅝ x 11½	3 x 8	2⅝ x 7½	3 x 10	2⅝ x 9½	3 x 12	2⅝ x 11½
6	256		309		526		667		807	
8	192		232		395		500		605	
10	153		186		316		400		484	
12	128		155		263		333		404	
14	110		133		225		286		346	
16	-------		116		197		250		303	

(A)—Rough lumber.
(B)—Dressed lumber.

TABLE G-1
MANILA ROPE
(In pounds or tons of 2000 pounds)

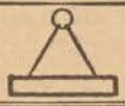
Circumference	Diameter in Inches	Single Leg	60°	45°	30°
					
3/4	1/4	120 lbs.	204 lbs.	170 lbs.	120 lbs.
1	5/16	200	346	282	200
1-1/8	3/8	270	467	380	270
1-1/4	7/16	350	605	493	350
1-3/8	15/32	450	775	635	450
1-1/2	1/2	530	915	798	530
1-3/4	9/16	690	1190	973	690
2	5/8	880	1520	1240	880
2-1/4	3/4	1080	1870	1520	1080
2-1/2	13/16	1300	2250	1830	1300
2-3/4	7/8	1540	2660	2170	1540
3	1	1800	3120	2540	1800
3-1/4	1-1/16	1.0 Tons	1.7 Tons	1.4 Tons	1.0 Tons
3-1/2	1-1/8	1.2	2.1	1.7	1.2
3-3/4	1-1/4	1.35	2.3	1.9	1.35
4	1-5/16	1.5	2.6	2.1	1.5
4-1/2	1-1/2	1.8	3.1	2.5	1.8
5	1-5/8	2.25	3.9	3.2	2.25
5-1/2	1-3/4	2.6	4.5	3.7	2.6
6	2	3.1	5.4	4.4	3.1
6-1/2	2-1/8	3.6	6.2	5.1	3.6

TABLE G-2

RATED CAPACITIES FOR IMPROVED PLOW STEEL, INDEPENDENT WIRE ROPE CORE, WIRE ROPE AND WIRE ROPE SLINGS

(In tons of 2000 pounds)

Rope Dia. Inches	SINGLE LEG					
	Vertical			Choker		
	A	B	C	A	B	C
	6x19 CLASSIFICATION					
1/4"	.59	.56	.53	.44	.42	.40
3/8"	1.3	1.2	1.1	.98	.93	.86
1/2"	2.3	2.2	2.0	1.7	1.6	1.5
5/8"	3.6	3.4	3.0	2.7	2.5	2.2
3/4"	5.1	4.9	4.2	3.8	3.6	3.1
7/8"	6.9	6.6	5.5	5.2	4.9	4.1
1"	9.0	8.5	7.2	6.7	6.4	5.4
1-1/8"	11.	10.	9.0	8.5	7.8	6.8
	6x37 CLASSIFICATION					
1-1/4"	13.	12.	10.	9.9	9.2	7.9
1-3/8"	16.	15.	13.	12.	11.	9.6
1-1/2"	19.	17.	15.	14.	13.	11.
1-3/4"	26.	24.	20.	19.	18.	15.
2"	33.	30.	26.	25.	23.	20.
2-1/4"	41.	38.	33.	31.	29.	25.

(A) - Socket or Swaged Terminal attachment.
(B) - Mechanical Sleeve attachment.
(C) - Hand Tucked Splice attachment.

TABLE G-3
RATED CAPACITIES FOR IMPROVED PLOW STEEL, INDEPENDENT WIRE ROPE CORE, WIRE ROPE SLINGS
(In tons of 2000 pounds)

Rope Dia. Inches	TWO - LEG BRIDLE OR BASKET HITCH											
	Vertical			60°			45°			30°		
	A	B	C	A	B	C	A	B	C	A	B	C
6x19 CLASSIFICATION												
1/4"	1.2	1.1	1.0	1.0	.97	.92	.83	.79	.75	.59	.56	.53
3/8"	2.6	2.5	2.3	2.3	2.1	2.0	1.8	1.8	1.6	1.3	1.2	1.1
1/2"	4.6	4.4	3.9	4.0	3.8	3.4	3.2	3.1	2.8	2.3	2.2	2.0
5/8"	7.2	6.8	6.0	6.2	5.9	5.2	5.1	4.8	4.2	3.6	3.4	3.0
3/4"	10.	9.7	8.4	8.9	8.4	7.3	7.2	6.9	5.9	5.1	4.9	4.2
7/8"	14.	13.	11.	12.	11.	9.6	9.8	9.3	7.8	6.9	6.6	5.5
1"	18.	17.	14.	15.	15.	12.	13.	12.	10.	9.0	8.5	7.2
1-1/8"	23.	21.	18.	19.	18.	16.	16.	15.	13.	11.	10.	9.0
6x37 CLASSIFICATION												
1-1/4"	26.	24.	21.	23.	21.	18.	19.	17.	15.	13.	12.	10.
1-3/8"	32.	29.	25.	28.	25.	22.	22.	21.	18.	16.	15.	13.
1-1/2"	38.	35.	30.	33.	30.	26.	27.	25.	21.	19.	17.	15.
1-3/4"	51.	47.	41.	44.	41.	35.	36.	33.	29.	26.	24.	20.
2"	66.	61.	53.	57.	53.	46.	47.	43.	37.	33.	30.	26.
2-1/4"	83.	76.	66.	72.	66.	57.	58.	54.	47.	41.	38.	33.

(A) - Socket or Swaged Terminal Attachment.
(B) - Mechanical Sleeve Attachment.
(C) - Hand Tucked Splice Attachment.

No. 56——9

TABLE G-4
RATED CAPACITIES FOR IMPROVED PLOW STEEL, FIBER CORE, WIRE ROPE AND WIRE ROPE SLINGS
(In tons of 2000 pounds)

Rope Dia. Inches	SINGLE LEG					
	Vertical			Choker		
	A	B	C	A	B	C
6x19 CLASSIFICATION						
1/4	.55	.51	.49	.41	.38	.37
3/8	1.2	1.1	1.1	.91	.85	.80
1/2	2.1	2.0	1.8	1.6	1.5	1.4
5/8	3.3	3.1	2.8	2.5	2.3	2.1
3/4	4.8	4.4	3.9	3.6	3.3	2.9
7/8	6.4	5.9	5.1	4.8	4.5	3.9
1	8.4	7.7	6.7	6.3	5.8	5.0
1-1/8	10.	9.5	8.4	7.9	7.1	6.3
6x37 CLASSIFICATION						
1-1/4	12.	11.	9.8	9.2	8.3	7.4
1-3/8	15.	13.	12.	11.	10.	8.9
1-1/2	17.	16.	14.	13.	12.	10.
1-3/4	24.	21.	19.	18.	16.	14.
2	31.	28.	25.	23.	21.	18.

(A) - Socket or Swaged Terminal attachment.
(B) - Mechanical Sleeve attachment.
(C) - Hand Tucked Splice attachment.

