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FEDERAL REGISTER

VOLUME 29 NUMBER 73

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Title 5—ADMINISTRATIVE PERSONNEL

Chapter I—Civil Service Commission

PART 213—EXCEPTED SERVICE

Department of Justice

Section 213.3310 is amended to show the revocation of the exception for the position of Executive Assistant to the Deputy Attorney General. Effective upon publication in the FEDERAL REGISTER, subparagraph (6) of paragraph (b) of § 213.3310 is revoked.

(R.S. 1753, sec. 2, 22 Stat. 403, as amended; 5 U.S.C. 631, 633; E.O. 10577, 19 F.R. 7521, 3 CFR, 1954–1958 Comp., p. 218)

UNITED STATES CIVIL SERVICE COMMISSION,
[SEAL] MARY V. WENZEL,
Executive Assistant to the Commissioners.

[F.R. Doc. 64-3647; Filed, Apr. 13, 1964; 8:49 a.m.]

PART 550—PAY ADMINISTRATION (GENERAL)

Subpart D—Payments During Evacuation

PURPOSE

Section 550.401 is amended to clarify its meaning to show that payments are permissible when an evacuation occurs within as well as from a United States area. Effective upon publication in the FEDERAL REGISTER, § 550.401 is amended as set out below.

§ 550.401 Purpose.

The purpose of this subpart is to provide the authority necessary for a department to administer the act (except section 5), by establishing an efficient, orderly, and equitable procedure for the payment of compensation, allowances, and differentials in the event of an emergency evacuation of employees or their dependents, or both, from or within United States areas for military reasons or because of imminent danger to their lives.

(Sec. 6, 75 Stat. 644; 5 U.S.C. 3076; E.O. 10982; 27 F.R. 3, 3 CFR, 1962 Supp.)

UNITED STATES CIVIL SERVICE COMMISSION,
[SEAL] MARY V. WENZEL,
Executive Assistant to the Commissioners.

[F.R. Doc. 64-3648; Filed, Apr. 13, 1964; 8:49 a.m.]

Title 7—AGRICULTURE

Chapter IX—Agricultural Marketing Service (Marketing Agreements and Orders; Fruits, Vegetables, Tree Nuts), Department of Agriculture

[Lemon Reg. 105, Amdt. 1]

PART 910—LEMONS GROWN IN CALIFORNIA AND ARIZONA

Limitation of Handling

Findings. 1. Pursuant to the marketing agreement, as amended, and Order No. 910, as amended (7 CFR Part 910; 27 F.R. 8346), regulating the handling of lemons grown in California and Arizona, effective under the applicable provisions of the Agricultural Marketing Agreement Act of 1937, as amended (7 U.S.C. 601–674), and upon the basis of the recommendation and information submitted by the Lemon Administrative Committee, established under the said amended marketing agreement and order, and upon other available information, it is hereby found that the limitation of handling of such lemons as hereinafter provided will tend to effectuate the declared policy of the act.

2. It is hereby further found that it is impracticable and contrary to the public interest to give preliminary notice, engage in public rule-making procedure, and postpone the effective date of this amendment until 30 days after publication hereof in the FEDERAL REGISTER (5 U.S.C. 1001–1011) because the time intervening between the date when information upon which this amendment is based became available and the time when this amendment must become effective in order to effectuate the declared policy of the act is insufficient, and this amendment relieves restriction on the handling of lemons grown in California and Arizona.

Order, as amended. The provisions in paragraph (b) (1) (ii) of § 910.405 (Lemon Regulation 105, 29 F.R. 4792) are hereby amended to read as follows:

§ 910.405 Lemon Regulation No. 105.

* * * * *

(b) * * *
(1) * * *
(ii) District 2: 218,550 cartons.

(Secs. 1–19, 48 Stat. 31, as amended; 7 U.S.C. 601–674)

Dated: April 9, 1964.

PAUL A. NICHOLSON,
Deputy Director, Fruit and Vegetable Division, Agricultural Marketing Service.

[F.R. Doc. 64-3658; Filed, Apr. 13, 1964; 8:49 a.m.]

Title 14—AERONAUTICS AND SPACE

Chapter I—Federal Aviation Agency

SUBCHAPTER E—AIRSPACE [NEW]

[Airspace Docket No. 63–WE–86]

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

Revocation of Federal Airway Segment

Correction

In F.R. Doc. 64-3454, appearing at page 4963 of the issue for Thursday, April 9, 1964, the language "In V–8" in the fourth paragraph should read "In V–81".

Title 16—COMMERCIAL PRACTICES

Chapter I—Federal Trade Commission

[Docket 8309 o.]

PART 13—PROHIBITED TRADE PRACTICES

Bakers of Washington, Inc., et al.

Subpart—Coercing and intimidating: § 13.345 *Competitors.* Subpart—Combining or conspiring: § 13.430 *To enhance, maintain or unify prices.*

(Sec. 6, 38 Stat. 721; 15 U.S.C. 46. Interpret or apply sec. 5, 38 Stat. 719, as amended; 15 U.S.C. 45) [Cease and desist order, Bakers of Washington, Inc. (Seattle, Wash.) et al., Docket 8309, Feb. 28, 1964]

In the Matter of Bakers of Washington, Inc., an Incorporated Association, its Officers, Board of Trustees, Employees, Representatives and Agents, Including but not Limited to the Following: George B. Buchan, Richard Hoyt, Arthur H. Lalime; the Following Named Members of Respondent Association: Buchan Baking Co., Continental Baking Company, Langendorf United Bakeries, Inc., Hansen Baking Co., Inc., Trennery's Bakery Co., Snyder's Bakery, Inc., Corporations. John M. Larsen, Trading as Larson's Bakery, Vic H. Goethals, Trading as Fortune's Bakery, Each Individually and as a Member of the Respondent Association and all as Representative of all of the Members of Respondent Association; Safeway Stores, Inc. and Holsum Baking Company, Corporations

Order requiring a trade association with headquarters in Seattle, Wash.,

along with its responsible officers and wholesale and retail baker members in Washington State, to cease conspiring among themselves and with others to fix and adhere to prices, terms or conditions of sale of bread, and to deter or attempt to deter any competitor from exercising his individual judgment as to prices and terms of sale.

The order to cease and desist, including further order requiring report of compliance therewith, is as follows:

It is ordered, That respondent Bakers of Washington, Inc., an incorporated association, and respondents George B. Buchan and Richard Hoyt, individually and as officers of respondent association, and respondents Buchan Baking Co., Continental Baking Company, Langendorf United Bakeries, Inc., Hansen Baking Co., Inc., Trenerry's Bakery Co., and Snyder's Bakery, Inc., corporations, John M. Larson, trading as Larson's Bakery, and Vic H. Goethals, trading as Fortune's Bakery, all members of respondent association; and the following members of said association: Ruth Ashbrook Bakeries Corp., 1407 11th Avenue, Seattle, Washington; Albertson's Inc., 17000 Aurora Avenue, Seattle; Baders' Dutch Bakeries, 3755 University, Seattle; Baker Boy Bakery, 8050 Bothell Way, Seattle; Bake-Rite Bakery, 1414 14th Avenue, Seattle; Bellinger Bakery, North Bend; Best Pie Company, Inc., 132 Queen Anne Avenue, Seattle; Big Four Donut, Inc., 319 Nickerson Street, Seattle; Blake's Bakery, Inc., 4729 California Avenue, Seattle; Bookter's Seattle Bakery, Inc., 3409 4th Avenue, South, Seattle; Butter-Krisp Bakery, Inc., 2203 23d Avenue, South, Seattle; Boldt's Western Hotels Food Service, Inc., Boeing Cafeteria, Boeing Plant No. 2, Seattle; Carolyn's Cakes, 518 15th Avenue, North, Seattle; Caster's Lake City Bakery, 12532 Bothell Way, Seattle; Frederick & Nelson (Bakery Department), 5th at Pine, Seattle; Gai's Seattle French Baking Co., Inc., 2006 Weller Street, Seattle; Golden Rule Bakery, Inc., 4450 Fremont Avenue, Seattle; Grandma Cookie Baking Co., Inc., 3402 Wallingford Avenue, Seattle; Karl's Bakery, 1614 Hewitt Avenue, Everett; Kent Bakery, 213 First South, Kent; Lippman's Bakery, Inc., 119 23d Avenue, Seattle; Lindsay's Thriftway Market, 11100 Roosevelt Way, Seattle; Manning's, Inc., 621 Seaboard Building, Seattle; Richard's Fried Pies, Inc., 220 1st Avenue, North, Seattle; Swiss Pastry & Candy Shop, 1325 5th Avenue, Seattle; Smith & Sonnleitner Cookie Co., 1238 No. 99 W., McMinnville, Oregon (7710 Bagley, Seattle, Washington); Van de Kamp's Holland Dutch Bakers, 823 Yale Avenue, North, Seattle; Grand Central Bakery, Market and H Streets, Aberdeen; Swanson's Food, Inc., 1401 Simpson Avenue, Aberdeen; Veldkamp's Olympic Bakery, 417 W. Wishkah Street, Aberdeen; Bame's Ye Olde Home Bakery, Riverside, Mount Vernon; Bellingham Baking Company, 2001 State Street, Bellingham; City Bakery, 607 1st Street, Mount Vernon; Thrifty Foods, 130 Fairhaven Avenue, Burlington; Golden Rule Bakery, Inc., 915 Center Street, Tacoma; Jordan Baking Company, 3623 S. 54th Street, Tacoma; Eddy Bakeries Company, Inc., 232 S. Front Street, Yakima; Sigman Food Stores, P.O. Box 618, Yakima; and the following officials of Bakers of Washington, Inc.: Miss Maud Pemberton, Golden Rule Bakery, Inc., 4450 Fremont Avenue, Seattle; Henry Richards, Continental Baking Company, P.O. Box 3227, Seattle; Lloyd C. Mitchell, Van de Kamp's Holland Dutch Bakers, 823 Yale Avenue, North, Seattle; Lou Blackfield, Bake-Rite Bakery, 1414 14th Avenue, Seattle; Horace Snyder, Snyder's Bakery, Inc., 31 North 4th Street, Yakima; Al Moore, Langendorf United Bakeries, Inc., 2901 6th Avenue, South, Seattle; Roy Reynolds, Grandma Cookie Baking Co., Inc., 3402 Wallingford, Seattle; LeConie Stiles, Jr., Ruth Ashbrook Bakeries Corp., 1407 11th Avenue, Seattle; Hentry Gai, Seattle French Baking Co., Inc., 2006 Weller Street, Seattle; Donald R. Due, Best Pie Company, Inc., 132 Queen Anne Avenue, Seattle; and Maurice Vyvey, Baker Boy Bakery, 8050 Bothell Way, Seattle, as officers of Bakers of Washington, Inc.; and respondents Safeway Stores, Inc., and Holsum Baking Company, corporations; and respondents' representatives, agents and employees, directly or through any corporate or other device in or in connection with the offering for sale, sale or distribution of bread, do forthwith cease and desist from:

Entering into, carrying out, continuing or cooperating in any planned common course of action, understanding, agreement, combination or conspiracy between or among any two or more of said respondents, or members of Bakers of Washington, Inc., or between any one or more of them and others not parties hereto, where any one or more of the parties to such planned common course of action, understanding, agreement, combination or conspiracy is selling bread in interstate commerce in competition with bread sold by any one or more of the other parties thereto, to do or perform any of the following things:

(1) Establish, fix or maintain prices, terms or conditions of sale of bread.

(2) Adhere to any prices, terms or conditions of sale so fixed or maintained, or

(3) Deter or attempt to deter any competitor from exercising his individual judgment as to prices, terms or conditions of sale of bread.

It is further ordered, That the complaint herein be, and the same hereby is, dismissed as to Arthur H. LaLime, deceased.

It is further ordered, That respondents shall, within sixty (60) days after service upon them of this order, file with the Commission a report, in writing, setting forth in detail the manner and form in which they have complied with the order set forth herein.

Issued: February 28, 1964.

[SEAL] JOSEPH W. SHEA, *Secretary.*

[F.R. Doc. 64-3596; Filed, Apr. 13, 1964; 8:45 a.m.]

PART 14—ADMINISTRATIVE INTERPRETATIONS

Tire Advertising Guides

The Federal Trade Commission has amended paragraph (j) *Prices* of §14.3 *Tire advertising guides* of this part to read as follows:

§ 14.3 Tire advertising guides.

* * * * *

(j) *Deceptive pricing.* 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 paragraph (j) of § 14.3 as adopted May 20, 1958. Copies of the 1964 Guides will be furnished upon request.

The reason for the amendment is self-evident in the above Note.

(Sec. 5, 38 Stat. 719, as amended; 15 U.S.C. 45)

Approved: April 3, 1964.

By direction of the Commission.

[SEAL] JOSEPH W. SHEA, *Secretary.*

[F.R. Doc. 64-3586; Filed, Apr. 13, 1964; 8:45 a.m.]

Title 21—FOOD AND DRUGS

Chapter I—Food and Drug Administration, Department of Health, Education, and Welfare

SUBCHAPTER B—FOOD AND FOOD PRODUCTS

PART 121—FOOD ADDITIVES

Subpart D—Food Additives Permitted in Food for Human Consumption

LACTYLIC ESTERS OF FATTY ACIDS

Correction

In F.R. Doc. 64-3520, appearing at page 4997 of the issue for Friday, April 10, 1964, § 121.1048(a) should open with the words "They are prepared * * *" instead of with the words "They were prepared * * *".

SUBCHAPTER C—DRUGS

PART 146b—CERTIFICATION OF STREPTOMYCIN (OR DIHYDROSTREPTOMYCIN) AND STREPTOMYCIN- (OR DIHYDROSTREPTOMYCIN-) CONTAINING DRUGS

Streptomycin Hydrochloride Solution Oral Veterinary Etc.; Change in Expiration Date

Under the authority vested in the Secretary of Health, Education, and Wel-

fare by the Federal Food, Drug, and Cosmetic Act (sec. 507, 59 Stat. 463 as amended; 21 U.S.C. 357) and delegated to the Commissioner of Food and Drugs by the Secretary (21 CFR 2.90; 29 F.R. 471), the regulations for the certification of antibiotic and antibiotic-containing drugs (21 CFR 146b.119) are amended as follows:

Section 146b.119 is amended by changing the expiration dates in paragraphs (c)(3) and (f)(1). As amended the affected portions read as follows:

§ 146b.119 **Streptomycin hydrochloride solution oral veterinary; streptomycin sulfate solution oral veterinary.**

* * * * *

(c) * * *

(3) The statement "Expiration date ----------," the blank being filled in with the date that is 12 months after the month during which the batch was certified, except that the blank may be filled in with the date that is 18 months or 24 months after the month during which the batch was certified if the person who requests certification has submitted to the Commissioner results of tests and assays showing that after having been stored for such period of time, such drug as prepared by him complies with the standards prescribed by paragraph (a) of this section.

* * * * *

(f) * * *

(1) The labels bear an expiration date that is not more than 24 months after the month during which the batch was last assayed and released by the manufacturer.

* * * * *

Notice and public procedure are not necessary prerequisites to the promulgation of this order, and I so find, since the nature of the changes is such that they cannot be applied to any specific product unless and until the manufacturer thereof has supplied adequate data regarding that article.

Effective date. This order shall be effective on the date of its publication in the FEDERAL REGISTER.

(Sec. 507, 59 Stat. 463 as amended; 21 U.S.C. 357)

Dated: April 8, 1964.

GEO. P. LARRICK,
Commissioner of Food and Drugs.

[F.R. Doc. 64-3631; Filed, Apr. 13, 1964; 8:48 a.m.]

Title 26—INTERNAL REVENUE

Chapter I—Internal Revenue Service, Department of the Treasury

SUBCHAPTER A—INCOME TAX

[T.D. 6722]

PART 1—INCOME TAX; TAXABLE YEARS BEGINNING AFTER DECEMBER 31, 1953

Miscellaneous Amendments

On September 17, 1963, notice of proposed rule making with respect to the amendment of the Income Tax Regulations (26 CFR Part 1) under sections 37, 62, 72, 101, 104, 105, 401, 402, 403, 404, 503, and 1361 of the Internal Revenue Code of 1954 (relating to the inclusion of certain medical benefits in pension or annuity plans, to the prohibited transactions of trusts under certain plans covering owner-employees, and certain other miscellaneous matter) to conform to section 2 (a) and (b) of the Act of October 23, 1962 (Public Law 87-863, 76 Stat. 1141) and sections 6 and 7 (a)-(e) and (h) of the Self-Employed Individuals Tax Retirement Act of 1962 (76 Stat. 828, 829) was published in the FEDERAL REGISTER (28 F.R. 10161). After consideration of all such relevant matter as was presented by interested persons regarding the rules proposed, the amendment of the regulations as proposed is hereby adopted, subject to the changes set forth below. In addition, there is contained herein an amendment of the Income Tax Regulations under section 6033 of the Internal Revenue Code of 1954 which modifies the information required to be filed with the return of an exempt employees' trust.

PARAGRAPH 1. Paragraph (h) of § 1.72-15 is amended.

PAR. 2. Paragraph (b) of § 1.105-5 is amended.

PAR. 3. Paragraph (b)(1)(i) of § 1.401-1 is amended.

PAR. 4. Paragraph (b) of § 1.404-14 is amended.

PAR. 5. Paragraph (f)(2)(i) of § 1.404(a)-3 is amended.

PAR. 6. Paragraph (a)(3) of § 1.6033-1 is amended.

[SEAL] MORTIMER M. CAPLIN,
Commissioner of Internal Revenue.

Approved: April 8, 1964.

STANLEY S. SURREY,
Assistant Secretary of the Treasury.

PARAGRAPH 1. Section 1.37 is amended by revising section 37(c)(1) and by changing the historical note. These amended provisions read as follows:

§ 1.37 **Statutory provisions; retirement income.**

SEC. 37. *Retirement income.* * * *

(c) *Retirement income.* * * *

(1) In the case of an individual who has attained the age of 65 before the close of the taxable year, income from—

(A) Pensions and annuities (including, in the case of an individual who is, or has been, an employee within the meaning of section 401(c)(1), distributions by a trust described in section 401(a) which is exempt from tax under section 501(a)),

(B) Interest,

(C) Rents,

(D) Dividends, and

(E) Bonds described in section 405(b)(1) which are received under a qualified bond purchase plan described in section 405(a) or in a distribution from a trust described in section 401(a) which is exempt from tax under section 501(a), or

* * * * *

[Sec. 37 as amended by Act of Aug. 9, 1955 (Pub. Law 299, 84th Cong., 69 Stat. 591); Act of Jan. 28, 1956 (Pub. Law 398, 84th Cong., 70 Stat. 8); Act of Oct. 24, 1962 (Pub. Law 87-876, 76 Stat. 1199); sec. 7(a), Self-Employed Individuals Tax Retirement Act 1962 (76 Stat. 828)]

PAR. 2. Section 1.37-3 is amended by revising paragraph (a)(2) to read as follows:

§ 1.37-3 **Retirement income.**

(a) *Inclusions in retirement income.* * * *

(2) *Individuals 65 or over at the close of taxable year.* In the case of individuals who have attained the age of 65 before the close of the taxable year, retirement income consists of income from pensions and annuities, interest, rents, dividends, and bonds described in section 405(b)(1) which are received under a qualified bond purchase plan described in section 405(a) or in a distribution from a trust described in section 401(a) which is exempt from tax under section 501(a), to the extent that such income is includible in gross income. Pensions and annuities include (but are not limited to) amounts received as such under a public retirement system or under a retirement system established for members of the Armed Forces of the United States and distributions which are made by a trust described in section 401(a) and exempt from tax under section 501(a) and which are attributable to contributions on behalf of a self-employed individual. For the purpose of section 37(c)(1), income from rents shall be the gross amount received, not reduced by depreciation or other expenses. Retirement income does not include royalties as distinguished from rents.