TABLE G-5

RATED CAPACITIES FOR IMPROVED PLOW STEEL, FIBER CORE, WIRE ROPE SLINGS

(In tons of 2000 pounds)

Rope Dia. Inches	TWO - LEG BRIDLE OR BASKET HITCH											
	Vertical			60°			45°			30°		
	A	B	C	A	B	C	A	B	C	A	B	C
6x19 CLASSIFICATION												
1/4	1.1	1.0	.99	.95	.88	.85	.77	.72	.70	.55	.51	.49
3/8	2.4	2.2	2.1	2.1	1.9	1.8	1.7	1.6	1.5	1.2	1.1	1.1
1/2	4.3	3.9	3.7	3.7	3.4	3.2	3.0	2.8	2.6	2.1	2.0	1.8
5/8	6.7	6.2	5.6	5.8	5.3	4.8	4.7	4.4	4.0	3.3	3.1	2.8
3/4	9.5	8.8	7.8	8.2	7.6	6.8	6.7	6.2	5.5	4.8	4.4	3.9
7/8	13.	12.	10.	11.	10.	8.9	9.1	8.4	7.3	6.4	5.9	5.1
1	17.	15.	13.	14.	13.	11.	12.	11.	9.4	8.4	7.7	6.7
1-1/8	21.	19.	17.	18.	16.	14.	15.	13.	12.	10.	9.5	8.4
6x37 CLASSIFICATION												
1-1/4	25.	22.	20.	21.	19.	17.	17.	16.	14.	12.	11.	9.8
1-3/8	30.	27.	24.	26.	23.	20.	21.	19.	17.	15.	13.	12.
1-1/2	35.	32.	28.	30.	27.	24.	25.	22.	20.	17.	16.	14.
1-3/4	48.	43.	38.	41.	37.	33.	34.	30.	27.	24.	21.	19.
2	62.	55.	49.	53.	48.	43.	43.	39.	35.	31.	28.	25.

(A) - Socket or Swaged Terminal attachment.
(B) - Mechanical Sleeve attachment.
(C) - Hand Tucked Splice attachment.

TABLE G-6

NUMBER AND SPACING OF U-BOLT WIRE ROPE CLIPS

Improved plow steel, rope diameter (inches)	Number of clips		Minimum spacing (inches)
	Drop forged	Other material	
1/2	3	4	3
5/8	3	4	3 3/4
3/4	4	5	4 1/2
7/8	4	5	5 1/4
1	4	6	6
1 1/8	5	6	6 3/4
1 1/4	5	7	7 1/2
1 3/8	6	7	8 1/4
1 1/2	6	8	9

TABLE G-7

WROUGHT IRON CHAIN

(In pounds or tons of 2000 pounds)

Nominal Size Chain Stock Inch.	Single Leg	60°	45°	30°
* 1/4	1060	1835	1500	1060
* 5/16	1655	2865	2340	1655
3/8	2385	2.1	3370	2385
* 7/16	3250	2.8	2.3	3250
1/2	2.1	3.7	3.0	2.1
* 9/16	2.7	4.6	3.8	2.7
5/8	3.3	5.7	4.7	3.3
3/4	4.8	8.3	6.7	4.8
7/8	6.5	11.2	9.2	6.5
1	8.5	14.7	12.0	8.5
1-1/8	10.0	17.3	14.2	10.0
1-1/4	12.4	21.4	17.5	12.4
1-3/8	15.0	25.9	21.1	15.0
1-1/2	17.8	30.8	25.2	17.8
1-5/8	20.9	36.2	29.5	20.9
1-3/4	24.2	42.0	34.3	24.2
1-7/8	27.6	47.9	39.1	27.6
2	31.6	54.8	44.8	31.6

* These sizes of wrought iron chain are no longer manufactured in the United States.

TABLE G-8
ALLOY STEEL CHAIN
(In tons of 2000 pounds)

Nominal Size Chain Stock Inch.	Single Leg 	60° 	45° 	30° 
1/4	1.62	2.82	2.27	1.62
3/8	3.30	5.70	4.65	3.30
1/2	5.62	9.75	7.90	5.62
5/8	8.25	14.25	11.65	8.25
3/4	11.5	19.9	16.2	11.5
7/8	14.3	24.9	20.3	14.3
1	19.3	33.5	27.3	19.8
1-1/8	22.2	38.5	31.5	22.2
1-1/4	28.7	49.7	40.5	28.7
1-3/8	33.5	58.0	47.0	33.5
1-1/2	39.7	68.5	56.0	39.7
1-5/8	42.5	73.5	59.5	42.5
1-3/4	47.0	81.5	62.0	47.0

TABLE G-9

MAXIMUM ALLOWABLE WEAR AT ANY POINT OF LINK

Chain size in inches	Maximum allowable wear in fraction of inches
1/4 (9/32)	3/64
5/16	5/64
3/8	7/64
7/16	9/64
1/2	5/32
5/8	11/64
3/4	3/16
7/8	7/32
1	1/4
1 1/8	9/32
1 1/4	5/16
1 3/8	11/32

TABLE G-10

SAFE WORKING LOADS FOR SHACKLES
(In tons of 2,000 pounds)

Material size (inches)	Pin diameter (inches)	Safe working load
1/2	5/8	1.4
5/8	3/4	2.2
3/4	7/8	3.2
7/8	1	4.3
1	1 1/8	5.6
1 1/8	1 1/4	6.7
1 1/4	1 3/8	8.2
1 3/8	1 1/2	10.0
1 1/2	1 5/8	11.9
1 3/4	2	16.2
2	2 1/4	21.2

TABLE I-1

FILTER LENSES FOR PROTECTION AGAINST RADIANT ENERGY

Operation	Shade No.
Soldering	2
Torch Brazing	3 or 4
Light cutting, up to 1 inch	3 or 4
Medium cutting, 1-6 inches	4 or 5
Heavy cutting, over 6 inches	5 or 6
Light gas welding, up to 1/8 inch	4 or 5
Medium gas welding, 1/8-1/2 inch	5 or 6
Heavy gas welding, over 1/2 inch	6 or 8
Shielded Metal-Arc Welding 1/16- to 5/32-inch electrodes	10
Inert-gas Metal-Arc Welding (Nonferrous) 1/16- to 5/32-inch electrodes	11
Inert-gas Metal-Arc Welding (Ferrous) 1/16- to 5/32-inch electrodes	12
Shielded Metal-Arc Welding:	
3/16 to 1/4 inch electrodes	12
5/16 and 3/8 inch electrodes	14
Atomic Hydrogen Welding	10 to 14
Carbon Arc Welding	14

Subpart H—Tools and Related Equipment

§ 1503.71 General precautions.

(a) Hand lines, slings, or tackles of adequate strength shall be used to handle tools, materials and equipment so that employees can have their hands free when using ship's ladders and access ladders. The use of hose or power cables for this purpose shall be prohibited.

(b) When air tools of the reciprocating type are not in use, the dies and tools shall be removed.

(c) All portable, power-driven circular saws shall be equipped with guards above and below the base plate or shoe. The upper guard shall cover the saw to the depth of the teeth, except for the minimum arc required to permit the base to be tilted for bevel cuts. The lower guard shall cover the saw to the depth of the teeth, except for the minimum arc required to allow proper retraction and contact with the work. When the tool is withdrawn from the work, the lower guard shall automatically and instantly return to the covering position.

(d) The moving parts of machinery on dry docks shall be adequately guarded.

(e) Before use, pneumatic tools shall be secured to the extension hose or whip by some positive means to prevent the tool from becoming accidentally disconnected from the whip.

§ 1503.72 Portable electric tools.

(a) The frames of portable electric tools and appliances shall be grounded either through a third wire in the cable containing the circuit conductors or through a separate wire which is grounded at the source of the current.