PAR. 3. Section 1.62 is amended by adding a new paragraph (7) to section 62 and by adding a historical note. These added provisions read as follows:

§ 1.62 **Statutory provisions; adjusted gross income defined.**

SEC. 62. *Adjusted gross income defined.* * * *

(7) *Pension, profit-sharing, annuity, and bond purchase plans of self-employed individuals.* In the case of an individual who is an employee within the meaning of section 401(c)(1), the deductions allowed by section 404 and section 405(c) to the extent attributable to contributions made on behalf of such individual.

[Sec. 62 as amended by sec. 7(b), Self-Employed Individuals Tax Retirement Act 1962 (76 Stat. 828)]

PAR. 4. Section 1.62-1 is amended by revising paragraph (c) (8) and (9) and by adding a new subparagraph to paragraph (c). These amended and added provisions read as follows:

§ 1.62-1 **Adjusted gross income.**

* * * * *

(c) * * *

(8) Deductions allowable under part VI, section 212, and section 611 which are attributable to property held for the production of rents or royalties;

(9) Deductions for depreciation and depletion allowable under sections 167 and 611 to a life tenant of property or to an income beneficiary of property held in trust or to an heir, legatee, or devisee of an estate;

(10) Deductions allowed by sections 404 and 405(c) for contributions on behalf of a self-employed individual.

PAR. 5. There is added immediately after paragraph (g) of § 1.72-15 the following new paragraph:

§ 1.72–15 Applicability of section 72 to accident or health plans.

* * * * *

(h) *Medical benefits for retired employees, etc.* Employer contributions to provide medical benefits described in section 401(h) under a qualified pension or annuity plan are not includible in the gross income of the employee on whose behalf such contributions were made. Similarly, if the trustee of a trust forming a part of a qualified pension plan applies employer contributions which have been contributed to provide medical benefits described in section 401(h) or earnings thereon, to purchase insurance contracts which provide such benefits, the amount so applied is not includible in the gross income of the employee on whose behalf such insurance was purchased. The payment of medical benefits described in section 401(h) as defined in paragraph (a) of § 1.401–14 under a plan established by an employer shall be treated in the same manner as the payment of any other accident or health benefits under an employer-established plan. See paragraphs (b), (c), and (d) of this section.

PAR. 6. Paragraph (b)(1) of § 1.72–18 is amended by adding a new subdivision (vii) at the end thereof. The added provision reads as follows:

§ 1.72–18 Treatment of certain total distributions with respect to self-employed individuals.

* * * * *

(b) *Distributions to which this section applies.* (1) * * *

(vii) For purposes of this section, the total amounts payable to a distributee or payee, or the amounts to the credit of the employee, do not include any amounts which have been placed in a separate account for the funding of medical benefits described in section 401(h) as defined in paragraph (a) of § 1.401–14. Thus, a distribution by a qualified trust or annuity plan may constitute a distribution to which this section applies even though amounts attributable to the funding of section 401(h) medical benefits as defined in paragraph (a) of § 1.401–14 are not so distributed.

PAR. 7. Section 1.101 is amended by revising section 101(b)(2)(B), by adding a paragraph (3) to section 101(b), and by adding a historical note. These amended and added provisions read as follows:

§ 1.101 Statutory provisions; certain death benefits.

SEC. 101. Certain death benefits. * * *

(b) *Employees' death benefits.* * * *

(2) *Special rules for paragraph (1).* * * *

(B) *Nonforfeitable rights.* Paragraph (1) shall not apply to amounts with respect to which the employee possessed, immediately before his death, a nonforfeitable right to receive the amounts while living. This subparagraph shall not apply to total distributions payable (as defined in section 402(a)(3)) which are paid to a distributee within one taxable year of the distributee by reason of the employee's death—

(i) By a stock bonus, pension, or profit-sharing trust described in section 401(a) which is exempt from tax under section 501(a),

(ii) Under an annuity contract under a plan described in section 403(a), or

(iii) Under an annuity contract purchased by an employer which is an organization referred to in section 503(b)(1), (2), or (3) and which is exempt from tax under section 501(a), but only with respect to that portion of such total distributions payable which bears the same ratio to the amount of such total distributions payable which is (without regard to this subsection) includible in gross income, as the amounts contributed by the employer for such annuity contract which are excludable from gross income under section 403(b) bear to the total amounts contributed by the employer for such annuity contract.

* * * * *

(3) *Self-employed individual not considered an employee.* For purposes of this subsection, the term "employee" does not include an individual who is an employee within the meaning of section 401(c)(1) (relating to self-employed individuals).

* * * * *

[Sec. 101 as amended by sec. 23(d), Technical Amendments Act 1958 (72 Stat. 1622); sec. 7(c), Self-Employed Individuals Tax Retirement Act 1962 (76 Stat. 829)]

PAR. 8. Section 1.101–2 is amended by adding the following new paragraph:

§ 1.101–2 Employees' death benefits.

* * * * *

(f) *Distributions on behalf of a self-employed individual.* (1) Under sections 401(c)(1) and 403(a)(3), certain self-employed individuals may be covered by a pension or profit-sharing plan described in section 401(a) and exempt under section 501(a) or under an annuity plan described in section 403(a). However, a payment pursuant to the provisions of any such plan by reason of the death of an individual who participated in such a plan as a self-employed individual immediately before his retirement or death to the beneficiary or estate of such individual does not qualify for the exclusion provided by section 101(b).

(2) The application of this paragraph may be illustrated by the following examples:

Example (1). From 1950 to 1965, A was an employee of B, a sole proprietor. In 1963, B established a qualified pension plan covering A and all other persons who had been employed by B for more than 3 years. In 1965, A acquired from B a 40-percent interest in the capital and profits of the business. A continued to participate in the pension plan as a self-employed individual. In 1970, A died and his widow, in compliance with one of the provisions of the pension plan, elected to receive all of the benefits accrued to A prior to his death in a lump-sum distribution. As A participated in the plan as a self-employed individual immediately prior to his death, A's widow may not exclude any portion of such distribution from her gross income under section 101(b).

Example (2). A, an attorney, is employed by the X Company in their legal department. He is covered by the pension plan that X has established for its employees. Under the terms of A's contract of employment with X, A is permitted to carry on the private practice of law in his off-duty hours. A establishes his own pension plan with respect to his earnings from his private practice. On A's death, his widow elected to receive a lump-sum distribution with respect to any benefits accrued to A under both X's pension plan and A's own pension plan. To the extent that such payment otherwise complies with the requirements of section 101(b), up to $5,000 of the amount paid by X may be excluded from her gross income. No part of the distribution from A's own pension plan may be excluded from her gross income under section 101(b) because A participated in the plan as a self-employed individual immediately before his death.

PAR. 9. Section 1.104 is amended by revising section 104(a) to add a new sentence after paragraph (4) and by adding a historical note. These added provisions read as follows:

§ 1.104 Statutory provisions; compensation for injuries or sickness.

SEC. 104. *Compensation for injuries or sickness*—(a) *In general.* * * *

For purposes of paragraph (3), in the case of an individual who is, or has been, an employee within the meaning of section 401(c)(1) (relating to self-employed individuals), contributions made on behalf of such individual while he was such an employee to a trust described in section 401(a) which is exempt from tax under section 501(a), or under a plan described in section 403(a), shall, to the extent allowed as deductions under section 404, be treated as contributions by the employer which were not includible in the gross income of the employee.

* * * * *

[Sec. 104 as amended by sec. 7(d), Self-Employed Individuals Tax Retirement Act 1962 (76 Stat. 829)]

PAR. 10. Section 1.104–1 is amended by revising paragraph (d) to read as follows:

§ 1.104–1 Compensation for injuries or sickness.

* * * * *

(d) *Accident or health insurance.* Section 104(a)(3) excludes from gross income amounts received through accident or health insurance for personal injuries or sickness (other than amounts received by an employee, to the extent that such amounts (1) are attributable to contributions of the employer which were not includible in the gross income of the employee, or (2) are paid by the employer). Similar treatment is also accorded to amounts received under accident or health plans and amounts received from sickness or disability funds. See section 105(e) and § 1.105–5. If, therefore, an individual purchases a policy accident or health insurance out of his own funds, amounts received thereunder for personal injuries or sickness are excludable from his gross income under section 104(a)(3). See, however, section 213 and the regulations thereunder as to the inclusion in gross income of amounts attributable to deductions allowed under section 213 for any prior taxable year. Section 104(a)(3) also applies to amounts received by an employee for personal injuries or sickness from a fund which is maintained exclusively by employee contributions. Conversely, if an employer is either the sole contributor to such a fund, or is the sole purchaser of a policy of accident or health insurance for his employees (on either a group or individual basis), the exclusion provided under section 104(a)(3) does not apply to any amounts received by his employees through such fund or insurance. If the employer and his employees contribute to a fund or purchase insurance which pays accident or health benefits to employees, section

104(a)(3) does not apply to amounts received thereunder by employees to the extent that such amounts are attributable to the employer's contributions. See § 1.105–1 for rules relating to the determination of the amount attributable to employer contributions. Although amounts paid by or on behalf of an employer to an employee for personal injuries or sickness are not excludable from the employee's gross income under section 104(a)(3), they may be excludable therefrom under section 105. See §§ 1.105–1 through 1.105–5, inclusive. For treatment of accident or health benefits paid to or on behalf of a self-employed individual by a trust described in section 401(a) which is exempt under section 501(a) or under a plan described in section 403(a), see paragraph (g) of § 1.72–15.

PAR. 11. Section 1.105 is amended by adding a new subsection (g) to section 105 and by adding a historical note. These added provisions read as follows:

§ 1.105 Statutory provisions; amounts received under accident and health plans.

SEC. 105. *Amounts received under accident and health plans.* * * *

(g) *Self-employed individual not considered an employee.* For purposes of this section, the term "employee" does not include an individual who is an employee within the meaning of section 401(c)(1) (relating to self-employed individuals).

[Sec. 105 as amended by sec. 7(e), Self-Employed Individuals Tax Retirement Act 1962 (76 Stat. 829)]

PAR. 12. Section 1.105–1 is amended by revising paragraph (a) to read as follows:

§ 1.105–1 Amounts attributable to employer contributions.

(a) *In general.* Under section 105(a), amounts received by an employee through accident or health insurance for personal injuries or sickness must be included in his gross income to the extent that such amounts (1) are attributable to contributions of the employer which were not includible in the gross income of the employee, or (2) are paid by the employer, unless such amounts are excluded therefrom under section 105 (b), (c), or (d). For purposes of this section, the term "amounts received by an employee through an accident or health plan" refers to any amounts received through accident or health insurance, and also to any amounts which, under section 105(e), are treated as being so received. See § 1.105–5. In determining the extent to which amounts received for personal injuries or sickness by an employee through an accident or health plan are subject to the provisions of section 105(a), rather than section 104(a)(3), the provisions of paragraphs (b), (c), (d), and (e) of this section shall apply. A self-employed individual is not an employee for purposes of section 105 and §§ 1.105–1 through 1.105–5. See paragraph (g) of § 1.72–15. Thus, such an individual will not be treated as an employee with respect to benefits described in section 105 received from a plan in which he participates as an employee within the meaning of section 401(c)(1) at the time he, his spouse, or any of his dependents becomes entitled to receive such benefits.

PAR. 13. Section 1.105–5 is amended to read as follows:

§ 1.105–5 Accident and health plans.

(a) *In general.* Sections 104(a)(3) and 105 (b), (c), and (d) exclude from gross income certain amounts received through accident or health insurance. Section 105(e) provides that for purposes of sections 104 and 105 amounts received through an accident or health plan for employees, and amounts received from a sickness and disability fund for employees maintained under the law of a State, a Territory, or the District of Columbia, shall be treated as amounts received through accident or health insurance. In general, an accident or health plan is an arrangement for the payment of amounts to employees in the event of personal injuries or sickness. A plan may cover one or more employees, and there may be different plans for different employees or classes of employees. An accident or health plan may be either insured or noninsured, and it is not necessary that the plan be in writing or that the employee's rights to benefits under the plan be enforceable. However, if the employee's rights are not enforceable, an amount will be deemed to be received under a plan only if, on the date the employee became sick or injured, the employee was covered by a plan (or a program, policy, or custom having the effect of a plan) providing for the payment of amounts to the employee in the event of personal injuries or sickness, and notice or knowledge of such plan was reasonably available to the employee. It is immaterial who makes payment of the benefits provided by the plan. For example, payment may be made by the employer, a welfare fund, a State sickness or disability benefits fund, an association of employers or employees, or by an insurance company.

(b) *Self-employed individuals.* Under section 105(g), a self-employed individual is not treated as an employee for purposes of section 105. Therefore, for example, benefits paid under an accident or health plan as referred to in section 105(e) to or on behalf of an individual who is self-employed in the business with respect to which the plan is established will not be treated as received through accident and health insurance for purposes of sections 104(a)(3) and 105.

PAR. 14. Section 1.401 is amended by redesignating subsection (h) of section 401 as subsection (i), by inserting after subsection (g) a new subsection (h), and by amending the historical note. These amended and added provisions read as follows:

§ 1.401 Statutory provisions; qualified pension, profit-sharing, and stock bonus plans.

SEC. 401. *Qualified pension, profit-sharing, and stock bonus plans.* * * *

(h) *Medical, etc., benefits for retired employees and their spouses and dependents.* Under regulations prescribed by the Secretary or his delegate, a pension or annuity plan may provide for the payment of benefits for sickness, accident, hospitalization, and medical expenses of retired employees, their spouses and their dependents, but only if—

(1) Such benefits are subordinate to the retirement benefits provided by the plan,

(2) A separate account is established and maintained for such benefits,

(3) The employer's contributions to such separate account are reasonable and ascertainable,

(4) It is impossible, at any time prior to the satisfaction of all liabilities under the plan to provide such benefits, for any part of the corpus or income of such separate account to be (within the taxable year or thereafter) used for, or diverted to, any purpose other than the providing of such benefits, and

(5) Notwithstanding the provisions of subsection (a)(2), upon the satisfaction of all liabilities under the plan to provide such benefits, any amount remaining in such separate account must, under the terms of the plan, be returned to the employer.

(i) *Cross reference.* For exemption from tax of a trust qualified under this section, see section 501(a).

[Sec. 401 as amended by sec. 2, Self-Employed Individuals Tax Retirement Act 1962 (76 Stat. 809); sec. 2(a), Act of Oct. 23, 1962 (Pub. Law 87–863, 76 Stat. 1141)]

PAR. 15. Paragraph (b)(1)(i) of § 1.401–1 is amended to read as follows:

§ 1.401–1 Qualified pension, profit-sharing, and stock bonus plans.

* * * * *

(b) *General rules.* (1)(i) A pension plan within the meaning of section 401(a) is a plan established and maintained by an employer primarily to provide systematically for the payment of definitely determinable benefits to his employees over a period of years, usually for life, after retirement. Retirement benefits generally are measured by, and based on, such factors as years of service and compensation received by the employees. The determination of the amount of retirement benefits and the contributions to provide such benefits are not dependent upon profits. Benefits are not definitely determinable if funds arising from forfeitures on termination of service, or other reason, may be used to provide increased benefits for the remaining participants (see § 1.401–7, relating to the treatment of forfeitures under a qualified pension plan). A plan designed to provide benefits for employees or their beneficiaries to be paid upon retirement or over a period of years after retirement will, for the purposes of section 401(a), be considered a pension plan if the employer contributions under the plan can be determined actuarially on the basis of definitely determinable benefits, or, as in the case of money purchase pension plans, such contributions are fixed without being geared to profits. A pension plan may provide for the payment of a pension due to disability and may also provide for the payment of incidental death benefits through insurance or otherwise. However, a plan is not a pension plan if it provides for the payment of benefits not customarily included in a pension plan such as layoff benefits or benefits for sickness, accident, hospitalization, or medical expenses (except medical benefits described in section 401(h) as defined in paragraph (a) of § 1.401–14).

PAR. 16. Paragraph (a) (1) of § 1.401–2 is amended to read as follows:

§ 1.401–2 Impossibility of diversion under the trust instrument.

(a) *In general.* (1) Under section 401(a)(2) a trust is not qualified unless under the trust instrument it is impossible (in the taxable year and at any time thereafter before the satisfaction of all liabilities to employees or their beneficiaries covered by the trust) for any part of the trust corpus or income to be used for, or diverted to, purposes other than for the exclusive benefit of such employees or their beneficiaries. This section does not apply to funds of the trust which are allocated to provide medical benefits described in section 401(h) as defined in paragraph (a) of § 1.401–14. For the rules prohibiting diversion of such funds and the requirement of reversion to the employer after satisfaction of all liabilities under the medical benefits account, see paragraph (c) (4) and (5) of § 1.401–14.

PAR. 17. There is inserted immediately after § 1.401–13 the following new section:

§ 1.401–14 Inclusion of medical benefits for retired employees in qualified pension or annuity plans.

(a) *Introduction.* Under section 401(h) a qualified pension or annuity plan may make provision for the payment of sickness, accident, hospitalization, and medical expenses for retired employees, their spouses, and their dependents. The term "medical benefits described in section 401(h)" is used in this section to describe such payments.

(b) *In general*—(1) *Coverage.* Under section 401(h), a qualified pension or annuity plan may provide for the payment of medical benefits described in section 401(h) only for retired employees, their spouses, or their dependents. To be "retired" for purposes of eligibility to receive medical benefits described in section 401(h), an employee must be eligible to receive retirement benefits provided under the pension plan, or else be retired by an employer providing such medical benefits by reason of permanent disability. For purposes of the preceding sentence, an employee is not considered to be eligible to receive retirement benefits provided under the plan if he is still employed by the employer and a separation from employment is a condition to receiving the retirement benefits.

(2) *Discrimination.* A plan which provides medical benefits described in section 401(h) must not discriminate in favor of officers, shareholders, supervisory employees, or highly compensated employees with respect to coverage and with respect to the contributions or benefits under the plan. The determination of whether such a plan so discriminates is made with reference to the retirement portion of the plan as well as the portion providing the medical benefits described in section 401(h). Thus, for example, a plan will not be qualified under section 401 if it discriminates in favor of employees who are officers or shareholders with respect to either portion of the plan.

(3) *Funding medical benefits.* Contributions to provide the medical benefits described in section 401(h) may be made either on a contributory or noncontributory basis, without regard to whether the contributions to fund the retirement benefits are made on a similar basis. Thus, for example, the contributions to fund the medical benefits described in section 401(h) may be provided for entirely out of employer contributions even though the retirement benefits under the plan are determined on the basis of both employer and employee contributions.

(4) *Definitions.* For purposes of section 401(h) and this section:

(i) The term "dependent" shall have the same meaning as that assigned to it by section 152, and

(ii) The term "medical expense" means expenses for medical care as defined in section 213(e)(1).

(c) *Requirements.* The requirements which must be met for a qualified pension or annuity plan to provide medical benefits described in section 401(h) are set forth in subparagraphs (1) through (5) of this paragraph.

(1) *Benefits.* (i) The plan must specify the medical benefits described in section 401(h) which will be available and must contain provisions for determining the amount which will be paid. Such benefits, when added to any life insurance protection provided for under the plan, must be subordinate to the retirement benefits provided by such plan. For purposes of this section, life insurance protection includes any benefit paid under the plan on behalf of an employee-participant as a result of the employee-participant's death to the extent such payment exceeds the amount of the reserve to provide the retirement benefits for the employee-participant existing at his death. The medical benefits described in section 401(h) are considered subordinate to the retirement benefits if at all times the aggregate of contributions (made after the date on which the plan first includes such medical benefits) to provide such medical benefits and any life insurance protection does not exceed 25 percent of the aggregate contributions (made after such date) other than contributions to fund past service credits.

(ii) The meaning of the term "subordinate" may be illustrated by the following example:

Example. The X Corporation amends its qualified pension plan to provide medical benefits described in section 401(h) effective for the taxable year 1964. The total contributions under the plan (excluding those for past service credits) for the taxable year 1964 are $125,000, allocated as follows: $100,000 for retirement benefits, $10,000 for life insurance protection, and $15,000 for medical benefits described in section 401(h). The medical benefits described in section 401(h) are considered subordinate to the retirement benefits since the portion of the contributions allocated to the medical benefits described in section 401(h) ($15,000) and to life insurance protection after such medical benefits were included in the plan ($10,000), or $25,000, does not exceed 25 percent of $125,000. For the taxable year 1965, the X Corporation contributes $140,000 (exclusive of contributions for past service credits) allocated as follows: $100,000 for retirement benefits, $10,000 for life insurance protection, and $30,000 for medical benefits described in section 401(h). The medical benefits described in section 401(h) are considered subordinate to the retirement benefits since the aggregate contributions allocated to the medical benefits described in section 401(h) ($45,000) and to life insurance protection after such medical benefits were included in the plan ($20,000) or $65,000 does not exceed 25 percent of $265,000, the aggregate of the contributions made in 1964 and 1965.

(2) *Separate accounts.* Where medical benefits described in section 401(h) are provided for under a qualified pension or annuity plan, a separate account must be maintained with respect to contributions to fund such benefits. The separation required by this section is for recordkeeping purposes only. Consequently, the funds in the medical benefits account need not be separately invested. They may be invested with funds set aside for retirement purposes without identification of which investment properties are allocable to each account. However, where the investment properties are not allocated to each account, the earnings on such properties must be allocated to each account in a reasonable manner.

(3) *Reasonable and ascertainable.* Section 401(h) further requires that amounts contributed to fund medical benefits therein described must be reasonable and ascertainable. For the rules relating to the deduction of such contributions, see paragraph (f) of § 1.404(a)–3. The employer must, at the time he makes a contribution, designate that portion of such contribution allocable to the funding of medical benefits.

(4) *Impossibility of diversion prior to satisfaction of all liabilities.* Section 401(h) further requires that it must be impossible, at any time prior to the satisfaction of all liabilities under the plan to provide for the payment of medical benefits described in section 401(h), for any part of the corpus or income of the medical benefits account to be (within the taxable year or thereafter) used for, or diverted to, any purpose other than the providing of such benefits. Consequently, a plan which, for example, under its terms, permits funds in the medical benefits account to be used for any retirement benefit provided under the plan does not satisfy the requirements of section 401(h) and will not qualify under section 401(a). However, the payment of any necessary or appropriate expenses attributable to the administration of the medical benefits account does not affect the qualification of the plan.

(5) *Reversion upon satisfaction of all liabilities.* The plan must provide that any amounts which are contributed to fund medical benefits described in section 401(h) and which remain in the medical benefits account upon the satisfaction of all liabilities arising out of the operation of the medical benefits portion of the plan are to be returned to the employer.

(6) *Forfeitures.* The plan must expressly provide that in the event an in-

dividual's interest in the medical benefits account is forfeited prior to termination of the plan an amount equal to the amount of the forfeiture must be applied as soon as possible to reduce employer contributions to fund the medical benefits described in section 401(h).

(d) *Effective date.* This section applies to taxable years of a qualified pension or annuity plan beginning after October 23, 1962.

PAR. 18. Section 1.402(a)-1 is amended by adding a new subdivision (vi) at the end of paragraph (a)(1) and by adding a new subdivision (viii) at the end of paragraph (a)(6). These added provisions read as follows:

§ 1.402(a)-1 Taxability of beneficiary under a trust which meets the requirements of section 401(a).

(a) *In general.* (1) * * *

(vi) For the treatment of amounts paid to provide medical benefits described in section 401(h) as defined in paragraph (a) of § 1.401-14, see paragraph (h) of § 1.72-15.

* * * * *

(6) * * *

(viii) The term "total distributions payable" does not include any amount which has been placed in a separate account for the funding of medical benefits described in section 401(h) as defined in paragraph (a) of § 1.401-14. Thus, a distribution by a qualified trust may constitute a total distributions payable with respect to an employee even though the trust retains amounts attributable to the funding of medical benefits described in section 401(h).

PAR. 19. Section 1.403(a)-1 is amended by adding a new paragraph (g) at the end thereof. The added provision reads as follows:

§ 1.403(a)-1 Taxability of beneficiary under a qualified annuity plan.

* * * * *

(g) For the treatment of amounts paid to provide medical benefits described in section 401(h) as defined in § 1.401-14, see paragraph (h) of § 1.72-15.

PAR. 20. Section 1.403(a)-2 is amended by adding the following new subparagraph (6) to paragraph (b):

§ 1.403(a)-2 Capital gains treatment for certain distributions.

* * * * *

(b) * * *

(6) The term "total amounts" does not include any amount which has been placed in a separate account for the funding of benefits described in section 401(h). Thus, a distribution under a qualified annuity plan may constitute a distribution of the total amounts payable with respect to an employee even though amounts attributable to the funding of section 401(h) medical benefits as defined in paragraph (a) of § 1.401-14 are not so distributed.

PAR. 21. Section 1.404(a) is amended by revising section 404(a)(2) and by amending the historical note. These amended provisions read as follows:

§ 1.404(a) Statutory provisions; deduction for contributions of an employer to an employees' trust or annuity plan and compensation under a deferred-payment plan; general rule.

SEC. 404. *Deduction for contributions of an employer to an employees' trust or annuity plan and compensation under a deferred-payment plan*—(a) *General rule.* * * *

(2) *Employees' annuities.* In the taxable year when paid, in an amount determined in accordance with paragraph (1), if the contributions are paid toward the purchase of retirement annuities, or retirement annuities and medical benefits as described in section 401(h), and such purchase is a part of a plan which meets the requirements of section 401(a) (3), (4), (5), (6), (7), and (8), and, if applicable, the requirements of section 401(a) (9) and (10) and of section 401(d) (other than paragraph (1)), and if refunds of premiums, if any, are applied within the current taxable year or next succeeding taxable year towards the purchase of such retirement annuities, or such retirement annuities and medical benefits.

* * * * *

[Sec. 404(a) as amended by sec. 3, Self-Employed Individuals Tax Retirement Act 1962 (76 Stat. 819; sec. 2(b), Act of Oct. 23, 1962 (Pub. Law 87-863, 76 Stat. 1141)]

PAR. 22. Section 1.404(a)-3 is amended by revising paragraph (a) and by inserting after paragraph (e) a new paragraph (f). These amended and added provisions read as follows:

§ 1.404(a)-3 Contributions of an employer to or under an employees' pension trust or annuity plan that meets the requirements of section 401(a); application of section 404 (a)(1).

(a) If contributions are paid by an employer to or under a pension trust or annuity plan for employees and the general conditions and limitations applicable to deductions for such contributions are satisfied (see § 1.404(a)-1), the contributions are deductible under section 404 (a) (1) or (2) if the further conditions provided therein are also satisfied. As used in this section, a "pension trust" means a trust forming part of a pension plan and an "annuity plan" means a pension plan under which retirement benefits are provided under annuity or insurance contracts without a trust. This section is also applicable to contributions to a foreign situs pension trust which could qualify for exemption under section 501(a) except that it is not created or organized and maintained in the United States. For the meaning of "pension plan" as used in this section, see paragraph (b) (1) (i) of § 1.401-1. Where disability pensions, insurance, or survivorship benefits incidental and directly related to the retirement benefits under a pension or annuity plan are provided for the employees or their beneficiaries by contributions under the plan, deductions on account of such incidental benefits are also covered under section 404 (a) (1) or (2). See paragraph (b) (2) of § 1.72-16 as to taxability to employees of cost of incidental life insurance protection. Similarly, where medical benefits described in section 401(h) as defined in paragraph (a) of § 1.401-14 are provided for retired employees, their spouses, or their dependents under the plan, deductions on account of such subordinate benefits are also covered under section 404(a) (1) or (2). In order to be deductible under section 404(a)(1), contributions to a pension trust must be paid in a taxable year of the employer which ends with or within a year of the trust for which it is exempt under section 501(a). Contributions paid in such a taxable year of the employer may be carried over and deducted in a succeeding taxable year of the employer in accordance with section 404(a)(1)(D), whether or not such succeeding taxable year ends with or within a taxable year of the trust for which it is exempt under section 501(a). See § 1.404(a)-7 for rules relating to the limitation on the amount deductible in such a succeeding taxable year of the employer. See § 1.404(a)-8 as to conditions for deductions under section 404(a)(2) in the case of an annuity plan. In either case, the deductions are also subject to further limitations provided in section 404(a)(1). The limitations provided in section 404(a)(1) are, with an exception provided for certain years under subparagraph (A) thereof (see § 1.404(a)-4), based on the actuarial costs of the plan.

* * * * *

(f)(1) Amounts contributed by an employer under the plan for the funding of medical benefits described in section 401(h) as defined in paragraph (a) of § 1.401-14 must satisfy the general requirements which are applicable to deductions allowable under section 404 and which are set forth in § 1.404(a)-1 including, for example, the requirements described in paragraph (b) of such section. Accordingly, such amounts must constitute an ordinary and necessary expense relating to either the trade or business or the production of income and must not, when added to all other compensation paid by the employer to the employee on whose behalf such a contribution is made, constitute more than reasonable compensation. However, in determining the amount which is deductible with respect to contributions to provide retirement benefits under the plan, amounts contributed for the funding of medical benefits described in section 401(h) shall not be taken into consideration.

(2) The amounts deductible with respect to employer contributions to fund medical benefits described in section 401(h) shall not exceed the total cost of providing such benefits. The total cost of providing such benefits shall be determined in accordance with any generally accepted actuarial method which is reasonable in view of the provisions and coverage of the plan, the funding medium, and other applicable considerations. The amount deductible for any taxable year with respect to such cost shall not exceed the greater of—

(i) An amount determined by distributing the remaining unfunded costs of past and current service credits as a level amount, or as a level percentage of compensation, over the remaining future service of each employee, or

(ii) 10 percent of the cost which would be required to completely fund or purchase such medical benefits.

In determining the amount deductible, an employer must apply either subdivision (i) of this subparagraph for all employees or subdivision (ii) of this subparagraph for all employees. If contributions paid by an employer in a taxable year to fund such medical benefits under a pension or annuity plan exceed the limitations of this subparagraph but otherwise satisfy the conditions for deduction under section 404, then the excess contributions are carried over and are deductible in succeeding taxable years of the employer which end with or within taxable years of the trust for which it is exempt under section 501(a) in order of time to the extent of the difference between the amount paid and deductible in each succeeding year and the limitation applicable to such year under this subparagraph. For purposes of subdivision (i) of this subparagraph, if the remaining future service of an employee is one year or less, it shall be treated as one year.

PAR. 23. Section 1.404(a)–8 is amended by revising paragraph (a)(1), by revising that portion of paragraph (a)(3) which precedes subdivision (i), and by adding a new sentence to paragraph (a)(3) after subdivision (ii)(b). These amended and added provisions read as follows:

§ 1.404(a)–8 Contributions of an employer under an employees' annuity plan which meets the requirements of section 401(a); application of section 404(a)(2).

(a) * * *

(1) The contributions must be paid toward the purchase of retirement annuities (or for disability, severance, insurance, survivorship benefits incidental and directly related to such annuities, or medical benefits described in section 401(h) as defined in paragraph (a) of § 1.401–14) under an annuity plan for the exclusive benefit of the employer's employees or their beneficiaries. See paragraph (a) of § 1.401–1.

* * * * *

(3) There must be a definite written arrangement between the employer and the insurer that refunds of premiums, if any, shall be applied within the taxable year of the employer in which received or within the next succeeding taxable year toward the purchase of retirement annuities (or for disability, severance, insurance, survivorship benefits incidental and directly related to such annuities, or medical benefits described in section 401(h) as defined in paragraph (a) of § 1.401–14) under the plan. For the purpose of this condition, "refunds of premiums" means payments by the insurer on account of credits such as dividends, experience rating credits, or surrender or cancellation credits. The arrangement may be in the form of contract provisions or written directions of the employer or partly in one form and partly in another. This condition will be considered satisfied where—

* * * * *

If the plan also includes medical benefits described in section 401(h) as defined in paragraph (a) of § 1.401–14, any refund of premium attributable to such benefits must, in accordance with these rules, be applied toward the purchase of medical benefits described in section 401(h) as defined in paragraph (a) of § 1.401–14.

PAR. 24. Paragraphs (a) and (b) of § 1.503(a)–1 are amended to read as follows:

§ 1.503(a)–1 Denial of exemption to organizations engaged in prohibited transactions.

(a) The prohibited transactions enumerated in section 503 are in addition to and not in limitation of the restrictions contained in section 501(c)(3) and section 401(a). Even though an organization has not engaged in any of the prohibited transactions referred to in section 503, it still may not qualify for tax exemption in view of the general provisions of section 501(c)(3) and section 401(a). Thus, if a trustee or other fiduciary of the organization (whether or not he is also a creator of such organization) enters into a transaction with the organization, such transaction will be closely scrutinized in the light of the fiduciary principle requiring undivided loyalty to ascertain whether the organization is in fact being operated for the stated exempt purposes.

(b) An organization described in section 501(c)(3) which after July 1, 1950, has engaged in any prohibited transaction as defined in section 503(c), unless it is excepted by the provisions of section 503(b), and an organization described in section 401(a) which after March 1, 1954, has engaged in any prohibited transaction defined in section 503 shall not be exempt from taxation under section 501(a) for any taxable year subsequent to the taxable year in which there is mailed to it a notice in writing by the Commissioner that it has engaged in such prohibited transaction. Such notification by the Commissioner shall be by registered or certified mail to the last known address of the organization. However, notwithstanding the requirement of notification by the Commissioner, exemption shall be denied with respect to any taxable year if such organization during or prior to such taxable year commenced the prohibited transaction with the purpose of diverting income or corpus from its exempt purposes and such transaction involved a substantial part of the income or corpus of such organization. For the purpose of this section, the term "taxable year" means the established annual accounting period of the organization; or, if the organization has no such established annual accounting period, the "taxable year" of the organization means the calendar year.

PAR. 25. Paragraph (a) of § 1.503(c)–1 is amended to read as follows:

§ 1.503(c)–1 Prohibited transactions.

(a) *In general.* For purposes of this section, the term "prohibited transaction" includes any transaction described as such in section 503(c) engaged in by an organization described in section 501(c)(3) or section 401(a), other than those organizations excepted by section 503(b). Whether a transaction is a prohibited transaction depends on the facts and circumstances of the particular case. This section denies tax-exempt status to those organizations described in sections 501(c)(3) and 401(a) which engage in certain transactions which inure to the private advantage of (1) the creator of such organization (if it is a trust); (2) any substantial contributor to the organization; (3) a member of the family (as defined in section 267(c)(4)) of an individual who is such creator of or such substantial contributor to such organization; or (4) a corporation controlled, as set forth in section 503(c), by such creator or substantial contributor.

PAR. 26. Section 1.503(g)–1 is amended to read as follows:

§ 1.503(g)–1 Cross references.

For provisions relating to loans described in section 503(c)(1) by a trust described in section 401(a), see § 1.503(c)–1 and section 503 (h) and (i) and the regulations thereunder.

PAR. 27. The following new sections are added immediately after § 1.503(i)–1:

§ 1.503(j) Statutory provisions; requirements for exemption; trusts benefiting certain owner-employees.

SEC. 503. *Requirements for exemption.*

* * *

(j) *Trusts benefiting certain owner-employees*—(1) *Prohibited transactions.* In the case of a trust described in section 401(a) which is part of a plan providing contributions or benefits for employees some or all of whom are owner-employees (as defined in section 401(c)(3)) who control (within the meaning of section 401(d)(9)(B)) the trade or business with respect to which the plan is established, the term "prohibited transaction" also means any transaction in which such trust, directly or indirectly—

(A) Lends any part of the corpus or income of the trust to;

(B) Pays any compensation for personal services rendered to the trust to;

(C) Makes any part of its services available on a preferential basis to; or

(D) Acquires for the trust any property from, or sells any property to;

any person described in subsection (c) or to any such owner-employee, a member of the family (as defined in section 267(c)(4)) of any such owner-employee, or a corporation controlled by any such owner-employee through the ownership, directly or indirectly, of 50 percent or more of the total combined voting power of all classes of stock entitled to vote or 50 percent or more of the total value of shares of all classes of stock of the corporation.

(2) *Special rule for loans.* For purposes of the application of paragraph (1)(A), the following rules shall apply with respect to a loan made before the date of the enactment of this subsection which would be a prohibited transaction if made in a taxable year beginning after December 31, 1962:

(A) If any part of the loan is repayable prior to December 31, 1965, the renewal of such part of the loan for a period not extending beyond December 31, 1965, on the same terms, shall not be considered a prohibited transaction.

(B) If the loan is repayable on demand, the continuation of the loan beyond December 31, 1965, shall be considered a prohibited transaction.

[Sec. 503(j) as added by sec. 6, Self-Employed Individuals Tax Retirement Act 1962 (76 Stat. 827)]

§ 1.503(j)–1 Trusts benefiting certain owner-employees.

(a) *In general.* Section 503(j) defines the term "prohibited transaction" to include certain transactions in addition to the transactions enumerated in section 503(c) in the case of an employees' trust described in section 401(a) and exempt from tax under section 501(a) forming part of a plan that covers (within the meaning of paragraph (a)(2) of § 1.401–10) one or more owner-employees who control the trade or business with respect to which the plan has been established. In the case of such a trust, the term "prohibited transaction" includes any transaction in which the trust, directly or indirectly—

(1) Lends any part of the corpus or income of the trust to;

(2) Pays any compensation for personal services rendered to the trust to;

(3) Makes any part of its services available on a preferential basis to;

(4) Acquires for the trust any property from, or sells any property to;

any person described in section 503(c) or to any such owner-employee, a member of the family (as defined in section 267(c)(4)) of any such owner-employee, or a corporation controlled by such owner-employee through the ownership, directly or indirectly, of 50 percent or more of the total combined voting power of all classes of stock entitled to vote or 50 percent or more of the total value of shares of all classes of stock of the corporation. Mere participation by such a trust in such a transaction constitutes a "prohibited transaction" without regard to the reasonableness of the rate of either interest or compensation (as the case may be), the adequacy of the security involved, or the accuracy of the values the parties may have placed upon property which has been transferred to or from the trust.

(b) *Transfer of property to trust.* The term "prohibited transaction" as defined in section 503(j)(1)(D) includes any transaction in which a trust to which this section applies acquires property from, or sells property to, a person described in section 503(j). These persons include an owner-employee covered under the plan, of which the trust forms a part, and the person treated as the employer of such an owner-employee. For purposes of this section, a trust is considered to have "acquired" property when it is included in a contribution to the trust. Thus, in the case of a trust to which section 503(j) applies, the employer may not make a contribution of property to provide benefits for any employee, irrespective of whether such employee is a person described in section 503(j). Similarly, the owner-employee himself shall not contribute property to such a trust as an employee contribution permitted under the plan. For purposes of this section the term "property" does not include money. See also section 503(c) for transfers of property that constitute prohibited transactions.

(c) *Loans.* A loan made to a person described in section 503(j) by a trust after October 9, 1962, but prior to the date on which the plan, of which the trust forms a part, first covers an owner-employee who controls, or owner-employees who together control, the trade or business with respect to which the plan is established is a prohibited transaction within the meaning of section 503(j) unless the loan is repaid prior to such date. For loans made before October 10, 1962, see section 503(j)(2).