(b) Grounding circuits, other than by means of the structure of the vessel on which the tool is being used, shall be checked to ensure that the circuit between the ground and the grounded power conductor has resistance which is low enough to permit sufficient current to flow to cause the fuse or circuit breaker to interrupt the current.

(c) Portable electric tools which are held in the hand shall be equipped with switches of a type which must be manually held in the closed position.

(d) Worn or frayed electric cables shall not be used.

§ 1503.73 Hand tools.

(a) Employers shall not issue or permit the use of unsafe hand tools.

(b) Wrenches, including crescent, pipe, end and socket wrenches, shall not be used when jaws are sprung to the point that slippage occurs.

(c) Impact tools, such as drift pins, wedges, and chisels, shall be kept free of mushroomed heads.

(d) The wooden handles of tools shall be kept free of splinters or cracks and shall be kept tight in the tool.

§ 1503.74 Abrasive wheels.

(a) Floor stand and bench mounted abrasive wheels used for external grinding shall be provided with safety guards (protection hoods). The maximum angular exposure of the grinding wheel periphery and sides shall be not more than 90 degrees, except that when work

requires contact with the wheel below the horizontal plane of the spindle, the angular exposure shall not exceed 125 degrees. In either case the exposure shall begin not more than 65 degrees above the horizontal plane of the spindle. Safety guards shall be strong enough to withstand the effect of a bursting wheel.

(b) Floor and bench mounted grinders shall be provided with work rests which are rigidly supported and readily adjustable. Such work rests shall be kept a distance not to exceed ⅛ inch from the surface of the wheel.

(c) All portable abrasive wheels used for external grinding shall be provided with safety guards (protection hoods) meeting the requirements of paragraph (e) of this section, except as follows:

(1) When the work location makes it impossible, in which case a wheel equipped with safety flanges as described in paragraph (f) of this section shall be used.

(2) When wheels 2 inches or less in diameter which are securely mounted on the end of a steel mandrel are used.

(d) Portable abrasive wheels used for internal grinding shall be provided with safety flanges (protection flanges) meeting the requirements of paragraph (f) of this section, except as follows:

(1) When wheels 2 inches or less in diameter which are securely mounted on the end of a steel mandrel are used.

(2) If the wheel is entirely within the work being ground while in use.

(e) When safety guards are required, they shall be so mounted as to maintain proper alignment with the wheel, and the guard and its fastenings shall be of sufficient strength to retain fragments of the wheel in case of accidental breakage. The maximum angular exposure of the grinding wheel periphery and sides shall not exceed 180 degrees.

(f) When safety flanges are required they shall be used only with wheels designed to fit the flanges. Only safety flanges of a type and design and properly assembled so as to ensure that the pieces of the wheel will be retained in case of accidental breakage shall be used.

(g) All abrasive wheels shall be closely inspected and ring tested before mounting to ensure that they are free from cracks or defects.

(h) Grinding wheels shall fit freely on the spindle and shall not be forced on. The spindle nut shall be tightened only enough to hold the wheel in place.

(i) The power supply shall be sufficient to maintain the rated spindle speed under all conditions of normal grinding. The rated maximum speed of the wheel shall not be exceeded.

(j) All employees using abrasive wheels shall be protected by eye protection equipment in accordance with the requirements of § 1503.81 (a) and (b), except when adequate eye protection is afforded by eye shields which are permanently attached to the bench or floor stand.

Subpart I—Personal Protective Equipment

§ 1503.81 Eye protection.

(a) *General precautions.* (1) All eye protection equipment required by the regulations in this part shall meet the specifications prescribed by the American Standard Safety Code for Head, Eye and Respiratory Protection, Z2.1.

(2) Eye protection equipment shall be maintained in good condition.

(3) Eye protection equipment which has previously been used shall be cleaned and disinfected before it is issued by the employer to another employee.

(4) Employees who wear corrective spectacles while engaged in eye hazardous work shall be protected by eye protection equipment of a type which can be worn over personal spectacles, except that glasses with prescription ground safety lenses may be worn in lieu of cover goggles when such glasses provide suitable protection against the hazard involved.

(b) *Protection against impact.* (1) In any operations such as chipping, caulking, drilling, riveting, grinding, and pouring babbitt metal, in which the eye hazard of flying particles, molten metal, or liquid chemical exists, employees shall be protected by suitable face shields or goggles meeting the requirements of paragraph (a) of this section.

(c) *Protection against radiant energy.* (1) In any operation in which the eye hazard of injurious light rays or other radiant energy exists, depending upon the intensity of the radiation to which employees are exposed, they shall be protected by spectacles, cup goggles, helmets or hand shields equipped with filter lenses in accordance with the requirements of paragraphs (a) and (c) (2) of this section.

(2) Filter lenses shall be of a shade number appropriate to the type of work to be performed as indicated in Table I–1 in § 1503.68, except that variations of one or two shade numbers are permissible to suit individual preferences.

(3) If filter lenses are used in the goggles worn under the helmet, the shade number of the lens in the helmet may be reduced so that the sum of the shade numbers of the two lenses will equal the value shown in Table I–1 in § 1503.68.

§ 1503.82 Respiratory protection.

(a) *General.* (1) All respiratory protective equipment required by these regulations shall carry the U.S. Bureau of Mines approval for the use for which it is intended. Respiratory protective equipment shall be used only for the purpose intended and no modifications of the equipment shall be made.

(2) Respiratory protective equipment shall be inspected regularly and maintained in good condition. Gas mask canisters and chemical cartridges shall be replaced as necessary so as to provide complete protection. Mechanical filters shall be cleaned or replaced as necessary so as to avoid undue resistance to breathing.

(3) Respiratory protective equipment which has been previously used shall be cleaned and disinfected before it is issued by the employer to another employee. Emergency rescue equipment shall be cleaned and disinfected immediately after each use.

(4) Employees required to use respiratory protective equipment approved for use in atmospheres immediately dangerous to life shall be thoroughly trained in its use. Employees required to use other types of respiratory protective equipment shall be instructed in the use and limitations of such equipment.

(5) When an air line respirator is used, the air line shall be fitted with a pressure regulating valve and a filter which will remove oil, water, and rust particles. The air intake shall be from a source which is free from all contaminants, such as the exhaust from internal combustion engines.

(6) In all cases, when an employee is stationed outside a compartment, tank or space as a tender or safety man for men working inside in an atmosphere immediately dangerous to life the tender shall have immediately available for emergency use respiratory protective equipment equivalent to that required for the men in the compartment. When a tender is stationed outside a compartment for men working inside in an atmosphere not immediately dangerous to life the tender shall wear respiratory protective equipment equivalent to that required for the men in the compartment if he is exposed for prolonged periods to the same concentration of atmospheric contaminants.

(b) *Protection in atmospheres immediately dangerous to life.* (1) Atmospheres immediately dangerous to life are those which contain less than 16.5 percent oxygen, or which by reason of the high toxicity of the contaminant, as in fumigation, or high concentration of the contaminant, as with carbon dioxide, would endanger the life of a person breathing them for even a short period of time.

(2) In atmospheres immediately dangerous to life the only approved types of respiratory protective equipment are the following:

(i) Self-contained breathing apparatus, in which the wearer carries with him a supply of oxygen, air, or an oxygen generating material.

(ii) Hose mask with blower, in which a hand or motor operated blower supplies air at high volume and low pressure through a large diameter hose through which the wearer can draw air in case the blower fails.