(d) *Definitions.* For purposes of section 503(j) and this section:

(1) The term "owner-employee" has the same meaning as that assigned to it by section 401(c)(3) and paragraph (d) of § 1.401–10;

(2) The term "control" has the same meaning as that assigned to it by section 401(d)(9)(B) and paragraph (e)(3) of § 1.401–12.

(e) *Examples.* The following examples illustrate the application of section 503(j)(1):

Example (1). A, B, C, and D each owns a 25-percent interest in both the capital and profits of the ABCD Partnership engaged in a business with respect to which capital is not a material income-producing factor. The partnership has three full-time employees, E, F, and G. In 1963, the partnership established a qualified pension plan which covered all partners and full-time employees. In 1970, the trust, which was part of such plan, loaned partner A $100,000 for which A gave his secured promissory note at the rate of 6 percent interest, the rate charged by financial institutions in the community where the transaction took place. The loan by the trust to A is a prohibited transaction since section 503(j)(1)(A) prohibits any loan to A, regardless of the rate of interest or the adequacy of the security.

Example (2). Assume the same facts as those given in example (1), with the exception of the loan to A. A's brother L, who is a specialist on the subject of employee benefit programs, was employed by the trust to render advice in connection with the administration of the trust. L was reasonably compensated by the trust for this work. However, since L is a member of A's family (as defined in section 267(c)(4)), the payment of this compensation to him for services rendered the pension trust constitutes a prohibited transaction within the meaning of section 503(j)(1)(B).

Example (3). Assume the same facts as those given in example (1), with the exception of the loan to A. The plan provided that each covered person could make voluntary employee contributions not to exceed five percent of his compensation. A contributed securities having a fair market value of $2,500. A's contribution of securities constitutes a transaction in which the trust acquired property from a person described in section 503(j) and, therefore, was a prohibited transaction within the meaning of section 503(j)(1)(D).

Example (4). The ABC Partnership is composed of 10 partners. A, B, and C each owns a 15-percent interest in the profits and capital of the partnership. The remaining 55 percent is divided equally among the other partners. The partnership established a qualified pension plan under which all partners participate. The trust which was part of such plan, loaned partner A $100,000 for which A gave his secured promissory note at the rate of 3 percent interest. Since there is no owner-employee, or combination of owner-employees, who control the business with respect to which the plan was established and who are covered under the plan, section 503(j) is not applicable to this situation. However, the loan may be a prohibited transaction within the meaning of section 503(c)(1).

PAR. 28. Section 1.1361 is amended by revising section 1361(d) and by adding a historical note. These amended and added provisions read as follows:

§ 1.1361 Statutory provisions; unincorporated business enterprises electing to be taxed as domestic corporations.

SEC. 1361. *Unincorporated business enterprises electing to be taxed as domestic corporations.* * * *

(d) *Limitation.* A partner or proprietor of an unincorporated business enterprise as to which an election has been made under subsection (a) shall not be considered an employee for purposes of section 401(a) (relating to employees' pension trust, etc.) other than an employee within the meaning of section 401(c)(1) (relating to self-employed individuals), or for purposes of section 405 (relating to qualified bond purchase plans) other than an employee described in section 405(f).

* * * * *

[Sec. 1361 as amended by sec. 7(h), Self-Employed Individuals Tax Retirement Act 1962 (76 Stat. 829)]

PAR. 29. Section 1.1361–4 is amended to read as follows:

§ 1.1361–4 Pension or profit-sharing plan.

A proprietor or partner of a section 1361 corporation shall not be considered a common-law employee for purposes of section 401(a) (relating to employees' pension trusts, etc.), section 403(a) (relating to employees' annuity plans, etc.), or section 405 (relating to qualified bond purchase plans). Accordingly, such a proprietor or partner may not participate as a common-law employee in any pension or profit-sharing plan described in section 401(a), an annuity plan described in section 403(a), or a qualified bond purchase plan described in section 405 which the section 1361 corporation may have for its employees. However, such a proprietor or partner may participate in any such plan as a self-employed individual in accordance with those provisions of sections 401 through 405 which are applicable to self-employed individuals. A contribution to any such plan by a section 1361 corporation on behalf of a self-employed individual is deductible in computing the taxable income of such corporation. However, the amount of such deduction shall be determined in accordance with the provisions of section 404(a)(8), (9), (10), and (e). No deduction with respect to such contribution is allowable to the self-employed individual on whose behalf such contribution is made. For purposes of applying the provisions of sections 401–405 which are applicable to self-employed individuals, the proprietor or partner of a section 1361 corporation shall not be treated as a shareholder of such corporation.

PAR. 30. Paragraph (a)(3) of § 1.6033–1 is amended to read as follows:

§ 1.6033–1 Returns by exempt organizations.

(a) *In general.* * * *

(3) Every employees' trust described in section 401(a) which is exempt from taxation under section 501(a) shall file an annual return on Form 990–P. The return shall include the information required by paragraph (b)(5)(ii) of § 1.401–1. In addition, the trust must

file the information required to be filed by the employer pursuant to the provisions of § 1.404(a)–2, unless the employer has notified the trustee in writing that he has or will timely file such information. If the trustee has received such notification from the employer, then such notification, or a copy thereof, shall be retained by the trust as a part of its records.

* * * * *

Because the amendment in paragraph 30 to the regulations under section 6033 of the Internal Revenue Code of 1954 eliminates the requirement that certain documents be filed with the annual return of exempt employees' trusts, it is found that it is unnecessary to issue that portion of this Treasury decision with notice and public procedure thereon under section 4(a) of the Administrative Procedure Act, approved June 11, 1946, or subject to the effective date limitation of section 4(c) of said Act.

(Sec. 7805 of the Internal Revenue Code of 1954 (68A Stat. 917; 26 U.S.C. 7805))

[F.R. Doc. 64–3657; Filed, Apr. 13, 1964; 8:49 a.m.]

Title 32—NATIONAL DEFENSE

Chapter VII—Department of the Air Force

PART 861—OFFICERS' RESERVE USAF OFFICER TRAINING SCHOOL (OTS)

PART 875—APPOINTMENT TO THE UNITED STATES AIR FORCE ACADEMY

PART 878—DECORATIONS AND AWARDS

Miscellaneous Amendments; Correction

1. In F.R. Doc. 65–3253 appearing in the issue for Friday, April 3, 1964, at page 4774, § 861.6(c) is corrected in its entirety, to read as follows:

§ 861.6 Eligibility requirements.

* * * * *

(c) *Educational qualifications.* (1) Applicants must be college graduates with a baccalaureate or higher degree from a college or university listed in the latest issue of Part 3, "Higher Education," Education Directory, published by the Department of Health, Education, and Welfare.

(2) An applicant who is a graduate of an unlisted or foreign college or university, if otherwise qualified, may meet the educational requirements by submitting evidence that the college's credits have been and are accepted as if coming from an accredited institution by not fewer than three U.S. accredited institutions.

(3) Students enrolled in the senior year of college may submit applications 210 days before scheduled graduation date. These persons will be processed as college graduates. Applicants will not be enlisted until documentary evidence has been submitted showing they have been awarded their degrees. This document will be returned to the individual concerned and will not be part of his enlistment file.

* * * * *

§ 875.5 [Corrected]

2. In § 875.5(d)(1), line 2, "as affidavit" is corrected to read "an affidavit."

3. In § 878.44, paragraph (q) is corrected to read as follows:

§ 878.44 List of authorized service medals and ribbons.

* * * * *

(q) Small Arms Expert Marksmanship Ribbon.

* * * * *

By order of the Secretary of the Air Force.

WILLIAM L. KOCH,
Lt. Colonel, U.S. Air Force, Chief, Special Activities Group, Office of The Judge Advocate General.

[F.R. Doc. 64–3607; Filed, Apr. 13, 1964; 8:46 a.m.]

Title 32A—NATIONAL DEFENSE, APPENDIX

Chapter I—Office of Emergency Planning

DMO I–17—FURTHER ASSIGNMENT OF DEFENSE MOBILIZATION AUTHORITY TO THE GENERAL SERVICES ADMINISTRATION

DMO V–4—DELEGATION OF AUTHORITY TO THE ADMINISTRATOR, GENERAL SERVICES ADMINISTRATION

DMO V–7—GENERAL POLICIES FOR STRATEGIC AND CRITICAL MATERIALS STOCKPILING

DMO 8600.1—GENERAL POLICES FOR STRATEGIC AND CRITICAL MATERIALS STOCKPILING

1. *Purpose.* This order sets forth policies for the administration of strategic and critical materials stockpiling.

2. *Cancellation.* This order supersedes Defense Mobilization Order V–4 (19 F.R. 7458, November 19, 1954), Defense Mobilization Order I–17 (20 F.R. 3437, May 17, 1955), Defense Mobilization Order V–7 (24 F.R. 10308, Dec. 19, 1959) and Amendment 1 thereof (27 F.R. 4169, May 2, 1962).

3. *Policies.* By virtue of the authority vested in me by Executive Order 11051, the following policies are promulgated to govern the administration of strategic and critical materials stockpiling:

a. *General.* The strategic stockpile shall be so administered as to assure the availability of strategic and critical materials in a war emergency.

b. *Period covered by stockpiling.* All strategic stockpile objectives for conventional war shall be limited to meeting estimated shortages of materials for a three-year emergency period. Strategic stockpile objectives for nuclear war involving attack on the United States, shall be designed to meet estimated shortages of materials during (a) actual hostilities and (b) the reconstruction of the national economy to a point where it is adequate for national defense.

c. *Stockpile objectives.* Strategic stockpile objectives shall be adequate for limited or general, conventional or nuclear war, whichever shows the largest supply-requirements deficit to be met by stockpiling.

d. *Emergency requirements.* The requirements estimates for limited or general, conventional or nuclear war shall, where appropriate, reflect specific requirements to the extent available. It shall be assumed that the total requirements will approximate the capacity of industry to consume, taking into account necessary wartime limitation, conservation and substitution measures. Requirements shall be discounted for wartime losses of consuming capacity to the extent that such losses can be reliably estimated. Departments and agencies having responsibilities with regard to requirements data on stockpile materials shall review such data and provide the Director of the Office of Emergency Planning annually with information as to all significant changes.

e. *Emergency supplies.* Estimates of supply for the mobilization period shall be based on readily available capacity and known resources. No reliance shall be placed on foreign sources of supply beyond North America and comparably accessible sources during an emergency. The share of an accessible foreign source of supply available to the United States shall be discounted to reflect the risks involved internally in the supply country and the risks of concentration of the sources. Domestic supplies shall be discounted to reflect vulnerability to total or partial destruction by overt to covert action. In cases of excessive concentration particularly, provision shall be made for supplies during the estimated time required to restore capacity and operations. Departments and agencies having the responsibilities with regard to supply data on stockpile materials shall review such data and provide the Director of the Office of Emergency Planning annually with information as to all significant changes.

f. *Provision for special-property materials.* Arrangements shall be made for the regular availability of objective scientific advice to assist in the evaluation of prospective needs for high-temperature and other special-property materials. Such materials shall be stockpiled if reasonably firm minimum requirements indicate the existence of a supply deficit in the event of an emergency.

g. *Supply-requirements reviews.* The supply-requirements balance for any material that is now or may become important to defense shall be kept under continuing surveillance. Supply-requirements data submitted pursuant to paragraphs d. and e. above shall be ex-

amined upon receipt. A full-scale review may be undertaken at any time that a change is believed to be taking place that would have a significant bearing on the wartime readiness position. Priority of review shall be given to materials under procurement.

h. *Procurement policy.* Unfilled objectives shall be attained expeditiously by cash procurement, barter, surplus transfers or otherwise as the Director shall deem appropriate. Long term contracts shall contain termination clauses whenever possible. Although various measures that are feasible shall be considered for meeting a materials deficit in an emergency, measures other than stockpiling shall be undertaken only after it is clear that stockpiling is not the best solution.

i. *Maintenance of the mobilization base.* A portion of the mobilization base comprises existing or projected productive capacity the output of which will be relied on to fill defense requirements. All inventories of Government-owned materials held for long-term storage are a part of the mobilization base and should be weighed in determining the need for a relevant portion of the productive segment of the mobilization base. The maintenance of any portion of the productive segment of the mobilization base through stockpile procurement shall be undertaken only within unfilled stockpile objectives.

j. *Upgrading to ready usability.* In order to satisfy the initial surge of abnormal demands following intensive mobilization either in a general or limited, conventional or nuclear war, subobjectives of stockpile materials shall be established for upgraded forms of such materials for immediate use in such circumstances. For this purpose a minimum readiness inventory shall be provided near centers of consumption. To the greatest extent practicable the amounts of such inventories should be based on the largest of the calculated mobilization requirements for any of the foregoing types of war during the first six months of the first year of mobilization. Materials in Government inventories may be upgraded for such stockpiling purposes only when the net cost of such processing including transportation and handling is less than the cost of new material. Materials should be upgraded to forms which will permit the greatest use-flexibility. Surplus materials may be used to pay for the upgrading of the same or other materials required to meet objectives providing that the use of excess materials for this purpose is in conformance with disposal criteria.

k. *Beneficiation of subspecification materials.* Subspecification-grade materials in Government inventories may be beneficiated within the limits of the objectives when this can be accomplished at less cost than buying new material.

l. *Cancellation of commitments.* Commitments for deliveries to national stockpile and Defense Production Act inventories beyond the objectives shall be cancelled or reduced when settlements can be arranged which would be mutually satisfactory to the supplier and the Government and which would not be disruptive to the economy or to projects essential to the national security. Such settlements may take into account anticipated profits and cover adjustments for above-market premiums. The settlement of commitments may be made through the payment of cash or through the use of surplus materials. Responsibility with respect to the settlement of commitments in the light of over-all interests of the Government rests with the Administrator of General Services who shall keep other agencies advised and consult with them to the extent appropriate.

m. *Retention of other inventories.* Within the limits of unfilled stockpile objectives, stockpile-grade materials in the Defense Production Act and the Supplemental Stockpile inventories shall be retained for national stockpile purposes.

n. *Disposals.* The Director of the Office of Emergency Planning will authorize the disposal of excess materials whenever possible under the following conditions: (a) avoidance of serious disruption of the usual markets of producers, processors and consumers, (b) avoidance of adverse effects on the international interests of the United States, (c) due regard to the protection of the United States against avoidable loss, (d) avoidance of adverse effects upon domestic employment and labor disputes, and (e) except when materials are channeled to other agencies for their direct use, consultation with the Departments of the Interior, Commerce, State, Agriculture, Defense, Labor, and other governmental agencies concerned, and consultation as appropriate with the industries concerned. If within 30 days after such consultation either the Department of State or the Department of the Interior indicates an objection to the proposed plan which, after discussion, the Director does not support, he shall so notify the President and present the issue to him for decision. To the extent possible disposals should be made in accordance with long-run disposal plans which have been worked out in consultation with the interested departments and which take into account probable trends in supply and price both at home and abroad.

In making such disposals preference shall be given to materials in the Defense Production Act inventories.

Disposals of materials that deteriorate, that are likely to become obsolete, that do not meet quality standards, or that do not have stockpile objectives, are to be expedited.

The Administrator of General Services shall be responsible for conducting negotiations for the sale of materials and will consult with and advise the agencies concerned.

o. *Public notice on disposals.* Generally the sale of excess materials acquired under the Defense Production Act will be made only after appropriate public announcement of the quantity or quantities to be offered in a specified period of time.

p. *Direct Government use.* Government agencies which directly use strategic and critical materials shall fulfill their requirements through the use of materials in Government inventories that are excess to the needs thereof whenever such action is found to be consistent with over-all disposal policies and with the best interests of the Government. Except where appropriate in the judgment of the Administrator of General Services, the requirements of subsection n, above, with respect to approval by Government departments or agencies and consultation with industries, shall not be applicable to transfers of strategic and critical materials for direct Government use.

4. *Delegation of authority*—a. *Preparation of reports.* The Administrator of General Services shall prepare on behalf of the Director of the Office of Emergency Planning and forward to him for transmittal to the Congress the reports required by section 304 of the Defense Production Act of 1950, as amended, and section 4 of the Strategic and Critical Materials Stock Piling Act.

b. *Supplemental Stockpile.* The Administrator of General Services shall on behalf of the Director of the Office of Emergency Planning and in accordance with programs certified by him, purchase or contract for the purchase of materials for the Supplemental Stockpile under Title I of the Agricultural Trade Development and Assistance Act of 1954, as amended.

5. *Effective date.* This order shall take effect on the date hereof.

Dated: March 30, 1964.

EDWARD A. MCDERMOTT,
Director,
Office of Emergency Planning.

[F.R. Doc. 64-3608; Filed, Apr. 13, 1964; 8:46 a.m.]

Title 43—PUBLIC LANDS: INTERIOR

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

APPENDIX—PUBLIC LAND ORDERS

[Public Land Order 3374]

[Los Angeles 0165220]

CALIFORNIA

Correcting Public Land Order No. 3338 of February 24, 1964

F.R. Doc. No. 64-1919, appearing as Public Land Order No. 3338, in the issue of February 28, 1964, at pages 2787-8, is hereby corrected in the following particulars:

a. In T. 6 N., R. 20 W., San Bernardino Meridian, sec. 31, "S½NE½" is corrected to read "S½NE¼".

b. In T. 8 N., R. 20 W., San Bernardino Meridian, the description "SW¼SW¼" in the first line of the land description should be referenced to Sec. 4 of the township (an error in publication).

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

APRIL 8, 1964.

[F.R. Doc. 64-3609; Filed, Apr. 13, 1964; 8:46 a.m.]

[Public Land Order 3375]

[Arizona 033334]

ARIZONA

Partly Revoking Certain Stock Driveway Withdrawals

By virtue of the authority contained in section 10 of the Act of December 29, 1916 (39 Stat. 865; 43 U.S.C. 300) as amended, it is ordered as follows:

1. The departmental orders of March 18, 1918, and February 4, 1919, creating Stock Driveway Withdrawals No. 10, Arizona No. 1, and No. 56, Arizona No. 2, respectively, are hereby revoked so far as they affect the following-described lands:

GILA AND SALT RIVER MERIDIAN

(a) Order of March 18, 1918: (Stock Driveway No. 10, Arizona No. 1).
T. 11 N., R. 26 E.,
Secs. 24 and 25.
(b) Order of February 4, 1919: (Stock Driveway No. 56, Arizona No. 2).
T. 13 N., R. 2 E.,
Secs. 6, 7, 18, 19, 30, and 31;
Sec. 32, SW¼.
T. 14 N., R. 2 E.,
Sec. 30, NE¼, NW¼, N½SW¼, and SW¼SW¼.
Sec. 31, E½, E½NW¼, SW¼NW¼, and SW¼.
The areas described aggregate approximately 6,235 acres.

2. The lands in subparagraph (a), are located approximately 18 miles south and west of Saint Johns; vegetation is of the mountain brush types. Those in (b) are approximately 20 miles east of Prescott; vegetation ranges from desert shrub to mountain brush types.

3. Until 10:00 a.m. on October 7, 1964, the State of Arizona shall have a preferred right of application to select the public lands as provided by subsection (c) of section 2, of the Act of August 27, 1958 (72 Stat. 928; 43 U.S.C. 851, 852). On and after that date and hour the lands shall become subject to application, petition, and selection, 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 at or prior to 10:00 a.m. on October 7, 1964, shall be considered as simultaneously filed at that time. Rights under such applications and selections filed after that hour will be governed by the time of filing.

4. 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 regulations in 43 CFR 185.35.