(iii) If there is known to be more than 16 percent oxygen and less than 2 percent gas by volume, a gas mask equipped with a canister approved for the particular type gas involved.

NOTE: A gas mask offers absolutely no protection in an atmosphere deficient in oxygen.

(3) Work in atmospheres immediately dangerous to life shall be performed only in an emergency, as when rescuing a man who has been overcome or when shutting off a source of contamination that cannot otherwise be controlled. When an employee enters such an atmosphere he shall be provided with and use an adequate, attended life line.

(4) In the vicinity of each vessel in which there is a danger of employees being exposed to an atmosphere immediately dangerous to life the employer shall have on hand and ready for use respira-

tory protective equipment approved for such use. When such equipment is required, one or more persons shall be thoroughly trained in the use of the equipment.

(c) *Protection against gaseous contaminants not immediately dangerous to life.* (1) Gaseous contaminants not immediately dangerous to life are gases present in concentrations that could be breathed for a short period without endangering the life of a person breathing them, but which might produce discomfort and possible injury after a prolonged single exposure or repeated short exposures.

(2) When employees are exposed to a gaseous contaminated atmosphere not immediately dangerous to life, they shall be protected by respiratory protective equipment approved for use in the type and concentration of the gaseous contaminant as follows:

(i) In high or unknown concentrations, a hose mask or an air line respirator. The use of either a hose mask or an air line respirator in lower concentrations is permissible.

(ii) In concentrations of ammonia of less than 3 percent or of other gases less than 2 percent, by volume, a canister type gas mask equipped with the proper type of canister. Different canisters are approved for specific use against the following cases or groups of gases: acid gases, hydrocyanic acid gas, chlorine gas, organic vapors, ammonia gas, carbon monoxide, or combination of the above.

(iii) In low concentrations (less than 0.1 percent by volume), a chemical cartridge respirator equipped with the type of cartridge approved for use against the particular gases or groups of gases listed in subdivision (ii) of this subparagraph.

(d) *Protection against particulate contaminants not immediately dangerous to life.* (1) When employees are exposed to unsafe concentrations of particulate contaminants, such as dusts and fumes, mists and fogs or combinations of solids and liquids, they shall be protected by either air line or filter respirators, except as otherwise provided in the regulations of this part.

(2) Filter respirators shall be equipped with the proper type of filter. Different filters are approved for specific protection against groups of contaminants, as follows:

(i) Pneumoconiosis-producing dust and nuisance dust filters which provide respiratory protection against pneumoconiosis-producing dusts, such as aluminum, cellulose, cement, charcoal, coal, coke, flour, gypsum, iron ore, limestone and wood.

(ii) Toxic dust filters which provide respiratory protection against toxic dusts that are not significantly more toxic than lead, such as arsenic, cadmium, chromium, lead, manganese, selenium, vanadium, and their compounds.

(iii) Mist filters which provide respiratory protection against pneumoconiosis-producing mists, chromic acid mists and nuisance mists.

(iv) Fume filters which provide respiratory protection against fumes (solid dispersoids or particulate matter formed by the condensation of vapors, such as those from heated metals and other substances.)

(v) Filters which provide respiratory protection against combinations of two or more of the contaminants described in subdivisions (i) through (iv) of this subparagraph.

(e) *Protection against combinations of gaseous and particulate contaminants not immediately dangerous to life.* (1) When employees are exposed to combinations of gaseous and particulate contaminants not immediately dangerous to life, they shall be protected by respiratory protective equipment approved for use in the type and concentrations of the contaminants, as follows:

(i) In high or unknown concentrations, a hose mask or an air line respirator. The use of either a hose mask or an air line respirator is permissible in lower concentrations.

(ii) In concentrations of gaseous contaminants of less than 2 percent by volume, a canister type gas mask with a combination canister approved for the particular type of gaseous contaminant as specified in paragraph (c)(2) of this section and a filter for the particular type of particulate contaminant as specified in paragraph (d)(1) of this section.

(iii) In low concentrations of gaseous contaminants (less than 0.1 percent by volume) a respirator equipped with the type of cartridge and filter as specified in subdivision (ii) of this subparagraph.

§ 1503.83 Head, foot and body protection.

(a) When employees are working in areas where there is danger of falling objects they shall be protected by protective hats.

(b) Protective hats shall meet the specifications contained in the American Standard Safety Code for Head, Eye and Respiratory Protection, Z–2.1. Hats without dielectric strength shall not be used where there is the possibility of contact with electric conductors.

(c) Protective hats which have been previously worn shall be cleaned and disinfected before they are issued by the employer to another employee.

(d) The employer shall arrange through means, such as vendors or local stores, or otherwise, to make safety shoes readily available to all employees, and shall encourage their use. Metal toe caps from which the covering has been worn shall be insulated when employees are working on exposed energized circuits of the vessel's electrical system.

(e) Employees shall not be permitted to wear excessively greasy clothing when performing hot work operations.

(f) Employees shall be protected by suitable gloves when engaged in operations hazardous to their hands.

§ 1503.84 Life saving equipment.

(a) *Buoyant working vests.* (1) When employees are working from small boats or floats, near the unguarded edges of decks, or over water on scaffolds without guard rails, they shall be protected by U.S. Coast Guard approved buoyant working vests.

(b) *Safety belts and life lines.* (1) When employees are working aloft, or over a solid surface on staging more than 5 feet high without guard rails, they shall be protected by safety belts equipped with life lines which are secured with a minimum amount of slack to a fixed structure.

(2) When employees are working in atmospheres immediately dangerous to life, they shall be protected by a safety belt and an adequate, attended life line.

(3) Prior to each use, belts and life lines shall be inspected for dry rot, chemical damage or other defects which may affect their strength. Defective belts and life lines shall not be used.

(4) When employees are working in any location requiring a safety belt and a life line, as required in subparagraph (1) or (2) of this paragraph, care shall be exercised to ensure that the life line is not cut, pinched or led over a sharp edge. In hot work operations or those involving the use of acids or caustics, the line shall be kept clear to avoid its being burned or weakened. In order to keep the life line continuously attached with a minimum of slack to a fixed structure, the attachment point of the life line shall be appropriately changed as the work progresses.

(c) *Life rings and ladders.* (1) At least three 30-inch Coast Guard approved life rings with lines attached shall be kept in easily visible and readily accessible places in the immediate vicinity of each vessel afloat on which work is being performed.

(2) At least one life ring with a line attached shall be located on each staging float alongside a vessel on which work is being performed.

(3) At least 90 feet of line shall be attached to each life ring. Life rings and lines shall be maintained in good condition.

(4) In the vicinity of each vessel on which employees are working over water or close to unguarded deck edges there shall be at least one portable or permanent ladder of sufficient length to assist employees to reach safety in the event that they fall into the water.

APPENDIX I

THRESHOLD LIMIT VALUES FOR 1963

These values should be used as guides in the control of health hazards and should not be regarded as fine lines between safe and dangerous concentrations. They represent conditions under which it is believed that nearly all workers may be repeatedly exposed, day after day, without adverse effect. The values listed refer to time-weighted average concentrations for a normal workday. The amount by which these figures may be exceeded for short periods without injury to health depends upon a number of factors such as the nature of the contaminant, whether very high concentrations even for short periods produce acute poisoning, whether the effects are cumulative, the frequency with which high concentrations occur, and the duration of such periods. All must be taken into consideration in arriving at a decision as to whether a hazardous situation exists. Because it has been recognized that the threshold limits of certain acutely-acting substances may not provide a safety factor comparable to that of chronically-acting substances for which a time-weighted average applies, a "C" designation or "ceiling" has been affixed to such values indicat-

ing that the Threshold Limit Value should not be exceeded. The basis for the "C" listing is given in appendix C.

Special consideration should be given to the application of these values in assessing the health hazards which may be associated with exposure to mixtures of two or more substances. A brief discussion of basic considerations involved in developing threshold limit values for mixtures, and methods for their development, amplified by specific examples are given in appendix B.

Threshold limits are based on the best available information from industrial experience, from experimental studies, and, when possible, from a combination of the two. These values are based on various criteria of toxic effects or on marked discomfort; thus, they should not be used as a common denominator of toxicity, nor should they be considered as the sole criterion in proving or disproving diagnosis of suspected occupational disease.

These limits are intended for use in the field of industrial hygiene and should be interpreted and applied only by persons trained in this field. They are not intended for use, or for modification for use, (1) as a relative index of toxicity, by making a ratio of two limits, or (2) in the evaluation or control of community air pollution or air pollution nuisances, or (3) in estimating the toxic potential of continuous uninterrupted exposures.

RECOMMENDED VALUES (IN ALPHABETICAL ORDER)

	Substance	ppm*	Mg/M³**
	Acetaldehyde	200	360
	Acetic acid	10	25
	Acetic anhydride	5	20
	Acetone	1,000	2,400
	Acetonitrile	40	70
	Acetylene tetrabromide	1	14
†	Acrolein	0.1	0.25
	Acrylonitrile—Skin	20	45
	Aldrin (1,2,3,4,10,10-hexachloro-1,4,4a,5,8,8a-hexahydro-1,4,5,8-dimethano-naphthalene)—Skin	—	0.25
†	Allyl alcohol—Skin	2	5
	Allyl chloride	1	3
C	Allyl glycidyl ether (AGE)	10	45
	Allyl propyl disulfide	2	12
†	Ammonia	50	35
	Ammonium sulfamate (Ammate)	—	15
†	Amyl acetate	100	525
	Amyl alcohol (isoamyl alcohol)	100	360
	Aniline—Skin	5	19
	Antimony	—	0.5
	ANTU (alpha naphthyl thiourea)	—	0.3
	Arsenic	—	0.5
	Arsine	0.05	0.2
	Barium (soluble compounds)	—	0.5
C	Benzene (benzol)—Skin	25	80
	Benzidine	—	A[1]
	Benzyl chloride	1	5
	Beryllium	—	0.002
	Boron oxide	—	15
C	Boron trifluoride	1	3
	Bromine	0.1	0.7
	Butadiene (1,3-butadiene)	1,000	2,200
	2-Butanone (methyl ethyl ketone)	200	590
	2-Butoxy ethanol (Butyl Cellosolve)	50	240
	Butyl acetate (*n*-butyl acetate)	200	950
	Butyl alcohol	100	300
	tert. Butyl Alcohol	100	300
C	Butylamine	5	15
	n-Butylglycidylether (BGE)	50	270
	Butyl mercaptan	10	35
	p-tert. Butyltoluene	10	60
	Cadmium oxide fume	—	0.1
	Calcium arsenate	—	1
	Carbon dioxide	5,000	9,000
	Carbon disulfide—Skin	20	60
	Carbon monoxide	100	110
	Carbon tetrachloride—Skin	10	65
	Chlordane (1,2,4,5,6,7,8,8-octachloro-3a,4,7,7a-tetrahydro-4,7-methanoindene)	—	0.5
	Chlorinated camphene, 60%	—	0.5
	Chlorinated diphenyl oxide	—	0.5
	Chlorine	1	3
	Chlorine dioxide	0.1	0.3

†1963 Revision.
*Parts of vapor or gas per million parts of air by volume at 25° C and 760 mm. Hg pressure.
**Approximate milligrams of particulate per cubic meter of air.
A Numbers, See Appendix A.

RECOMMENDED VALUES (IN ALPHABETICAL ORDER)—continued

	Substance	ppm*	Mg/M³**
C	Chlorine trifluoride	0.1	0.4
C	Chloroacetaldehyde	1	3
	Chlorobenzene (monochlorobenzene)	75	350
	Chlorobromomethane	200	1,050
	Chlorodiphenyl (42% Chlorine)—Skin	—	1
	Chlorodiphenyl (54% Chlorine)—Skin	—	0.5
C	Chloroform (trichloromethane)	50	240
	1-Chloro-1-nitropropane	20	100
	Chloropicrin	0.1	0.7
	Chloroprene (2-chloro-1,3-butadiene)	25	90
	Chromic acid and chromates (as CrO_3)	—	0.1
	Cobalt	—	0.5
	Crag (R) herbicide (sodium) 2-[2,4-dichlorophenoxyl ethanol hydrogen sulfate)	—	15
	Cresol (all isomers)—Skin	5	22
	Cyanide (as CN)—Skin	—	5
	Cyclohexane	400	1,400
	Cyclohexanol	50	200
	Cyclohexanone	50	200
	Cyclohexene	400	1,350
	2,4-D (2,4-dichlorophenoxyacetic acid)	—	10
	DDT (2,2-bis [*p*-chlorophenyl]-1,1,1-trichloroethane)—Skin	—	1
	Decaborane—Skin	0.05	0.3
	Diacetone alcohol (4-hydroxy-4-methyl-2-pentanone)	50	240
	Diborane	0.1	0.1
	1,2-Dibromoethane (Ethylene dibromide)	25	190
	o-Dichlorobenzene	50	300
	p-Dichlorobenzene	75	450
	Dichlorodifluoromethane	1,000	4,950
	1,1-Dichloroethane	100	400
	1,2-Dichloroethane (ethylene dichloride)	50	200
	1,2-Dichloroethylene	200	790
C	Dichloroethyl ether	15	90
	Dichloromonofluoromethane	1,000	4,200
C	1,1-Dichloro-1-nitroethane	10	60
	Dichlorotetrafluoroethane	1,000	7,000
	Dieldrin (1,2,3,4,10,10-hexachloro-6, 7-epoxy-1, 4, 4a, 5, 6, 7, 8, 8a-octahydro-1, 4, 5,-8,-dimethanonaphthalene)—Skin	—	0.25
	Diethylamine	25	75
	Difluorodibromomethane	100	860
†C	Diglycidyl ether (DGE)	0.5	2.8
	Diisobutyl ketone	50	290
	Dimethyl acetamide—Skin	10	35
	Dimethylaniline (N-dimethylaniline)—Skin	5	25
	Dimethylformamide	20	60
	1,1-Dimethylhydrazine—Skin	0.5	1
	Dimethylsulfate—Skin	1	5
	Dinitrobenzene—Skin	—	1
	Dinitrotoluene—Skin	—	1.5
	Dinitro-o-cresol—Skin	—	0.2
	Dioxane (diethylene dioxide)	100	360
	Dipropylene glycol methyl ether	100	600
	EPN (O-ethyl O-*p*-nitrophenyl thionobenzenephosphonate)—Skin	—	0.5
	Ethyl acetate	400	1,400
	Ethyl acrylate—Skin	25	100
	Ethyl alcohol (ethanol)	1,000	1,900
	Ethylamine	25	45
C	Ethylbenzene	200	870
	Ethyl bromide	200	890
	Ethyl chloride	1,000	2,600
	Ethyl ether	400	1,200
	Ethyl formate	100	300
†C	Ethyl mercaptan	20	52
	Ethyl silicate	100	850
	Ethylene chlorohydrin—Skin	5	16
	Ethylenediamine	10	30
	Ethylene glycol dinitrate (Combined EGDN+NG)—Skin	0.2	1.2
	Ethylene imine—Skin	5	9
	Ethylene oxide	50	90
	2-Ethoxyethanol (Cellosolve)	200	740
	2-Ethoxyethylacetate (Cellosolve Acetate)	100	540
	Ferbam (ferric dimethyl dithiocarbamate)	—	15
	Ferrovanadium dust	—	1
	Fluoride (as F)	—	2.5
	Fluorine	0.1	0.2
	Fluorotrichloromethane	1,000	5,600
C	Formaldehyde	5	6
	Furfural	5	20
	Furfuryl alcohol	50	200
	Gasoline	500	2,000
	Glycidol (2,3-Epoxy-1-propanol)	50	150
	Heptane (*n*-heptane)	500	2,000
	Hexane (*n*-hexane)	500	1,800
	Hexanone (methyl butyl ketone)	100	410