5. Persons claiming preference rights based upon valid settlement, statutory preference or equitable claims must enclose properly corroborated statements in support of their application setting forth all facts relevant to their claims.

6. Inquiries concerning the lands should be addressed to the Manager, Land Office, Bureau of Land Management, Phoenix, Arizona.

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

APRIL 8, 1964.

[F.R. Doc. 64-3610; Filed, Apr. 13, 1964; 8:46 a.m.]

[Public Land Order 3376]

[Oregon 012453]

OREGON

Partly Revoking Public Land Order No. 2956 of March 4, 1963

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:

1. Public Land Order No. 2956 of March 4, 1963, so far as it withdrew the following-described lands for preservation of archeological values, is hereby revoked:

WILLAMETTE MERIDIAN

T. 19 S., R. 19 E.,
Sec. 1, E½SW¼;
Sec. 12, E½NW¼ and SW¼NW¼.

Containing 200 acres.

2. The land is situated about 34 airline miles southeast of Prineville, Oregon. Soils range from a generally heavy silty clay loam in the bottom of the shallow draw traversing the area, to tuffaceous material on the higher ground.

3. Subject to any valid existing rights and equitable claims, the requirements of applicable law, and the provisions of any existing withdrawals, the lands are hereby opened to filing of applications and selections. All valid applications and selections under the nonmineral public land laws presented at or prior to 10:00 a.m. on May 14, 1964, will be considered as simultaneously filed at that hour. Rights under such applications and selections filed after that hour will be governed by the time of filing.

4. The lands have been open to applications and offers under the mineral leasing laws. They will be open to location under the United States mining laws at 10:00 a.m. on May 14, 1964.

5. Persons claiming preference rights based upon valid settlement, statutory preference, or equitable claims must enclose properly corroborated statements in support of their applications, setting forth all facts relevant to their claims.

6. The State of Oregon has waived the preference right of application granted to certain States by section 2(c) of the Act of August 27, 1958 (72 Stat. 928; 43 U.S.C. 852).

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

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

APRIL 8, 1964.

[F.R. Doc. 64-3611; Filed, Apr. 13, 1964; 8:46 a.m.]

[Public Land Order 3377]

[Washington 04743]

WASHINGTON

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 Mt. Baker 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, Department of Agriculture for utilization of the surface as recreation areas, as indicated:

WILLAMETTE MERIDIAN

MINERAL PARK CAMPGROUND

T. 34 N., R. 13 E., Unsurveyed,
Sec. 5, NW¼SW¼NW¼;
Sec. 6, N½N½SW¼NE¼ and N½SE¼NE¼.

CASCADE PASS CAMPGROUND

T. 34 N., R. 13 E., Unsurveyed,
Sec. 1, NW¼NE¼NE¼ and NE¼NW¼NE¼.
T. 35 N., R. 13 E., Unsurveyed,
Sec. 36, SE¼SE¼SW¼ and SW¼SW¼SE¼.

CASCADE ROAD PICNICKING AREA

T. 35 N., R. 13 E., Unsurveyed,
Sec. 35, S½SW¼NE¼.

COLONIAL CREEK CAMPGROUND

T. 37 N., R. 13 E., Unsurveyed,
Sec. 15, SW¼SE¼NW¼, N½NE¼SW¼, E¼NE¼NW¼SW¼, W½NW¼SE¼, NE¼SW¼SE¼, E½SE¼SW¼SE¼, and SW¼SE¼SE¼.

The areas described aggregate approximately 180 acres.

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

APRIL 8, 1964.

[F.R. Doc. 64-3612; Filed, Apr. 13, 1964; 8:47 a.m.]

[Public Land Order 3378]

[New Mexico 0397617]

NEW MEXICO

Withdrawal for Forest Service Administrative Sites

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 Cibola National Forest are hereby withdrawn from prospecting, location, entry and purchase under the United States mining laws, but not from leasing under the mineral leasing laws, in aid of programs of the Forest Service for utilization of the surface for administrative sites:

NEW MEXICO PRINCIPAL MERIDIAN

BALDWIN ADMINISTRATIVE SITE

T. 1 S., R. 10 W.,
Sec. 33, NE¼NW¼.

WATER CANYON ADMINISTRATIVE SITE

T. 3 S., R. 3 W.,
Sec. 23, E½SW¼NE¼ and W½SE¼NE¼.

MONICA ADMINISTRATIVE SITE

T. 4 S., R. 6 W.,
Sec. 18, SW¼NE¼SE¼ and SE¼NW¼SE¼.

The areas described aggregate approximately 100 acres.

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

APRIL 8, 1964.

[F.R. Doc. 64-3613; Filed, Apr. 13, 1964; 8:47 a.m.]

[Public Land Order 3379]

OREGON

Withdrawal for Forest Service Administrative Sites and 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 are hereby withdrawn from prospecting, location, entry and purchase under the mining laws of the United States 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 administrative sites and recreation areas, as indicated:

[Oregon 013902]

WILLAMETTE MERIDIAN

UMATILLA NATIONAL FOREST

Happy Home Campground

T. 4 S., R. 29 E.,
Sec. 29, S½SW¼NE¼SE¼ and N½NW¼SE¼SE¼.

Coon Campground

T. 4 S., R. 30 E.,
Sec. 31, NE¼SW¼SE¼ and N½SE¼SW¼SE¼.

Drift Fence Campground

T. 6 S., R. 32 E.,
Sec. 4, SE¼SW¼SW¼.

Mote Springs Campground

T. 7 S., R. 32 E.,
Sec. 28, NE¼NE¼SW¼.

Cable Creek Campground

T. 6 S., R. 33 E.,
Sec. 11, SW¼NW¼NW¼, SW¼SE¼NW¼NW¼ and NW¼NE¼SW¼NW¼.

Big Creek Campground

T. 6 S., R. 34 E.,
Sec. 33, S½NE¼NE¼NE¼ and N½SE¼NE¼NE¼.

Moon Meadows Recreational Area

T. 7 S., R. 35 E.,
Sec. 30, SW¼NE¼NE¼ and S½NW¼NE¼.

South Fork Campground

T. 2 N., R. 37 E.,
Sec. 5, NE¼ lot 2.

Elk Campground

T. 2 N., R. 37 E.,
Sec. 5, SE¼SE¼NE¼.

Elbow Campground

T. 3 N., R. 37 E.,
Sec. 28, SE¼NW¼NE¼.

Powder Campground

T. 3 N., R. 37 E.,
Sec. 28, NW¼SW¼NE¼, SE¼SE¼NW¼ and E½NE¼SW¼.

Squaw Springs Campground

T. 2 N., R. 38 E.,
Sec. 5, SE¼SW¼NW¼ and NE¼NW¼SW¼.

Phillips Wayside

T. 2 N., R. 38 E.,
Sec. 11, NW¼NW¼SW¼.

Spout Springs Lookout and Ski Area

T. 3 N., R. 38 E.,
Sec. 3, S½S½S½;
Sec. 10, W½NE¼, N½NW¼, NE¼SW¼NW¼, SE¼NW¼, E½NE¼SW¼, and NW¼SE¼.

Woodland Park Campground

T. 3 N., R. 38 E.,
Sec. 14, W½SE¼SW¼.

Deadman Spring Campground

T. 4 N., R. 38 E.,
Sec. 14, S½NW¼SW¼.

Target Meadow Campground

T. 4 N., R. 38 E.,
Sec. 21, SE¼NE¼SW¼, SE¼SW¼SW¼, SE¼SW¼, and W½SW¼SE¼;
Sec. 28, NW¼NE¼, NW¼SW¼NE¼, NE¼NW¼, E½NW¼NW¼, and N½SE¼NW¼.

Tollgate Campground

T. 4 N., R. 38 E.,
Sec. 32, S½SE¼NE¼.

Luger Spring Campground

T. 3 N., R. 39 E.,
Sec. 5, NW¼NE¼SW¼.

Dusty Spring Campground

T. 4 N., R. 39 E.,
Sec. 7, S½ lot 10.

Jubilee Campground

T. 4 N., R. 39 E.,
Sec. 8, SE¼SW¼ and SW¼SE¼;
Sec. 17, NW¼NE¼, and NE¼NW¼.

Squaw Spring Campground

T. 5 N., R. 39 E.,
Sec. 9, SE¼SE¼NE¼.

Bone Springs Campground

T. 5 N., R. 39 E.,
Sec. 28, SW¼NE¼SE¼ and NW¼SE¼SE¼.

Mottet Spring Campground

T. 5 N., R. 39 E.,
Sec. 32, NE¼SW¼SE¼ and NW¼SE¼SE¼.

Timothy Spring Campground

T. 5 N., R. 39 E.,
Sec. 36, S½NW¼SW¼ and NE¼SW¼SW¼.

Deduck Campground

T. 6 N., R. 39 E.,
Sec. 29, SW¼SW¼NE¼ and NW¼NW¼SE¼.

Bear Canyon Campground

T. 5 N., R. 40 E.,
Sec. 35, SE¼NE¼SE¼;
Sec. 36, SW¼NW¼SW¼.

Mosier Spring Campground

T. 5 N., R. 41 E.,
Sec. 4, S½SE¼SE¼.

(Oregon 013914)

WILLAMETTE MERIDIAN

MALHEUR NATIONAL FOREST

Blue Creek Work Center

T. 20 S., R. 28 E.,
Sec. 9, SW¼SW¼SE¼ and SE¼SE¼SW¼.

Bear Tree Guard Station

T. 19 S., R. 29 E.,
Sec. 7, NE¼SW¼NE¼.

Sugarloaf Lookout

T. 19 S., R. 29 E.,
Sec. 21, NE¼NE¼NE¼.

West Myrtle Lookout

T. 18 S., R. 30 E.,
Sec. 31, NW¼NE¼NE¼.

Burnt Mountain Lookout

T. 19 S., R. 30 E.,
Sec. 36, SW¼NW¼NW¼.

Crow Flat Guard Station

T. 20 S., R. 31 E.,
Sec. 13, W½NE¼NW¼ and E½NW¼NW¼.

Joaquin Miller Campground

T. 20 S., R. 31 E.,
Sec. 23, W½NE¼NW¼ and E½NW¼NW¼.

Idlewild Campground

T. 20 S., R. 31 E.,
Sec. 27, S½SE¼SW¼ and S½SW¼SE¼.
Sec. 34, N½NE¼NW¼.

Hi-Desert Ski Area

T. 20 S., R. 31 E.,
Sec. 34, E½NE¼SW¼.

Rock Springs Campground

T. 18 S., R. 32 E.,
Sec. 23, E½SE¼NE¼.

King Mountain Lookout

T. 20 S., R. 32 E.,
Sec. 27, NE¼SE¼NW¼.

Wolf Mountain Lookout

T. 17 S., R. 33 E.,
Sec. 33, SW¼NE¼NW¼.

Cove Springs Work Center

T. 18 S., R. 33 E.,
Sec. 13, W½NW¼SE¼.

Calamity Butte Lookout

T. 19 S., R. 33 E.,
Sec. 13, S½NW¼NE¼.

Call Meadows Guard Station

T. 20 S., R. 33 E.,
Sec. 29, E½NW¼NW¼.

The areas described total in the aggregate 1,473.41 acres.

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

APRIL 8, 1964.

[F.R. Doc. 64-3614; Filed, Apr. 13, 1964; 8:47 a.m.]

[Public Land Order 3380]

WASHINGTON

Withdrawals for Forest Service Recreation Areas and for Highway Purposes

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 Washington, in the national forests hereafter named, 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 recreation areas and highway purposes as indicated:

(Washington 04792)

WILLAMETTE MERIDIAN

OKANOGAN NATIONAL FOREST

North Cross-State Highway zone addition

T. 35 N., R. 17 E., unsurveyed,
Sec. 24, SW¼SW¼;
Sec. 26, NE¼NE¼, and SW¼NW¼;
Sec. 27, NW¼SW¼;
Sec. 28, SE¼NE¼.
T. 35 N., R. 18 E., unsurveyed,
Sec. 18, SW¼SE¼ and SE¼SW¼.

The areas described aggregate approximately 280 acres.

(Washington 04896)

WILLAMETTE MERIDIAN

OKANOGAN NATIONAL FOREST

Slate Peak Observation Site

T. 37 N., R. 17 E., Unsurveyed,
Sec. 1, SW¼NE¼NW¼.

Slate Meadows Campground

T. 37 N., R. 18 E., Unsurveyed,
Sec. 7, NE¼SW¼ and W½NW¼SE¼.

Robinson Creek Observation Site

T. 37 N., R. 18 E., Unsurveyed,
Sec. 36, NE¼SW¼NE¼.

Early Winters Ranger Station Administrative Site

T. 36 N., R. 19 E.,
Sec. 23, S½SE¼SW¼SW¼, S½SE¼SW¼, excluding patented HES–89; SW¼SW¼SE¼ south of West Fork Methow River excluding patented HES–84.
Sec. 26, W½NW¼NW¼, excluding patented HES–89 and 250; E½NW¼NE¼NW¼, NE¼NE¼NW¼, excluding patented HES–250 W½NW¼NE¼ excluding patented HES–84 and 250.

Buttermilk Butte Observation Site

T. 32 N., R. 20 E., Unsurveyed,
Sec. 2, NE¼NW¼SW.

Buttermilk Campground

T. 32 N., R. 20 E., Unsurveyed,
Sec. 2, SW¼SW¼SW¼.

Sweetgrass Butte Observation Site

T. 37 N., R. 20 E., Unsurveyed,
Sec. 35, SW¼NW¼NE¼.

Falls Creek Campground Addition

T. 36 N., R. 21 E.,
Sec. 12, NE¼ lot 1.

Eightmile Campground

T. 37 N., R. 21 E., Unsurveyed,
Sec. 32, NW¼SW¼NE¼.

Lake Creek Cabin Campground

T. 38 N., R. 21 E., Unsurveyed,
Sec. 24, NE¼SW¼NW¼.

Andrews Trail Campground

T. 38 N., R. 22 E., Unsurveyed,
Sec. 20, SE¼NW¼NE¼.

Frazer Creek Campground

T. 33 N., R. 23 E.,
Sec. 1, SE¼SE¼NW¼.

Starvation Mt. Observation Site

T. 35 N., R. 23 E., Unsurveyed,
Sec. 15, NW¼SE¼SW¼.

Iron Gate Campground

T. 40 N., R. 23 E.,
Sec. 35, NW¼SE¼SE¼.

Mutton Ridge Observation Site

T. 37 N., R. 24 E.,
Sec. 30, SE¼NW¼NE¼.

Mt. Hull Observation Site

T. 39 N., R. 28 E.,
Sec. 8, NW¼SE¼NW¼.

Aeneas Hunter Springs Campground

T. 35 N., R. 29 E.,
Sec. 12, SE¼SW¼SW¼.

San Poil Campground

T. 35 N., R. 31 E.,
Sec. 24, NW¼SE¼SW¼.

The areas described aggregate approximately 292 acres.

(Washington 04938)

WILLAMETTE MERIDIAN

UMATILLA NATIONAL FOREST

Table Rock Lookout Tower Site

T. 6 N., R. 39 E.,
Sec. 3, SW¼NE¼NE¼, and NW¼SE¼NE¼.

Griffin Peak Lookout Site

T. 7 N., R. 39 E.,
Sec. 10, SW¼SE¼SE¼.

Godman Guard Station

T. 7 N., R. 40 E.,
Sec. 10, SE¼SW¼NE¼, and SW¼SE¼NE¼.

Oregon Butte Lookout

T. 7 N., R. 41 E.,
Sec. 4, NW¼SE¼SW¼.

Clearwater Lookout

T. 8 N., R. 42 E.,
Sec. 5, NE¼SE¼NW¼.

Saddle Springs Guard Station

T. 7 N., R. 43 E.,
Sec. 18, SW¼SE¼NE¼.

Saddle Butte Lookout

T. 7 N., R. 43 E.,
Sec. 19, NE¼SE¼NE¼;
Sec. 20, NW¼SW¼NW¼.

Pataha Creek Campground

T. 9 N., R. 42 E.,
Sec. 2, E½ and E½W½ of lot 3, and NE¼SE¼NW¼.

The areas describe aggregate approximately 148 acres.

The national forest lands withdrawn by this order total approximately 720 acres.

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

APRIL 8, 1964.

[F.R. Doc. 64–3615; Filed, Apr. 13, 1964; 8:47 a.m.]

[Public Land Order 3381]

[Washington 04087 (11762; 469355)]

WASHINGTON

Revoking Lighthouse Reserve; Cape Elizabeth

By virtue of the authority contained in the Act of August 22, 1914 (38 Stat. 704), it is ordered as follows:

1. The Departmental order of November 14, 1914, which reserved the following described lands at or near Cape Elizabeth, Washington, for lighthouse purposes and the Departmental order of January 30, 1909, so far as it reserved the same lands temporarily for lighthouse purposes are hereby revoked:

WILLAMETTE MERIDIAN

T. 22 N., R. 13 W.,
Sec. 27, lot 4 and SE¼SE¼;
Sec. 34, lots 1, 2, 3, and NE¼NE¼.

Containing 206.75 acres.

2. The lands are in the Quinaielt Indian Reservation established by Presidential Proclamation of April 11, 1859 (12 Stat. 971). About 85.05 acres were restored to trust status by the Act of October 15, 1962 (76 Stat. 913).

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

APRIL 8, 1964.

[F.R. Doc. 64–3616; Filed, Apr. 13, 1964; 8:47 a.m.]

Title 45—PUBLIC WELFARE

Subtitle A—Department of Health, Education, and Welfare, General Administration

PART 13—ALLOCATION AND UTILIZATION OF SURPLUS PERSONAL PROPERTY FOR EDUCATIONAL, PUBLIC HEALTH, AND CIVIL DEFENSE PURPOSES

Part 13 of Title 45 CFR is hereby amended to read as follows:

Sec.
13.1 Definitions.
13.2 Basic policy.
13.3 Geographic scope.
13.4 Allocation of donable property.
13.5 Donations of personal property.
13.6 Certifications by state agencies and donees.
13.7 State agency agreements.
13.8 Certifications and agreements respecting interstate distribution.
13.9 Terms and conditions applicable to transfers or retransfers of donable property.
13.10 Terms and conditions applicable to transfers or retransfers of aircraft.

AUTHORITY: The provisions of this Part 13 issued under sec. 203, 63 Stat. 385, as amended, 70 Stat. 493; 40 U.S.C. 484; 76 Stat. 805.

§ 13.1 Definitions.

(a) "Act" means the Federal Property and Administrative Services Act of 1949, Public Law 152, 81st Congress (63 Stat. 377), as amended (40 U.S.C. 471 et seq.). Terms defined in the act and not defined

in this section, shall have in this part the meaning given to them in the act.

(b) "Accredited" means approval by a recognized accrediting board or association on a regional, state, or national level such as a State Board of Education or Health, a regional or national accrediting association for universities, colleges, or secondary schools, the American Hospital Association, etc.

(c) "Approved" means recognition and approval by the State Department of Education, State Department of Health, or other appropriate authority. With respect to an educational institution, such approval must relate to academic or instructional standards. An educational institution may be considered as approved if its credits are accepted by accredited or State approved institutions, or if it meets the academic or instructional standards prescribed for public schools in the State.

(d) "Civil defense organization" means the official organization established by or pursuant to State law as being responsible for the civil defense program for such State, or political subdivisions and instrumentalities thereof. This term does not include a "State agency" as defined in paragraph (cc) of this section.

(e) "Clinic" means an approved facility organized and operated for the primary purpose of providing outpatient health services and includes the customary related facilities such as laboratories, treatment rooms, etc.

(f) "College" means an approved or accredited institution of higher learning offering organized study courses and credits leading to the baccalaureate or higher degrees.