RECOMMENDED VALUES (IN ALPHABETICAL ORDER)—continued

	Substance	ppm*	Mg/M³**
†	sec-Hexyl acetate	50	295
	Hexone (methyl isobutyl ketone)	100	410
C	Hydrazine—Skin	1	1.3
	Hydrogen bromide	3	10
C	Hydrogen chloride	5	7
	Hydrogen cyanide—Skin	10	11
	Hydrogen fluoride	3	2
	Hydrogen peroxide, 90%	1	1.4
	Hydrogen selenide	0.05	0.2
C	Hydrogen sulfide	20	30
	Hydroquinone	—	2
C	Iodine	0.1	1
	Iron oxide fume	—	15
	Isophorone	25	140
	Isopropylamine	5	12
	Isopropylglycidylether (IGE)	50	240
	Ketene	0.5	0.9
	Lead	—	0.2
	Lead arsenate	—	0.15
	Lindane (hexachlorocyclohexane, gamma isomer)	—	0.5
	Lithium hydride	—	0.025
	Magnesium oxide fume	—	15
	Malathion (*o,o*-dimethyl dithiophosphate of diethyl mercaptosuccinate)—Skin	—	15
C	Manganese	—	5
	Mercury—Skin	—	0.1
	Mercury (organic compounds)—Skin	—	0.01
	Mesityl oxide	25	100
	Methoxychlor (2,2-di-*p*-methoxyphenyl-1, 1, 1-trichloroethane)	—	15
	Methyl acetate	200	610
	Methyl acetylene	1,000	1,650
	Methyl acrylate—Skin	10	35
	Methylal (dimethoxymethane)	1,000	3,100
	Methyl alcohol (methanol)	200	260
C	Methyl bromide—Skin	20	80
	Methyl cellosolve (2-methoxyethanol)—Skin	25	80
	Methyl cellosolve acetate (ethylene glycol monomethyl ether acetate)	25	120
C	Methyl chloride	100	210
†	Methyl chloroform (1,1,1-trichloroethane)	350	1,900
	Methylcyclohexane	500	2,000
	Methylcyclohexanol	100	470
	Methylcyclohexanone	100	460
	Methyl formate	100	250
	Methyl isobutyl carbinol (methyl amyl alcohol)	25	100
†C	Methyl mercaptan	20	40
	α Methyl styrene	100	480
	Methylene chloride (dichloromethane)	500	1,750
	Monomethyl aniline—Skin	2	9
	Molybdenum (soluble compounds)	—	5
	(insoluble compounds)	—	15
	Naphtha (coal tar)	200	800
	Naphtha (petroleum)	500	2,000
	β-Naphthylamine	—	A[2]
	Nickel carbonyl	0.001	0.007
	Nicotine—Skin	—	0.5
	Nitric acid	10	25
	p-Nitroaniline—Skin	1	6
	Nitrobenzene—Skin	1	5
	Nitroethane	100	310
C	Nitrogen dioxide	5	9
C	Nitroglycerin (combined EGDN+NG)—Skin	0.2	2
	Nitromethane	100	250
	1-Nitropropane	25	90
	2-Nitropropane	25	90
	N-Nitrosodimethylamine (Dimethylnitrosamine)—Skin	A[2]	—
	Nitrotoluene—Skin	5	30
	Octane	500	2,350
	Osmium tetroxide	—	0.002
	Ozone	0.1	0.2
	Parathion (O, O, diethyl-O-*p*-nitrophenyl thiophosphate)—Skin	—	0.1
	Pentaborane	0.005	0.01
	Pentachloronaphthalene—Skin	—	0.5
	Pentachlorophenol—Skin	—	0.5
	Pentanone (methyl propyl ketone)	200	700
	Pentane	1,000	2,950
	Perchloroethylene (tetrachloroethylene)	100	670
	Perchloromethyl mercaptan	0.1	0.8
	Perchloryl fluoride	3	13.5
	Phenol—Skin	5	19
	Phenyl glycidyl ether (PGE)	50	310
	Phenylhydrazine—Skin	5	22
	Phosdrin (2-carbomethoxy-1-methyl vinyl dimethyl phosphate)	—	0.1
	Phosgene (carbonyl chloride)	1	4
†	Phosphine	0.3	0.4
	Phosphoric acid	—	1
	Phosphorus (yellow)	—	0.1
	Phosphorus pentachloride	—	1
	Phosphorus pentasulfide	—	1

RECOMMENDED VALUES (IN ALPHABETICAL ORDER)—continued

Substance	ppm*	Mg/M³**
Phosphorus trichloride	0.5	3
Picric acid—Skin	—	0.1
Platinum (soluble salts)	—	0.002
Propyl acetate	200	840
Propyl alcohol (isopropyl alcohol)	400	980
Propyl ether (isopropyl ether)	500	2,100
n-Propyl nitrate	25	110
Propylene dichloride (1,2-dichloropropane)	75	350
Propylene imine—Skin	25	60
Propylene oxide	100	240
Pyrethrum	—	5
Pyridine	5	15
Quinone	0.1	0.4
Rotenone (commercial)	—	5
Selenium compounds (as Se)	—	0.1
Sodium fluoroacetate (1080)—Skin	—	0.05
Sodium hydroxide	—	2
Stibine	0.1	0.5
Stoddard solvent	500	2,900
Strychnine	—	0.15
Styrene monomer (phenylethylene)	100	420
Sulfur dioxide	5	13
Sulfur hexafluoride	1,000	6,000
Sulfuric acid	—	1
C Sulfur monochloride	1	6
Sulfur pentafluoride	0.025	0.25
Sulfuryl fluoride	5	20
2,4,5T (2,4,5-Trichlorophenoxyacetic acid)	—	10
TEDP (tetraethyl dithionopyrophosphate)—Skin	—	0.2
Teflon (R) decomposition products	—	A[4]
TEPP (tetraethyl pyrophosphate)—Skin	—	0.05
Tellurium	—	0.1
1,2,2,2 - Tetrachloroethane — Skin	5	35
Tetrahydrofuran	200	590
Tetranitromethane	1	8
Tetryl (2,4,6-trinitrophenylmethylnitramine)—Skin	—	1.5
Thallium (soluble compounds)—Skin	—	0.1
Thiram (tetramethyl thiuram disulfide)	—	5
Titanium dioxide	—	15
C Toluene (toluol)	200	750
o-Toluidine—Skin	5	22
C Tolyene-2,4-diisocyanate	0.02	0.14
Trichloroethylene	100	520
Trichloronaphthalene—Skin	—	5
1,2,3-Trichloropropane	50	300
1,1,2-Trichloro 1,2,2-trifluoroethane	1,000	7,600
Triethylamine	25	100
Trifluoromonobromomethane	1,000	6,100
Trinitrotoluene—Skin	—	1.5
Triorthocresyl phosphate	—	0.1
Triphenyl phosphate	—	3
Turpentine	100	560
Uranium (soluble compounds)	—	0.05
(insoluble compounds)	—	0.25
Vanadium C (V_2O_5 dust)	—	0.5
(V_2O_5 fume)	—	0.1
C Vinyl chloride (chloroethylene)	500	1,300
Vinyl toulene	100	480
Warfarin (3[α acetonylbenzyl]-4-hydroxycoumarin)	—	0.1
Yttrium	—	5
C Xylene (xylol)	200	870
Xylidene—Skin	5	25
Zinc oxide fume	—	5
Zirconium compounds (as Zr)	—	5

NOTE: The word "Skin" following a substance indicates that the substance can penetrate the skin to contribute to the exposure and threshold limit value should be reduced accordingly.

†1963 Revision.
*Parts of vapor or gas per million parts of air by volume at 25° C and 760 mm. Hg pressure.
**Approximate milligrams of particulate per cubic meter of air.
A Numbers, See Appendix A.

Radioactivity: For permissible concentrations of radio-isotopes in air, see U.S. Department of Commerce, National Bureau of Standards, Handbook 69, "Maximum Permissible Body Burdens and Maximum Permissible Concentrations of Radionuclides in Air and in Water for Occupational Exposure," June 5, 1959. Also, see U.S. Department of Commerce, National Bureau of Standards, Handbook 59, "Permissible Dose from External Sources of Ionizing Radiation," September 24, 1954, and addendum of April 15, 1958.

MINERAL DUSTS

Substance	m.p.p.c.f.§
SILICA	
Crystalline	
Quartz, Threshold Limit calculated from the formula	250 / %SiO‡+5
Cristobalite, Threshold Limit calculated from the formula	
Amorphous, including natural diatomaceous earth	20
SILICATES (less than 1% crystalline silica)	
Asbestos	5
Mica	20
Soapstone	20
Talc	20
Portland Cement	50
Miscellaneous (less than 1% crystalline silica)	50

Conversion factors
mppcf x 35.3 = million particles per cubic meter = particles per c.c.

§Millions of particles per cubic foot of air, based on impinger samples counted by light-field technics.
‡The percentage of crystalline silica in the formula is the amount determined from air-borne samples, except in those instances in which other methods have been shown to be applicable.

TENTATIVE VALUES

Substance	ppm*	Mg/M³**
C tert. Butyl chromate (as CrO_3)—Skin	—	0.1
† Calcium oxide	—	5
Camphor	—	2
† Copper Fume	—	0.1
Dusts & Mists	—	1.0
DDVP (O, O-Dimethyl-2,2 - dichlorovinyl phosphate)	—	1
† Demeton (R) (Systox)	—	0.1
Endrin (1,2,3,4,10,10,-hexachloro-6, 7-epoxy-1,4,4a, 5,6,7,8,8a-octa hydro 1,4-endo - 5,8 - dimethanonaphthalene)—Skin	—	0.1
Epichlorhydrin	5	19
Ethanolamine	3	6
† Graphite	—	15 mppcf
† Hafnium	—	0.5
Heptachlor (1,4,5,6,7,8,8a-heptachloro-3a,4,7,7a-tetrahydro - 4,7 - methanoindene)	—	0.5
† Methylamine	25	31
† Methyl Methacrylate	100	410
†C Methylene bis phenylisocyanate	0.02	0.2
† Mineral Wool (Fiberglas)	—	2
† Naphthalene	10	50
Oil (mineral)	—	5
† β-Propiolactone	—	A[5]
† Silver	—	0.05
† Tantalum	—	5
† 1,1,1,2, - Tetrachloro - 2,2, - difluoroethane	1,000	8,340
† 1,1,2,2 - Tetrachloro - 1,2 - difluoroethane	500	4,170
† Tetraethyl lead	—	0.075
† Tin (inorganic compounds)	—	2
(organic compounds as Sn)—Skin	—	0.1

†1962 Additions.
*Parts of vapor or gas per million parts of air by volume at 25° C and 760 mm. Hg pressure.
**Approximate milligrams of particulate per cubic meter of air.
A numbers, See Appendix A.

APPENDIX A

A[1] Benzidine. Because of high incidence of bladder tumors in man, any exposure, including skin, is extremely hazardous.

A[2] β-Naphthylamine. Because of the extremely high incidence of bladder tumors in workers handling this compound, and the inability to control exposures, β-naphthylamine has been prohibited from manufacture, use and other activities that involve human contact by the State of Pennsylvania.

A[3] N-Nitrosodimethylamine. Because of extremely high toxicity and presumed carcinogenic potential of this compound, contact by any route should not be permitted.

A[4] Teflon ® decomposition products. At least one identified component of Teflon decomposition products is extremely toxic, but in the absence of more complete toxicity information and suitable analytic methods, a definite threshold limit value is not recommended at this time; but air concentrations should be minimal.

A[5] β-Propiolactone. Because of high acute toxicity and demonstrated skin tumor production in animals, contact by any route should be avoided.

APPENDIX B

THRESHOLD LIMIT VALUES FOR MIXTURES

When two or more hazardous substances are present, their combined effect, rather than that of either individually, should be given primary consideration. In the absence of information to the contrary, the effects of the different hazards should be considered as additive. That is, if the sum of the following fractions,

$$\frac{C_1}{T_1}+\frac{C_2}{T_2}+\cdots\frac{Cn}{Tn}$$

exceeds unity, then the threshold limit of the mixture should be considered as being exceeded. C indicates the observed atmospheric concentration, and T_1 the corresponding threshold limit. (See example 1A.a.)

Exceptions to the above rule may be made when there is good reason to believe that the chief effects of the different harmful substances are not in fact additive, but independent as when purely local effects on different organs of the body are produced by the various components of the mixture. In such cases the threshold limit ordinarily is exceeded only when at least one member of the series

$$\left(\frac{C_1}{T_1}\text{ or }\frac{C_2}{T_2}\text{ etc.}\right)$$

itself has a value exceeding unity. (See Example 1A.b.)

Antagonistic action or potentiation may occur with some combinations of atmospheric contaminants. Such cases at present must be determined individually. Potentiating or antagonistic agents are not necessarily harmful by themselves. Potentiating effects of exposure to such agents by routes other than that of inhalation is also possible, e.g., imbibed alcohol and inhaled narcotic (trichlorethylene). Potentiation is characteristically exhibited at high concentrations, less probably at low.

When a given operation or process characteristically emits a number of harmful dusts, fumes, vapors or gases, it will frequently be only feasible to attempt to evaluate the hazard by measurement of a single substance. In such cases, the threshold limit used for this substance should be reduced by a suitable factor, the magnitude of which will depend on the number, toxicity and relative quantity of the other contaminants ordinarily present.