(g) "Department" means the Department of Health, Education, and Welfare.

(h) "Donable property" means surplus equipment, materials, books, or other supplies under the control of any executive agency (including surplus property in working capital funds established pursuant to section 405 of the National Security Act of 1947, as amended, or in similar management-type funds) except:

(1) Such property as may be specified from time to time by the Administrator of General Services;

(2) Surplus agricultural commodities, food, and cotton or woolen goods determined from time to time by the Secretary of Agriculture to be commodities requiring special handling in order to assist him in carrying out his responsibilities with respect to price support or stabilization;

(3) Property in the custody of an agency or an organizational unit thereof which is subject to the Government Corporation Control Act (59 Stat. 597; 31 U.S.C. 841); the donation of which is determined by the holding agency to be inconsistent with its program responsibilities.

(4) Property in trust funds.

(i) "Donated property" means equipment, materials, books and other personal property transferred to eligible institutions or organizations pursuant to the provisions of Sec. 203(j) of the Act and implementing regulations.

(j) "Donee" means an eligible applicant who is a recipient of donable property.

(k) "Educational Institution" means a tax-supported or nonprofit school system, school, college, university, school for the mentally retarded, school for the physically handicapped, radio or television station licensed by the Federal Communications Commission as an educational radio or an educational television station, and public libraries. School systems, schools, colleges and universities must be approved or accredited.

(l) "Eligible applicant" means (1) a civil defense organization as defined in paragraph (d) of this section, (2) an approved or accredited tax-supported or nonprofit medical institution, hospital, clinic, health center, school system, school, college, or university, or (3) a tax-supported or nonprofit school for the mentally retarded, school for the physically handicapped, a radio station or a television station licensed by the Federal Communications Commission as an educational radio or an educational television station, or a public library. Nonprofit organizations must be exempt from taxation under section 501(c)(3) of the Internal Revenue Code of 1954.

(m) "Health center" means an approved facility utilized by a health unit for the provision of public health services, including related facilities such as laboratories and clinics.

(n) "Hospital" means an approved or accredited institution providing health services primarily for inpatient medical or surgical care of the sick or injured and includes related facilities such as laboratories, outpatient departments, training facilities, central service facilities, and staff offices which are an "integral part" of the hospital. The term "hospital" does not include institutions whose primary purpose is the furnishing of domiciliary care.

(o) "Medical institution" means an approved or accredited institution, facility, entity or organization which has for its primary function the provision of medical services, or the promotion of health through the conduct of research, investigations, experiments, training and demonstrations, relating to causes, prevention, and methods of diagnosis and treatment of diseases or injuries; the term includes hospitals, clinics, research and health centers, laboratories, medical, dental, and nursing schools, and similar institutions, but does not include those primarily engaged in domiciliary care.

(p) "Motor vehicles" means property in Federal Supply Classification Group 23.

(q) "Need" means a requirement for anything usable and necessary by eligible applicants in the conduct of educational, public health, or civil defense activities.

(r) "Nonprofit" used in connection with a medical institution, hospital, clinic, health center, school, college, university, school for the mentally retarded, school for the physically handicapped, or an educational television or educational radio station licensed by the Federal Communications Commission means one which is operated by one or more nonprofit corporations or associations, no part of the net earnings of which inures or may lawfully inure to the benefit of any private shareholder or individual, and which has been held by the Internal Revenue Service to be tax-exempt under the provisions of section 501(c)(3) of the 1954 Internal Revenue Code.

(s) "Personal property" means surplus property of any kind or any interest therein, except: Real property, records of the Federal Government and naval vessels of the following categories: "Battleships, cruisers, aircraft carriers, destroyers, and submarines; and merchant vessels of 1,500 gross tons or more subject to disposal by the United States Maritime Commission."

(t) "Public library" means a library that serves free all residents of a community, district, state, or region, and receives its financial support in whole or in part from public funds.

(u) Radio—"Educational radio station" means a radio station licensed by the Federal Communications Commission and operated exclusively for noncommercial educational purposes and the licensee of which is tax-supported or nonprofit and tax-exempt under section 501(c)(3) of the Internal Revenue Code of 1954.

(v) "Reimbursement to donees" means those costs and expenses for which the donee may recover monies from the proceeds of the sale of restricted donated items. These include (1) in such prorated amount, based on use, as may be prescribed by the Department (i) the certified costs of initially acquiring the property; (ii) the rehabilitation costs incurred in initially placing the property into operable condition; (2) the actual costs of listing and lotting property for sale; and (3) the actual costs of advertising the property when authorized by the Regional Representative to conduct the sale.

(w) "Reimbursement to State Agencies" means those costs and expenses for which the State Agency may recover monies from the proceeds of the sale of undistributed surplus property in the custody of the State Agency. These include only those costs of listing and lotting the property which are incurred subsequent to GSA authorization of the sales action, plus the actual cost of advertising in those cases where the State Agency is requested to conduct the sale.

(x) "School" (excepting schools for the "mentally retarded and schools for the physically handicapped") means an approved or accredited organizational entity devoted primarily to approved academic, vocational, or professional study and instruction, which operates primarily for educational purposes on a full-time basis for a minimum school year and employs a full-time staff of qualified instructors.

(y) "School for the mentally retarded" means a facility or institution operated primarily to provide specialized instruction to students of limited mental capacity. It must be tax-supported or nonprofit and exempt from taxation under section 501(c)(3) of the Internal Revenue Code of 1954. It must operate on a full-time basis for the equivalent of a

minimum school year prescribed for public school instruction of the mentally retarded, with a staff of qualified instructors, and demonstrate that the facility meets the health and safety standards of the state or local governmental body.

(z) "School for the physically handicapped" means a school organized primarily to provide specialized instruction to students whose physical handicaps necessitate individual or group instruction. The school must be tax-supported or nonprofit and exempt from taxation under section 501(c)(3) of the Internal Revenue Code of 1954. Such a school must operate on a full-time basis for the equivalent of a minimum school year prescribed for public school instruction for the physically handicapped, with a staff of qualified instructors, and demonstrate that the facility meets the health and safety standards of the state or local governmental body.

(aa) "School system" means a group of approved or accredited tax-supported schools operated under one administrative organization.

(bb) "Secretary" means the Secretary of Health, Education, and Welfare.

(cc) "State agency" means the agency designated by State statute or Executive order to make the certifications concerning and distribution of donable property to eligible applicants within the State, as provided for in section 203(j) of the Act.

(dd) "State" means a state of the United States, the District of Columbia, the Commonwealth of Puerto Rico, or a Territory or possession of the United States.

(ee) "Tax-supported" used in connection with a medical institution, hospital, clinic, health center, school, school system, college, university, school for the mentally retarded, school for the physically handicapped, or an educational television station or educational radio station licensed by the Federal Communications Commission means one which receives a major portion of its financial support from moneys derived from State or local government revenues.

(ff) Television—"Educational television station" means a television station licensed by the Federal Communications Commission and operated exclusively for noncommercial educational purposes and the licensee of which is tax-supported or nonprofit and tax-exempt under section 501(c)(3) of the Internal Revenue Code of 1954.

(gg) "University" means an approved or accredited institution for instruction and study in the higher branches of learning and which is empowered to confer degrees in special departments or colleges.

§ 13.2 Basic policy.

It is the policy of the Department to strengthen and encourage the development and expansion of educational and public health programs and to promote a state of civil defense operational readiness by the equitable allocation among the States of donable property for educational, public health, and civil defense purposes, and the assuring thereafter of its maximum utilization for these purposes.

§ 13.3 Geographic scope.

This part is applicable to donable personal property located, needed and usable within the continental United States, the District of Columbia, the Commonwealth of Puerto Rico, and the Territories and possessions of the United States.

§ 13.4 Allocation of donable property.

(a) Allocation of donable property will be made on the basis of need and usuability of the property. The following factors will be taken into consideration in effecting equitable allocation of property:

(1) Need and usability of property as reflected by requests from State Agencies.

(2) Areas or States in greatest need of the type of property to be allocated, where the particular important need is evidenced by a justification accompanying the expression of need.

(3) Extraordinary needs occasioned by disasters.

(4) Equity in allocations based on population percentages.

(5) The quantity of property of the type under consideration which has already been allocated or is potentially available to a State Agency.

(6) The ability or performance of State Agencies in meeting current transportation requirements.

(b) It is recognized that rigid adherence to the above factors is not possible; good sense must always be applied. Judgment is necessary in the application of the factors and the weight that will be given each factor. However, factors other than those set forth will not be used or applied by allocators. When using factor in paragraph (a)(2) of this section, it should not be applied to commonly available items. Its use must be confined to critical or special items not normally available, or to items required by the State to maintain the interest of its donees; in such cases, State Agencies must make statements of fact as justifications.

§ 13.5 Donations of personal property.

(a) Donations of personal property are authorized by the Administrator of General Services upon determination by the Department that the property applied for is usable and necessary for educational, public health, or civil defense purposes, including research for any such purpose. Property is allocated by the Department to State Agencies on the basis of need and utilization. All applications for property shall be made by State Agencies on Form HEW 135, "Application for Surplus Property—Federal Property and Administrative Services Act of 1949—as amended." Applications shall indicate that pickup will be made by or that shipment will be made to either a State Agency or an eligible donee. In its application, the State Agency shall make the certifications as provided in §13.6(a) and shall agree to the terms and conditions as provided in § 13.7. When property is to be picked up by or shipped to a donee, in addition to the certifications made by the State Agency as above provided, the donee shall make the certifications as provided in § 13.6(b). The donee shall also indicate the purpose for which the property is being acquired and shall agree to the applicable terms and conditions as provided in §§ 13.9 and 13.10. Prior to the release of property by the holding agency to a State Agency or donee, the Department must certify that the State Agency is eligible to receive the property in accordance with the act and regulations promulgated thereunder, and that the property is usable and needed. When property is distributed by a State Agency to a donee, the donee shall make the certifications as provided in § 13.6(b). The donee shall also indicate the purpose for which the property is being acquired, and shall agree to the applicable terms and conditions as provided in §§ 13.9 and 13.10. The certifications and agreements of a donee shall be made through its authorized representative. The State Agency must make a finding that the donee is eligible and that the property is usable and needed by the donee.

(b) An otherwise eligible applicant, except educational radio stations and educational television stations, may, in the discretion of the Department, receive donable property prior to "approval" or "accreditation" (as elsewhere defined in this part) of its operations only where it is unable to obtain such approval or accreditation because it is newly organized or because the facilities in which the health or educational activities are to be housed are not yet constructed or are being constructed. Also, schools for the mentally retarded and physically handicapped and public libraries which establish their eligibility under the Department's regulations may receive donable property during construction. In such cases, the applicant must demonstrate to the satisfaction of the Department, that upon completion of construction the facilities will be used for an eligible health or educational purpose and that such health or educational utilization will after operations in such facilities have commenced, receive such approval or accreditation, except schools for physically handicapped, mentally retarded, and public libraries. No property shall be so donated under this paragraph except upon submission of the application to the Department and the express written approval of the Department to such donation.

(c) Donation of property other than aircraft shall be effective, and title shall pass from the United States of America to the donee, upon the taking of possession of the property by the donee and the execution by an authorized representative of the donee of either a Form HEW 135 or a warehouse issue sheet or other State agency document containing the same certifications, terms and conditions as are applicable and set forth on Form HEW 135. Title to aircraft shall pass from the United States of America to the donee upon execution and delivery of a Conditional Transfer Document containing the terms and conditions provided in sec. 13.10.

(d) Retransfers and reallocations of donable property to other donees or to other State Agencies shall be subject to the applicable provisions set forth in §§ 13.6, 13.7, 13.9, and 13.10.

(e) No donable property will be allocated until the Secretary has determined that the State Agency has conformed to minimum standards of operation prescribed by the Secretary for the disposal of surplus property.

(f) Donable property received in State Agency warehouses shall be distributed promptly to eligible donees within the State, or shall be reallocated to another State Agency by the Department. Property not distributed within a twelve-month period shall be reported to the Department for redisposal instructions.

(g) State Agencies shall make such reports to the Department on the use, condition, and location of donated property and other pertinent matters as the Department may from time to time require.

§ 13.6 Certifications by State Agencies and donees.

(a) A State Agency, in making application for donable surplus personal property, shall make a certification as follows:

(1) The State Agency hereby certifies that:

(i) It is the agency of the State designated under State law and as such has legal authority within the meaning of section 203(j) of the Act, and the regulations of the Department to receive surplus property for distribution within the State to eligible donees within the meaning of said Act and regulations.

(ii) Such property is usable and needed for educational, public health, or civil defense purposes, including research for any such purpose, in the State.

(2) When such property is picked up by or shipped to a State Agency, the State certifies that it has available adequate funds, facilities and personnel to effect accountability, warehousing, proper maintenance, and distribution of such property.

(3) When such property is distributed by a State Agency to a donee, or when delivery is made direct from a holding agency to a donee, the State certifies that the donee who is acquiring the property is eligible within the meaning of the Act, and the regulations of the Department, and that such property is usable and needed by the donee.

(b) A donee, when acquiring donable surplus personal property shall certify as follows:

(1) It is a tax-supported or nonprofit and tax-exempt (under section 501(c)(3) of the Internal Revenue Code of 1954, or section 101(6) of the Internal Revenue Code of 1939) school system, school, college, university, school for the mentally retarded or physically handicapped, public library, educational radio or educational television station, medical institution, hospital, clinic or health center, or a civil defense organization designated pursuant to State law, within the meaning of the Act, and the regulations of the Department.

(2) Such property is usable and necessary in the State for either educational, public health, or civil defense purposes, including research for any such purpose, is required for its own use to fill an existing need for one of such purposes, and is not being acquired for any other use or purpose, for use outside the State, or for sale.

(3) Funds are available to pay the costs of care and handling incident to donation, including packing, preparation for shipping, loading, and transporting such property.

§ 13.7 State Agency agreements.

With respect to property picked up by or shipped to State Agencies, the State Agency shall agree to the following:

(a) The right to possession only is granted and the State agrees to make prompt State-wide distribution of the same, on the basis of educational, public health, or civil defense usability and need, to donees eligible to acquire property under section 203(j) of the Act, and regulations of the Department, after such eligible donees have properly executed the certifications and appropriate agreements required by this part.

(b) Title to such property shall remain in the United States of America although the State shall have taken possession thereof, except where State licensing laws require that title pass in order that State licensing or registration of the property may be effected. Title to the property shall pass to the eligible donees when it executes the certifications and appropriate agreements required by this part and has taken possession of the property.

(c) The State further agrees that it will pay the cost of care, handling, and shipping incident to taking possession of such property and that during the time that title remains in the United States of America it will be responsible, as a bailee for mutual benefit, for such property from the time it is released to the State or to the transportation agent designated by the State; and that in the event of any loss of, or damage to any or all of the property, it will file such claim and/or institute and prosecute to conclusion such proceedings as may be necessary to recover, for the account of the United States of America, the fair value of any such property lost or damaged.

(d) No surplus property hereafter approved for donation by the Administrator of General Services shall be available to State Agencies for their own administrative purposes unless such property is approved for such use by the Secretary and the Administrator, and the State Agency shall have entered into a Cooperative Agreement with the Department providing for such use.

§ 13.8 Certifications and agreements respecting interstate distribution.

Where an applicant State Agency is acting (under an interstate distribution agreement approved by the Department) as an agent and authorized representative of an adjacent State with which it shares a common boundary, the certifications and agreements required by §§ 13.6 and 13.7 shall also be made by such applicant State Agency respecting the donees in such adjacent State to which distribution will be made and the property to be distributed in such adjacent State, and such certifications and agreements shall constitute the certifications and agreements of the adjacent State on whose behalf and as whose authorized representative the applicant State Agency is acting.

§ 13.9 Terms and conditions applicable to transfers or retransfers of donable property.

(a) Property acquired by a donee, regardless of acquisition cost, donated for public health or educational purposes, shall be on an "as is", "where is" basis without warranty of any kind.

(b) Property having a single item acquisition cost of $2,500 or more, donated for public health or educational purposes shall be subject to the following additional terms and conditions:

(1) Such property shall be used only for the public health or educational purpose for which acquired, including research for any such purpose, and for no other purpose.

(2) Such property shall be placed in use for the purpose for which acquired no later than twelve months after acquisition thereof. In the event such property is not placed in use within twelve months of receipt, the donee, within 30 days after the expiration of the twelve-month period, shall notify the Department in writing through the State Agency. Title and right to the possession of such property not so placed in use within the above-mentioned period shall, at the option of the Department revert to the United States of America, and upon demand the donee shall release such property to such person as the Department or its designee shall direct.

(3) There shall be a period of restriction which will expire after such property has been used for the purpose for which acquired for a period of four years, except that the period of restriction on motor vehicles will expire after a period of two years of such use.

(4) During the period of restriction, the donee shall not sell, trade, lease, lend, bail, encumber, or otherwise dispose of such property or remove it for use outside the State without prior written approval of the Department. Any sale, trade, lease, loan, bailment, encumbrance, or other disposal of the property, when such action is authorized by the Department shall be for the benefit and account of the United States of America and the gross proceeds thereof shall be received and held in trust for the United States of America and transmitted through the SASP promptly to the Department. Reimbursement to the donee will be made by the Department in accordance with the provisions of this part.

(5) In the event such property is sold, traded, leased, loaned, bailed, encumbered, or otherwise disposed of during the period of restriction without prior approval, all proceeds shall be deemed to have been received and held in trust for the United States and the donee shall promptly remit the same to the Department. When the fair market value of the property at the time of the unauthorized action is greater than the proceeds derived from such action, the donee shall, at the option of the Department, also be liable for and promptly remit the difference between such proceeds and the fair market value.

(6) If during the period of restriction, property is no longer suitable, usable or further needed by the donee for the purpose for which acquired, the donee shall promptly notify the Department through

the State Agency, and shall, as directed by the Department or State Agency, either return the property to the SASP, retransfer the property to another donee, a department or agency of the United States, sell or otherwise dispose of the property. Any sale shall be for the benefit and account of the United States of America and the gross proceeds thereof shall be received and held in trust for the United States of America and shall be transmitted promptly through the State Agency to the Department. Reimbursement by the Department will be made to the donee in accordance with the provisions of this part.

(7) Donee shall make reports to the State Agency on the use, condition, and location of such property and on other pertinent matters as may be required from time to time by the State Agency or the Department.

(8) At the option of the Department, the donee may abrogate the terms and conditions set forth in subparagraphs (1) through (7) of this paragraph by payment of an amount as determined by the Department.

(c) Aircraft (FSC Group 15) are a specific exception to the provisions of paragraph (a) and (b) of this section. The special terms and conditions provided in § 13.10 herein shall apply to the donation of aircraft.

(d) Property donated for civil defense purposes shall be subject to the terms and conditions set forth in 32 CFR Chapter I, Subchapter G, Part 222.

(e) Butler-type storage warehouses, house trailers (without undercarriages), and quonset huts, located on nonexcess land, donated under this section, shall be subject to the terms and conditions applicable to the transfer or retransfer of donable property for public health, educational or civil defense purposes. The State Agency and/or the donee, as applicable, shall comply with all conditions which may be required by the holding agency for the removal of such property. Whenever the holding agency requires the site upon which such property is located to be cleared after removal of such property, the State Agency shall post performance bonds, or make performance guaranty deposits, or give whatever assurances may be required by the Department or the holding agency that the site will be cleared. Where the application Form HEW 135 has also been executed by a donee, the State Agency in lieu of posting such performance bonds, or making such performance guaranty deposits, or giving such other assurances that the site will be cleared, may require these actions to be taken by the donee.