Examples of processes which are typically associated with two or more harmful atmospheric contaminants are welding, automobile repair, blasting, painting, lacquering, certain foundry operations, diesel exhausts, etc. (Example 2.)

THRESHOLD LIMIT VALUES FOR MIXTURES

EXAMPLES

1A. General case, where air is analyzed for each component.

a. ADDITIVE EFFECTS

$$\frac{C_1}{T_1} + \frac{C_2}{T_2} + \frac{C_3}{T_3} + \ldots \frac{C_n}{T_n} = 1$$

Air contains 5 ppm of carbon tetrachloride (TLV, 10), 20 ppm of ethylene dichloride (TLV,50) and 10 ppm of ethylene dibromide, (TLV, 25).

$$\frac{5}{10} + \frac{20}{50} + \frac{10}{25} = \frac{65}{50} = 1.3$$

Threshold limit is exceeded.

b. INDEPENDENT EFFECTS

Air contains 0.15 mg/m³ of lead (TLV, 0.2) and 0.7 mg/m³ of sulfuric acid (TLV, 1).

$$\frac{0.15}{0.20} = 0.75; \frac{0.7}{1} = 0.7$$

Threshold limit is not exceeded.

1B. Special case when source of contaminant is a mixture and atmospheric composition is assumed similar to that of original material, i.e. vapor pressure of each component is the same at the observed temperature.

a. ADDITIVE EFFECTS, approximate solution.

1. A mixture of equal parts (1) trichloroethylene (TLV, 100), and (2) methyl chloroform (TLV, 350).

$$\frac{C_1}{100} + \frac{C_2}{350} = \frac{C_m}{T_m}$$

Solution applicable to "spot" solvent mixture usage, where all or nearly all, solvent evaporates.

$$C_1 = C_2 = \frac{1}{2} C_m$$

$$\frac{C_1}{100} + \frac{C_1}{350} = \frac{2C_1}{T_m}$$

$$\frac{7C_1}{700} + \frac{2C_1}{700} = \frac{2C_1}{T_m}$$

$$T_m = 700 \times \frac{2}{9} = 155 \text{ ppm}$$

1B.b. General Exact Solution for Mixtures of N Components With Additive Effects and Different Vapor Pressures.

(1) $\frac{C_1}{T_1} + \frac{C_2}{T_2} + \ldots + \frac{C_n}{T_n} = 1;$

(2) $C_1 + C_2 + \ldots + C_n = T;$

(2.1) $\frac{C_1}{T} + \frac{C_2}{T} + \ldots + \frac{C_n}{T} = 1.$

By the Law of Partial Pressures,

(3) $C_i = ap_i$

And by Raoult's Law,

(4) $p_i = F_i p_i^\circ$.

Combine (3) and (4) to obtain

(5) $C_i = aF_i p_i^\circ$.

Combining (1), (2.1), and (5), we obtain

(6) $\frac{F_1 p_1^\circ}{T} + \frac{F_2 p_2^\circ}{T} + \ldots + \frac{F_n p_n^\circ}{T} = \frac{F_1 p_1^\circ}{T_1} + \frac{F_2 p_2^\circ}{T_2} + \ldots + \frac{F_n p_n^\circ}{T_n}$, and solving for T,

(6.1) $$T = \frac{F_1 p_1^\circ + F_2 p_2^\circ + \ldots + F_n p_n^\circ}{\frac{F_1 p_1^\circ}{T_1} + \frac{F_2 p_2^\circ}{T_2} + \ldots + \frac{F_n p_n^\circ}{T_n}}$$

$i = n$

or (6.2) $$T = \frac{\sum F_i p_i^\circ}{\sum_{i=1}^{i=n} \frac{F_i p_i^\circ}{T_i}}$$

T = Threshold limit value in ppm.
C = Vapor concentration in ppm.
p = Vapor pressure of component in solution.
p° = Vapor pressure of pure component.
F = Mol fraction of component in solution.
a = A constant of proportionality.
Subscripts 1,2, . . . n relate the above quantities to components 1,2, . . . n, respectively.
Subscript i refers to an arbitrary component from 1 to n.
Absence of subscript relates the quantity to the mixture.

Solution to be applied when there is a reservoir of the solvent mixture whose composition does not change appreciably by evaporation.

Exact Arithmetic Solution of Specific Mixture

	Mol. wt.	Density	T	p° at 25°C	Mol fraction in half-and half solution by volume
Trichloroethylene (1)	131.4	1.46 g/ml	100	73mm Hg	0.527
Methylchloroform (2)	133.42	1.33 g/ml	350	125mm Hg	0.473

$F_1 p_1^\circ = (0.527)(73) = 38.2$

$F_2 p_2^\circ = (0.473)(125) = 59.2$

$$T = \frac{38.2 + 59.2}{\frac{38.2}{100} + \frac{59.2}{350}} = \frac{(97.4)\ (350)}{133.8 + 59.2} = \frac{(97.4)\ (350)}{193.0} = 177$$

T = 177 ppm (Note difference in T.L.V. when account is taken of vapor pressure and mol fraction in comparison with above example where such account is not taken).

2. A mixture of one part of (1) parathion (TLV, 0.1) and two parts of (2) EPN (TLV, 0.5).

$$\frac{C_1}{0.1} + \frac{C_2}{0.5} = \frac{C_m}{T_m}\ C_2 = 2C_1$$

$$C_m = 3C_1$$

$$\frac{C_1}{0.1} + \frac{2C_1}{0.5} = \frac{3C_1}{T_m}$$

$$\frac{7C_1}{0.5} = \frac{3C_1}{T_m}$$

$$T_m = \frac{1.5}{7} = 0.21 \text{ mg/m}^3$$

1C. INDEPENDENT EFFECTS

1. From naphtha (TLV, 500) containing 10 mole per cent benzene (TLV, 25) the narcotic effects can considered as approximately the same as that of benzene-free naphtha.

The blood effects can be considered as due to the benzene alone.

For **intermittent exposure**, a TLV of 500 ppm may be used as long as the **average** concentration does not exceed $25 \times \frac{100}{10} = 250$ ppm, the TLV based on the benzene content.

2. Diesel engine exhaust contains several irritants, one of which is nitrogen dioxide. A limit of 2 ppm NO_2 has been found to correlate fairly well with the beginning of subjective (irritation) effects from such gases, although no subjective effects are experienced from NO_2 alone at 5 ppm.

Appendix C

BASES FOR ASSIGNING LIMITING "C" VALUES*

T.L.V. RANGE ppm* or mg/m³	Permitted Fluctuation Factor of T.L.V. for 5, 10 or 30 min.	Examples
0 to 1	3	Boron trifluoride (1 ppm) at 3 ppm if repeatedly encountered for periods of 5, 10, or 30 minutes, may lead to pneumonitis; a "C" listing recommended.
1+ to 10	2	
10+ to 100	1.5	Ethyl benzene (200 ppm) at 250 ppm if repeatedly encountered for periods of 5 or 10 minutes may prove intolerably irritating to the eyes; a "C" listing recommended.
100+ to 1000	1.25	

*According to this limitation, the presently listed TLVs will or will not be candidates for a "C" (ceiling) listing. 1963 TLVs not coming within this limitation will bear a "C" before the substance name. Judgment is based on whether the excursions in concentration under the time limits stated may result in a) intolerable irritation, b) chronic or irreversible tissue change, or c) narcosis of sufficient degree to increase accident proneness or materially reduce work efficiency.

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