(f) When surplus property in the custody of a State Agency is sold, it shall be sold for the benefit and account of the United States of America, and the gross proceeds thereof will be deposited in the Federal Depository. DHEW may reimburse a State Agency for its documented costs of listing and lotting the property which are incurred subsequent to the authorization of the sales action, plus the actual cost of advertising in those cases where the State Agency is requested to conduct the sale. Listing, as used here, means preparing a list of the items of property to be advertised for sale with a description of each item. Lotting, as used here, means segregating the property to be sold and dividing the property into lots, if by such a grouping a greater return may be expected from the sale. Advertising, as used here, means any form of public announcement intended to give wide circularization and publicity to prospective purchasers.

§ 13.10 Terms and conditions applicable to transfers or retransfers of aircraft.

(a) Aircraft donated pursuant to this part, regardless of acquisition cost, shall be on an "as is", "where is" basis without warranty of any kind.

(b) Aircraft having a single item acquisition cost of $2,500 or more, regardless of the purpose for which donated, shall be subject to the following additional terms and conditions:

(1) A Conditional Transfer Document (Aircraft) containing the terms and conditions provided for in this section and signed by the authorized representative of the applicant must accompany the institution's or organization's application.

(2) Title to the aircraft shall pass from the United States of America to the donee when the Conditional Transfer Document (Aircraft) is executed by the Department of Health, Education, and Welfare and is delivered to the donee.

(3) The donee shall apply to the Federal Aviation Agency for registration of the aircraft within thirty days of the receipt of the fully executed Conditional Transfer Document (Aircraft), and the donee's application for registration shall include a fully executed copy of the Conditional Transfer Document (Aircraft).

(4) The aircraft, together with all engines, appurtenances, and accessories attached thereto and installed therein, hereinafter referred to in this section as the "aircraft property" shall be placed in use for the purpose stated no later than twelve months after acquisition thereof.

(5) In the event the donee does not apply to the Federal Aviation Agency for registration of the aircraft property, or in the event the aircraft property is not placed in use within twelve months of receipt, the donee, within thirty days after the date on which application for registration should have been made, or within thirty days after the expiration of the twelve-month period, shall notify the Department of Health, Education, and Welfare, in the case of aircraft property donated for public health or educational purposes, or the Office of Civil Defense, Department of the Army, in the case of aircraft property donated for civil defense purposes, in writing, through the State Agency. Title and right to the possession of the aircraft property on which application for registration has not been made within thirty days, or which has not been placed in use within twelve months, shall at the option of the Department of Health, Education, and Welfare, in the case of aircraft property donated for public health or educational purposes, or the Office of Civil Defense, Department of the Army, in the case of aircraft property donated for civil defense purposes, revert to the United States of America. Upon demand, the donee shall, as directed by the Department of Health, Education, and Welfare, or its designee, in the case of aircraft property donated for public health or educational purposes, or the Office of Civil Defense, Department of the Army, or its designee, in the case of aircraft property donated for civil defense purposes, release the aircraft property to such agency or person as may be designated, sell the aircraft property, or otherwise dispose of the aircraft property. Any sale shall be for the benefit and account of the United States of America.

(6) There shall be a period of restriction which will expire after the aircraft property has been used for the purpose stated for a period of ten years.

(7) During the period of restriction the aircraft property shall be used only for the purpose stated.

(8) During the period of restriction the donee shall make reports to the State Agency on the use, condition and location of the aircraft property and on other pertinent matters as may be required from time to time by such State Agency, or the Department of Health, Education, and Welfare, in the case of aircraft property donated for public health or educational purposes, or the Office of Civil Defense, Department of the Army, in the case of aircraft property donated for civil defense purposes.

(9) During the period of restriction, the donee shall not sell, trade, lease, lend, bail, encumber, or otherwise dispose of the aircraft property, without prior written approval of the Department of Health, Education, and Welfare, in the case of aircraft property donated for public health or educational purposes, or the Office of Civil Defense, Department of the Army, in the case of aircraft property donated for civil defense purposes. Any sale, trade, lease, loan, bailment, encumbrance, or other disposal of the aircraft property, when such action is authorized by the Department of Health, Education, and Welfare, where the property was donated for public health or educational purposes, or the Office of Civil Defense, Department of the Army, in the case of aircraft property donated for civil defense purposes, shall be for the benefit and account of the United States of America.

(10) In the event, during the period of restriction, the aircraft property is sold, traded, leased, loaned, bailed, encumbered, or otherwise disposed of without prior approval, or is used for a purpose other than the purpose stated, the donee, at the option of the Department of Health, Education, and Welfare, in the case of aircraft property donated for public health or educational purposes, or the Office of Civil Defense, Department of the Army, in the case of aircraft property donated for civil defense purposes, shall be liable to the United States of America for the proceeds of the disposal, the fair market value, or the fair rental value of the aircraft property at the time of such unauthorized transaction or use, as determined by the Department of Health, Education, and Welfare, in the case of aircraft property donated for public health or educational purposes, or the Office of Civil Defense, Department of the Army, in the case of aircraft property donated for civil defense purposes.

(11) If, during the period of restriction, the aircraft property is no longer suitable, usable or further needed by the donee for the purpose for which acquired, the donee shall promptly notify the Department of Health, Education, and Welfare, in the case of aircraft property donated for public health or educational purposes, or the Office of Civil Defense, Department of the Army, in the case of aircraft property donated for civil defense purposes, through the State Agency, and shall, as directed by the Department of Health, Education, and Welfare, in the case of aircraft property donated for public health or educational purposes, or the Office of Civil Defense, Department of the Army, in the case of aircraft property donated for civil defense purposes, or the State Agency, retransfer the aircraft property to another donee, retransfer the aircraft property to a department or agency of the United States, sell the aircraft property, or otherwise dispose of the aircraft property. Any sale shall be for the benefit and account of the United States of America.

(12) At the option of the Department of Health, Education, and Welfare, in the case of aircraft property donated for public health or educational purposes, or the Office of Civil Defense, Department of the Army, in the case of aircraft property donated for civil defense purposes, the donee may obtain abrogation of the terms and conditions set forth in subparagraphs (6) through (11) of this paragraph by payment of an amount as determined by the Department of Health, Education, and Welfare, in the case of aircraft property donated for public health or educational purposes, or the Office of Civil Defense, Department of the Army, in the case of aircraft property donated for civil defense purposes.

(13) The Department of Health, Education, and Welfare, in the case of aircraft property donated for public health or educational purposes, or the Office of Civil Defense, Department of Defense, in the case of aircraft property donated for civil defense purposes, may terminate all of the above conditions and give unrestricted title to the aircraft property to the donee whenever such action is determined to be appropriate.

Dated: April 7, 1964.

[SEAL] ANTHONY J. CELEBREZZE,
Secretary.

[F.R. Doc. 64-3635; Filed, Apr. 13, 1964; 8:48 a.m.]

Title 46—SHIPPING

Chapter I—Coast Guard, Department of the Treasury

SUBCHAPTER E—LOAD LINES

[CGFR 64-16]

STABILITY CONSIDERATIONS; SUBDIVISION; AND MIDSUMMER SEASONAL LOAD LINES FOR GREAT LAKES

Miscellaneous Amendments

Pursuant to the notices of proposed rule making published in the FEDERAL REGISTER of January 30, 1964 (29 F.R. 1572–1586), and February 13, 1964 (29 F.R. 2426), and the Merchant Marine Council Public Hearing Agenda, dated March 23, 1964 (CG–249), the Merchant Marine Council held a public hearing on March 23, 1964, for the purpose of receiving comments, views and data. The proposals considered were identified as Items I to XVI, inclusive. Item III contained proposals regarding stability considerations in load line assignments and subdivision load lines for passenger vessels (CG–249, III, pages 28 to 32, inclusive). Item XVI contained the proposals regarding midsummer seasonal load lines for the Great Lakes (CG–249, XVI, page 340). Several comments supported the proposals. While not proposing specific language changes, some comments opposed proposals if specific actions would reduce safety standards. The proposals in Items III and XVI in the Agenda are adopted without change and set forth in this document, which is the first of a series covering the proposals considered by the Merchant Marine Council.

By virtue of the authority vested in me as Commandant, United States Coast Guard, by section 632 of Title 14, U.S. Code, and Treasury Department Orders 120, dated July 31, 1950 (15 F.R. 6521), and 167–48, dated October 19, 1962 (27 F.R. 10504), the following actions are ordered:

1. The load line regulations shall be amended in accordance with the changes in this document.

2. The amendments to 46 CFR 45.01–75 (a) and (c), regarding a new spring date for midsummer seasonal load lines for the Great Lakes, shall be effective May 1, 1964.

3. The amendments to 46 CFR 43.40–10, 44.05–35, and 45.25–5, which revise the various load line certificates, shall be effective July 1, 1964: *Provided, however,* That load line certificates issued prior to that date without the notes as required by these amendments need not be amended nor reissued to show the change in notes, but shall remain valid and in effect until the expiration dates given thereon or until otherwise canceled or superseded by competent authority.

4. The other regulations and amendments in this document shall become effective on the 30th day following the date of publication in the FEDERAL REGISTER.

5. With the exception of the use of the midsummer seasonal load lines for the Great Lakes, the regulations in this document may be complied with during the interim prior to the applicable effective date specified in lieu of existing requirements; however, the new or revised requirements in this document shall be met by no later than the applicable effective date specified herein and shall be followed thereafter.

PART 43—FOREIGN OR COASTWISE VOYAGE

Subpart 43.01—Administration

1. Subpart 43.01 is amended by inserting after § 43.01–30 a new § 43.01–32 reading as follows:

§ 43.01–32 Stability.

(a) The rules of this part necessarily assume that the nature and stowage of the cargo, ballast, etc., are such as to secure sufficient stability for the vessel.

(b) Having regard for the fact that certain vessels, such as those carrying all their cargo as deck cargo, may need to have the amount of cargo and resulting draft limited by stability considerations, the load line assignments of vessels, which are subject to the stability test requirements contained in § 31.10–30 in Subchapter D—Tank Vessels or in Subpart 93.05 in Subchapter I—Cargo and Miscellaneous Vessels of this chapter, shall in no case be deeper than permitted by the results of such tests.

(c) Load line assignments to vessels not subject to inspection will also be made subject to the results of a stability test if the design and service of the vessels are such as to indicate the need for a draft limitation based thereon.

(d) Load line assignments made to vessels before the results of stability tests are known shall be regarded as conditional and subject to verification by the Commandant.

(Sec. 2, 45 Stat. 1493, as amended, sec. 2, 49 Stat. 888, as amended; 46 U.S.C. 85a, 88a. Treasury Department Orders 120, July 31, 1950, 15 F.R. 6521; 167–48, October 19, 1962, 27 F.R. 10504)

Subpart 43.05—General Rules for Determining Maximum Load Lines of Merchant Vessels

2. The "note" following Subpart 43.05 heading and preceding § 43.05–1 is canceled. (The text is transferred to § 43.01–32(a).)

Subpart 43.40—Zones and Seasonal Areas and Miscellaneous Requirements

3. Section 43.40–10 is amended by designating in each of the described forms the "note" at the bottom of the first page of the form as "note 1" and by adding a new note 2 so that these notes in Forms A1, A2 and A3 (International Load Line Certificate), Form B (Load Line Certificate), and Forms C1, C2, C3, and C4 (Coastwise Load Line Certificate), read as follows:

§ 43.40–10 Forms of load line certificates.

INTERNATIONAL LOAD LINE CERTIFICATE

(FORM A1)

* * * * *

NOTES: (1) In accordance with the Load Line Regulations, the disk and lines must be permanently marked by center punch marks or cutting. Letters indicating the assigning authority are to be marked alongside the disk and above the center line. Periodic inspections are to be made at intervals of approximately twelve months.

(2) The load line assignment given by this certificate necessarily assumes that the nature and stowage of cargo, ballast, etc., are such as to secure sufficient stability for the vessel. Accordingly, if is the owner's responsibility to furnish the Master of the vessel with stability information and instructions when this is necessary to maintenance of sufficient stability.

* * * * *

INTERNATIONAL LOAD LINE CERTIFICATE

(FORM A2)

* * * * *

NOTES: (1) In accordance with the Load Line Regulations, the disk and lines must be permanently marked by center punch marks or cutting. Letters indicating the assigning authority are to be marked alongside the disk and above the center line. Periodic inspections are to be made at intervals of approximately twelve months.

(2) The load line assignment given by this certificate necessarily assumes that the nature and stowage of cargo, ballast, etc., are such as to secure sufficient stability for the vessel. Accordingly, it is the owner's responsibility to furnish the Master of the vessel with stability information and instructions when this is necessary to maintenance of sufficient stability.

* * * * *

INTERNATIONAL LOAD LINE CERTIFICATE

(FORM A3)

* * * * *

NOTES: (1) In accordance with the Load Line Regulations, the disk and lines must be permanently marked by center punch marks or cutting. (The diagram showing the timber load line marks is to be inserted above by the assigning authority.) Letters indicating the assigning authority are to be marked alongside the disk and above the center line. Periodic inspections are to be made at intervals of approximately twelve months.

(2) The load line assignment given by this certificate necessarily assumes that the nature and stowage of cargo, ballast, etc., are such as to secure sufficient stability for the vessel. Accordingly, it is the owner's responsibility to furnish the Master of the vessel with stability information and instructions when this is necessary to maintenance of sufficient stability.

* * * * *

LOAD LINE CERTIFICATE

(FORM B)

* * * * *

NOTES: (1) In accordance with the Load Line Regulations, the disk and lines must be permanently marked by center punch marks or cutting. Letters indicating the assigning authority are to be marked alongside the disk and above the center lines. This certificate is limited to 1 year and must be renewed annually.

(2) The load line assignment given by this certificate necessarily assumes that the nature and stowage of cargo, ballast, etc., are such as to secure sufficient stability for the vessel. Accordingly, it is the owner's responsibility to furnish the Master of the vessel with stability information and instructions when this is necessary to maintenance of sufficient stability.

* * * * *

COASTWISE LOAD LINE CERTIFICATE

(FORM C1)

* * * * *

NOTES: (1) In accordance with the Load Line Regulations, the disk and lines must be permanently marked by center punch marks or cutting. Letters indicating the assigning authority are to be marked alongside the disk and above the center line. Periodic inspections are to be made at intervals of approximately twelve months.

(2) The load line assignment given by this certificate necessarily assumes that the nature and stowage of cargo, ballast, etc., are such as to secure sufficient stability for the vessel. Accordingly, it is the owner's responsibility to furnish the Master of the vessel with stability information and instructions when this is necessary to maintenance of sufficient stability.

* * * * *

COASTWISE LOAD LINE CERTIFICATE

(FORM C2)

* * * * *

NOTES: (1) In accordance with the Load Line Regulations, the disk and lines must be permanently marked by center punch marks or cutting. Letters indicating the assigning authority are to be marked alongside the disk and above the center line. Periodic inspections are to be made at intervals of approximately twelve months.

(2) The load line assignment given by this certificate necessarily assumes that the nature and stowage of cargo, ballast, etc., are such as to secure sufficient stability for the vessel. Accordingly, it is the owner's responsibility to furnish the Master of the vessel with stability information and instructions when this is necessary to maintenance of sufficient stability.

* * * * *

COASTWISE LOAD LINE CERTIFICATE

(FORM C3)

* * * * *

NOTES: (1) In accordance with the Load Line Regulations, the disk and lines must be permanently marked by center punch marks or cutting. (The diagram showing the timber load line marks is to be inserted above by the assigning authority.) Letters indicating the assigning authority are to be marked alongside the disk and above the center line. Periodic inspections are to be made at intervals of approximately twelve months.

(2) The load line assignment given by this certificate necessarily assumes that the nature and stowage of cargo, ballast, etc., are such as to secure sufficient stability for the vessel. Accordingly, it is the owner's responsibility to furnish the Master of the vessel with stability information and instructions when this is necessary to maintenance of sufficient stability.

* * * * *

COASTWISE LOAD LINE CERTIFICATE

(FORM C4; APPLICABLE TO VESSELS ASSIGNED FREEBOARDS) ON THE BASIS OF 46 CFR 43.15-87, 43.15-90, AND/OR 43.30-75

* * * * *

NOTES: (1) In accordance with the Load Line Regulations, the disk and lines must be permanently marked by center punch marks or cutting. Letters indicating the assigning authority are to be marked alongside the disk and above the center line. Periodic inspections are to be made at intervals of approximately twelve months.

(2) The load line assignment given by this certificate necessarily assumes that the nature and stowage of cargo, ballast, etc., are such as to secure sufficient stability for the vessel. Accordingly, it is the owner's responsibility to furnish the Master of the vessel with stability information and instructions when this is necessary to maintenance of sufficient stability.

* * * * *

(Sec. 2, 45 Stat. 1493, as amended, sec. 2, 49 Stat. 888, as amended; 46 U.S.C. 85a, 88a. Treasury Department Orders 120, July 31, 1950, 15 F.R. 6521; 167-48, October 19, 1962, 27 F.R. 10504)

PART 44—VARIANCE FOR STEAM COLLIERS, BARGES, AND SELF-PROPELLED BARGES (WHEN ENGAGED IN SPECIAL SERVICES ON COASTWISE AND INTER-ISLAND VOYAGES)

Subpart 44.05—Rules of Assignment; Special Service

1. Section 44.05-25(a) is amended to read as follows:

§ 44.05-25 Freeboards.

(a) *General.* (1) When the assigning authority is satisfied that the requirement of this part as applicable to the type of vessel under consideration are complied with the freeboards will be computed as described in this section.

(2) In the assignment of freeboards under this part, the provisions of § 43.01-32 relating to stability are applicable.

* * * * *

(Sec. 2, 49 Stat. 888, as amended, 46 U.S.C. 88a. Treasury Department Orders 120, July 31, 1950, 15 F.R. 6521; 167-48; October 19, 1962, 27 F.R. 10504)

2. Section 44.05-35(a) is amended by designating in the described form the present "note" at the bottom of the first page of the form as "note 1" and by adding a note 2 so that these notes in the form read as follows:

§ 44.05-35 Form of load line certificate.

(a) * * *

LOAD LINE CERTIFICATE FOR A SPECIAL SERVICE COASTWISE OR INTER-ISLAND VOYAGE

* * * * *

NOTES: (1) In accordance with the Load Line Regulations, the disk or diamond and the lines must be permanently marked by center punch marks or cutting.

(2) The load line assignment given by this certificate necessarily assumes that the nature and stowage of cargo, ballast, etc., are such as to secure sufficient stability for the vessel. Accordingly, it is the owner's responsibility to furnish the Master of the vessel with stability information and instructions when this is necessary to maintenance of sufficient stability.

* * * * *

(Sec. 2, 49 Stat. 888, as amended, 46 U.S.C. 88a. Treasury Department Orders 120, July 31, 1950, 15 F.R. 6521; 167-48 October 19, 1962, 27 F.R. 10504)

PART 45—MERCHANT VESSELS WHEN ENGAGED IN A VOYAGE ON THE GREAT LAKES

Subpart 45.01—Administration

1. Subpart 45.01 is amended by inserting after § 45.01-20 a new § 45.01-22 reading as follows:

§ 45.01-22 Stability.

(a) The rules of this part necessarily assume that the nature and stowage of the cargo, ballast, etc., are such as to secure sufficient stability for the vessel.

(b) Having regard for the fact that certain vessels, such as those carrying all their cargo as deck cargo, may need to have the amount of cargo and resulting draft limited by stability considerations, the load line assignments of vessels, which are subject to the stability test requirements contained in § 31.10-30 in Subchapter D (Tank Vessels) or in Subpart 93.05 in Subchapter I (Cargo and Miscellaneous Vessels) of this chapter, shall in no case be deeper than permitted by the results of such tests.

(c) Load line assignments to vessels not subject to inspection will also be made subject to the results of a stability test if the design and service of the vessels are such as to indicate the need for a draft limitation based thereon.

(d) Load line assignments made to vessels before the results of stability

tests are known shall be regarded as conditional and subject to verification by the Commandant.

2. Section 45.01–75 is amended by revising paragraphs (a) and (c) to read as follows:

§ 45.01–75 Seasonal load lines.

(a) For load line purposes there is hereby established for the Great Lakes a winter, intermediate, summer, and for tankers and cargo vessels (see §§ 45.01–15 and 45.01–17) a midsummer season, and load lines applicable to each season are established by the regulations in this part. The winter season shall be that period from November 1 through April 15 of the next year, the intermediate seasons from April 16 through April 30, and from October 1 through October 31, and the summer season from May 1 through September 30. The midsummer season shall be the portion of the summer season from May 1 through September 15 which shall be applicable only in those cases where midsummer season load lines are permitted. (All dates are inclusive.)

* * * * *

(c) When engaged on voyages between the limits of Toledo Harbor and Port Huron, Michigan, cargo and tank vessels above 300 feet in length may load to their intermediate marks between October 1 and April 30, inclusive. Such vessels above 400 feet in length may load to their summer marks between September 16 and April 30, inclusive.

(Sec. 2, 49 Stat. 888, as amended, 46 U.S.C. 88a. Treasury Department Orders 120, July 31, 1950, 15 F.R. 6521; 167–48, October 19, 1962, 27 F.R. 10504)

Subpart 45.05—General Rules for Determining Maximum Load Lines of Merchant Vessels on the Great Lakes

3. The "note" following Subpart 45.05 heading and preceding § 45.05–1 is canceled. (The text is transferred to § 45.01–22(a).)

Subpart 45.20—Load Lines for Tankers

§ 45.20–75 [Canceled]

4. Section 45.20–75 *Fees* is canceled. (The text of this section is transferred to a new § 45.25–1.)

Subpart 45.25—Fees and Form of Certificate

5. Subpart 45.25 is amended by inserting a new § 45.25–1 (formerly § 45.20–75) reading as follows:

§ 45.25–1 Fees.

(a) Fees payable by owners will be charged for the assignment of load line, renewal of load line certificates, and annual load line inspection, in accordance with the regulations set forth in § 43.40–5 of this subchapter.

6. Section 45.25–5 is amended by adding a note "3" at the bottom of the first page of the described form which reads as follows:

§ 45.25–5 Form of load line certificate.

LOAD LINE CERTIFICATE FOR THE GREAT LAKES

* * * * *

NOTES: * * *

(3) The load line assignment given by this certificate necessarily assumes that the nature and stowage of cargo, ballast, etc., are such as to secure sufficient stability for the vessel. Accordingly, it is the owner's responsibility to furnish the Master of the vessel with stability information and instructions when this is necessary to maintenance of sufficient stability.

* * * * *

(Sec. 2, 49 Stat. 888, as amended, 46 U.S.C. 88a. Treasury Department Orders 120, July 31, 1950, 15 F.R. 6521; 167–48, October 19, 1962, 27 F.R. 10504)

PART 46—SUBDIVISION LOAD LINES FOR PASSENGER VESSELS

Subpart 46.10—Administration

Section 46.10–10 is amended by revising paragraph (b) to read as follows:

§ 46.10–10 Marks to indicate subdivision load lines.

* * * * *

(b) The Commandant, U.S. Coast Guard, shall determine the position of the subdivision load lines by the application of the requirements contained in this part and Parts 73 and 74 of Subchapter H (Passenger Vessels) of this chapter. The correct marking of subdivision load lines on passenger vessels shall be certified to by the American Bureau of Shipping as a classification society approved by Commandant for such purpose.

* * * * *

(Sec. 2, 45 Stat. 1493, as amended, sec. 2, 49 Stat. 888, as amended; 46 U.S.C. 85a, 88a. Interpret or apply R.S. 4490, as amended, sec. 3, 24 Stat. 129, as amended, 41 Stat. 305, as amended, sec. 5, 49 Stat. 1384, as amended, secs. 1, 2, 49 Stat. 1544, 1545, as amended, sec. 3, 54 Stat. 346, as amended, sec. 3, 68 Stat. 675; 46 U.S.C. 482, 483, 363, 369, 367, 1333, 50 U.S.C. 198; E.O. 10402, 17 F.R. 9917; 3 CFR, 1952 Supp. Treasury Department Orders 120, July 31, 1950, 15 F.R. 6521; 167–14, November 26, 1954, 19 F.R. 5026; 167–48, October 19, 1962, 27 F.R. 10504)

Dated: April 9, 1964.

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

[F.R. Doc. 64–3654; Filed, Apr. 13, 1964; 8:49 a.m.]

Proposed Rule Making

DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE

Food and Drug Administration

[21 CFR Part 17]

BREAD AND RELATED BAKERY PRODUCTS; DEFINITIONS AND STANDARDS OF IDENTITY

Notice of Proposal To Add Enzyme Bromelain to List of Optional Ingredients

Notice is given that Midwest Biochemical Corporation, Milwaukee, Wisconsin, has filed a petition proposing that the standard of identity for bread (21 CFR 17.1) be amended to provide for using the enzyme bromelain as an optional ingredient of bread. The basis for proposing this optional ingredient is that the use of bromelain will facilitate dough handling and speed up production in the bakery. Section 17.1(a)(6) lists malt products and other enzymatic preparations as optional ingredients of bread. It is proposed that this paragraph be amended by inserting therein the phrase "the food-grade enzyme preparation bromelain from pineapple plants" immediately preceding the phrase "or any combination of two or more of these."

Because of the cross-references to § 17.1 that are included in the standards for enriched bread, milk bread, raisin bread, and whole wheat bread (21 CFR 17.2, 17.3, 17.4, 17.5), adopting the amendment proposed would make bromelain an optional ingredient for each of these four kinds of bread.

Pursuant to the provisions of the Federal Food, Drug, and Cosmetic Act (secs. 401, 701, 52 Stat. 1046, 1055, as amended 70 Stat. 919, 72 Stat. 948; 21 U.S.C. 341, 371) and in accordance with the authority delegated to the Commissioner of Food and Drugs by the Secretary of Health, Education, and Welfare (21 CFR 2.90; 29 F.R. 471), all interested persons are invited to submit their views in writing regarding the proposal published herein. Such views and comments should be submitted, preferably in quintuplicate, addressed to the Hearing Clerk, Department of Health, Education, and Welfare, Room 5440, 330 Independence Avenue SW., Washington, D.C., 20201, within 30 days following the date of publication of this notice in the FEDERAL REGISTER.

Dated: April 3, 1964.

MALCOLM R. STEPHENS,
Assistant Commissioner for Regulations.

[F.R. Doc. 64-3632; Filed, Apr. 13, 1964; 8:48 a.m.]

DEPARTMENT OF LABOR

Wage and Hour Division

[29 CFR Part 541]

DRIVER SALESMEN

Postponement of Proceeding

The opportunity to present oral data, views, and argument concerning what changes, if any, should be made in the regulations established under section 13(a)(1) of the Fair Labor Standards Act of 1938 (29 U.S.C. 213(a)(1)) defining and delimiting the term "outside salesman" as it applies to driver salesmen is hereby postponed from April 27, 1964 (29 F.R. 3206) to June 15, 1964. The proceeding will commence at 10:00 a.m. in Conference Room B, Departmental Auditorium, Constitution Avenue, between 12th and 14th Streets NW., Washington, D.C.

Signed at Washington, D.C., this 8th day of April 1964.

CLARENCE T. LUNDQUIST,
Administrator.

[F.R. Doc. 64-3606; Filed, Apr. 13, 1964; 8:46 a.m.]

Notices

DEPARTMENT OF THE TREASURY

Office of the Secretary

[AA 643.3–m]

WHITE PORTLAND CEMENT FROM JAPAN

Determination of Sales at Less Than Fair Value

APRIL 7, 1964.

A complaint was received that white portland cement from Japan, manufactured by Nihon Cement Co., Ltd., Tokyo, Japan was being sold in the United States at less than fair value within the meaning of the Antidumping Act of 1921.

I hereby determine that white portland cement from Japan, manufactured by Nihon Cement Co., Ltd., Tokyo, Japan, is being or is likely to be, sold at less than fair value within the meaning of section 201(a) of the Antidumping Act, 1921, as amended, (19 U.S.C. 160(a)).

Statement of reasons. The information received indicated that shipments to the United States were outright purchase transactions between firms not related within the meaning of section 207 of the Antidumping Act.

The quantity sold in the home market for home consumption was sufficient to form a basis for comparison.

Accordingly, the appropriate comparison for fair value purposes is between purchase price and home market price.

Purchase price has been calculated by deducting ocean freight, insurance, and inland charges from the c.i.f. price to the United States.

Adjusted home market price was calculated by deducting from the weighted-average price for home consumption in Japan, inland freight and insurance. Adjustment was made for allowable technical services and advertising provided to home market customers, which were not incurred on sales for export to the United States. Allowance was made for bad debts incurred on sales in the home market and not experienced on sales for exportation to the United States. Further adjustment was made for differences in credit terms, interest charges and commissions between sales in the home market and for export to the United States. A deduction was made from home market price to reflect the greater cost of packing on sales in the home market.

Comparison of purchase price and adjusted home market price calculated as above reveals that purchase price is lower than adjusted home market price.

This determination and the statement of reasons therefor are published pursuant to section 201(c) of the Antidumping Act, 1921, as amended (19 U.S.C. 160(c)).

[SEAL] JAMES A. REED,
Assistant Secretary of the Treasury.

[F.R. Doc. 64-3653; Filed, Apr. 13, 1964; 8:49 a.m.]

DEPARTMENT OF THE INTERIOR

Bureau of Land Management

[Classification Order 102]

ALASKA

Recreation and Public Purposes; Cancellation

APRIL 7, 1964.

1. Pursuant to the authority delegated to me from Bureau Order 684, dated August 28, 1961 (26 F.R. 6215), as amended by the Alaska State Director in Delegation of Authority (F.R. Doc. 64-2127) dated March 4, 1964, I hereby cancel Recreation and Public Purpose Classification Order 102 covering lands described as follows:

FIELDING LAKE SMALL TRACT UNITS

U.S. SURVEY 3299

Tract 1—Lots 1 to 4 inclusive;
Tract 2—Lots 5 to 15 inclusive;
Tract 3—Lots 16 to 30 inclusive;
Tract 4—Lots 31 and 32.

Containing 157.78 acres.

2. Most of the subject lands have been patented, leased or withdrawn. Upon cancellation of this order those vacant unappropriated lands present will be subject to a blanket selection filed by the State of Alaska under the Act of July 7, 1958.

3. This cancellation shall take effect immediately.

ROSS A. YOUNGBLOOD,
District Manager.

[F.R. Doc. 64-3617; Filed, Apr. 13, 1964; 8:47 a.m.]

Office of the Secretary

WILLIAM A. ALEXANDER

Statement of Changes in Financial Interests

In accordance with the requirements of section 710(b)(6) of the Defense Production Act of 1950, as amended, and Executive Order 10647 of November 28, 1955, the following changes have taken place in my financial interests during the past six months:

(1) None.
(2) None.
(3) None.
(4) None.

This statement is made as of March 24, 1964.

Dated: March 24, 1964.

WILLIAM A. ALEXANDER.

[F.R. Doc. 64-3618; Filed, Apr. 13, 1964; 8:47 a.m.]

MARK V. BURLINGAME

Statement of Changes in Financial Interests

In accordance with the requirements of section 710(b)(6) of the Defense Production Act of 1950, as amended, and Executive Order 10647 of November 28, 1955, the following changes have taken place in my financial interests during the past six months:

(1) None.
(2) Add: Montgomery Ward & Co.
(3) None.
(4) None.

This statement is made as of March 31, 1964.

Dated: March 31, 1964.

MARK V. BURLINGAME.

[F.R. Doc. 64-3619; Filed, Apr. 13, 1964; 8:47 a.m.]

ALEXANDER S. CHAMBERLAIN

Statement of Changes in Financial Interests

In accordance with the requirements of section 710(b)(6) of the Defense Production Act of 1950, as amended, and Executive Order 10647 of November 28, 1955, the following changes have taken place in my financial interests during the past six months:

(1) None.
(2) None.
(3) None.
(4) None.

This statement is made as of March 30, 1964.

Dated: March 30, 1964.

ALEXANDER S. CHAMBERLAIN.

[F.R. Doc. 64-3620; Filed, Apr. 13, 1964; 8:47 a.m.]

LOWELL E. HUNT

Statement of Changes in Financial Interests

In accordance with the requirements of section 710(b)(6) of the Defense Production Act of 1950, as amended, and Executive Order 10647 of November 28, 1955, the following changes have taken place in my financial interests during the past six months:

(1) None.
(2) None.
(3) None.
(4) None.

This statement is made as of March 27, 1964.

Dated: March 27, 1964.

LOWELL E. HUNT.

[F.R. Doc. 64-3621; Filed, Apr. 13, 1964; 8:47 a.m.]

LAYTON E. KINCANNON

Statement of Changes in Financial Interests

In accordance with the requirements of section 710(b)(6) of the Defense Production Act of 1950, as amended, and Executive Order 10647 of November 28,

1955, the following changes have taken place in my financial interests during the past six months:

(1) None.
(2)
American Cement Corporation.
American Hospital Supply Company.
American Rubber & Plastic.
A. J. Armstrong Company.
Bankers Life Insurance Company.
Basic Incorporated.
Becton Dickinson Company.
Berkey Photo, Inc.
Business Capital.
Cont. Mortgage Inv. Sh. BI.
Devoe & Raynolds Company.
Dresser Industries.
Electronic Specialty.
Great American Corporation.
Halliburton Company.
Hamilton National Life Insurance Co.
Hawley Products Company.
Howard Johnson Company.
Marathon Oil Company.
McWood Corporation.
Microwave Assoc., Inc.
N.Y. Chicago, St. Louis.
Outboard Jet, Inc.
Printing Corp. of America.
Rock Island Refining Corporation.
Singer, Inc.
Standard Oil of Indiana.
Standard Oil of New Jersey.
Welch Scientific Company.
Singer, Inc.; bought.
Friden, Inc.; sold.
Helene Curtis Indust.; sold.
Hurletron, Inc.; sold.
Perini Corp.; sold.
Pneumodynamics Corp.; sold.
Ross Gear and Tool; sold.
(3) None.
(4) None.

This statement is made as of March 30, 1964.

Dated: March 30, 1964.

L. E. KINCANNON.

[F.R. Doc. 64-3622; Filed, Apr. 13, 1964; 8:47 a.m.]

JAMES S. BROADDUS

Statement of Changes in Financial Interests

In accordance with the requirements of section 710(b)(6) of the Defense Production Act of 1950, as amended, and Executive Order 10647 of November 28, 1955, the following changes have taken place in my financial interests during the past six months:

(1) None.
(2) None.
(3) None.
(4) None.

This statement is made as of March 25, 1964.

Dated: March 25, 1964.

JAMES S. BROADDUS.

[F.R. Doc. 64-3623; Filed, Apr. 13, 1964; 8:47 a.m.]

JOHN W. HIERONYMUS

Statement of Changes in Financial Interests

In accordance with the requirements of section 710(b)(6) of the Defense Production Act of 1950, as amended, and Executive Order 10647 of November 28, 1955, the following changes have taken place in my financial interests during the past six months:

Deletions: None.
Additions: None.

This statement is made as of March 25, 1964.

Dated: March 25, 1964.

JOHN W. HIERONYMUS.

[F.R. Doc. 64-3624; Filed, Apr. 13, 1964; 8:47 a.m.]

HOMER G. KEESLING

Statement of Changes in Financial Interests

In accordance with the requirements of section 710(b)(6) of the Defense Production Act of 1950, as amended, and Executive Order 10647 of November 28, 1955, the following changes have taken place in my financial interests during the past six months:

(1) Atlas Corporation; sold.
(2) Curtis-Wright Corporation; sold.
(3) Electric Bond and Share Company; sold.
(4) Niagara Mohawk Power Corporation; sold.
(5) The United Corporation; sold.
(6) United Gas Corporation; sold.

This statement is made as of April 1, 1964.

Dated: April 1, 1964.

HOMER G. KEESLING.

[F.R. Doc. 64-3625; Filed, Apr. 13, 1964; 8:47 a.m.]

EDWARD W. WELCH

Statement of Changes in Financial Interests

In accordance with the requirements of section 710(b)(6) of the Defense Production Act of 1950, as amended, and Executive Order 10647 of November 28, 1955, the following changes have taken place in my financial interests during the past six months:

My entire financial estate and assets consist of: U.S. Government Bonds (E, H, and K) Treasury Notes, bank deposits, and real estate, consisting of homestead (unincumbered), and miscellaneous personal property.
Deletions: None.
Additions: None—except deposits from interest bearing securities.

This statement is made as of March 26, 1964.

Dated: At Janesville, Wisconsin, March 26, 1964.

EDWARD W. WELCH.

[F.R. Doc. 64-3626; Filed, Apr. 13, 1964; 8:47 a.m.]

EDWARD F. ZIEGLER

Statement of Changes in Financial Interests

In accordance with the requirements of section 710(b)(6) of the Defense Production Act of 1950, as amended, and Executive Order 10647 of November 28, 1955, the following changes have taken place in my financial interests during the past six months:

(1) None.
(2) None.
(3) None.
(4) None.

This statement is made as of March 25, 1964.

Dated: March 25, 1964.

EDWARD F. ZIEGLER.

[F.R. Doc. 64-3627; Filed, Apr. 13, 1964; 8:47 a.m.]

DEPARTMENT OF COMMERCE

Maritime Administration

[Report No. 29]

LIST OF FREE WORLD AND POLISH FLAG VESSELS ARRIVING IN CUBA SINCE JANUARY 1, 1963

SECTION 1. The Maritime Administration is making available to the appropriate Departments the following list of vessels which have arrived in Cuba since January 1, 1963, based on information received through April 3, 1964, exclusive of those vessels that called at Cuba on United States Government-approved noncommercial voyages and those listed in section 2. Pursuant to established United States Government policy, the listed vessels are ineligible to carry United States Government-financed cargoes from the United States.

FLAG OF REGISTRY, NAME OF SHIP	*Gross tonnage*
Total—all flags (203 ships)	1,506,032
British (69 ships)	568,759
*Amalia	7,189
Ardgem	6,981
Ardmore	4,664
Ardrowan	7,300
Ardsirod	7,025
Arlington Court (now Southgate—British flag)	9,662
Athelcrown (Tanker)	11,149
Athelduke (Tanker)	9,089
Athelmere (Tanker)	7,524
Athelmonarch (Tanker)	11,182
Athelsultan (Tanker)	9,149
Avisfaith	7,868
Baxtergate	8,813
Beech Hill	7,150
Cedar Hill	7,156
Chipbee	7,271
**Cosmo Trader (trip to Cuba under ex-name, Ivy Fair—British flag).	
Dairen	4,939
Denmark Hill	7,150
East Breeze	8,708
*Elm Hill	7,125
Fir Hill	7,119
Grosvenor Mariner	7,026
Hazelmoor	7,907
Hemisphere	8,718
Ho Fung	7,121
Inchstaffa	5,255
**Ivy Fair (now Cosmo Trader—British flag)	7,201

*Added to Report No. 28 appearing in the FEDERAL REGISTER issue of March 31, 1964.

**Ships appearing on the list that have been scrapped or have had changes in name and/or flags of registry.

FLAG OF REGISTRY AND NAME OF SHIP—Con.

British—Continued	Gross tonnage
Kinross	5,388
Kirriemoor	5,923
Linkmoor	8,236
London Glory (Tanker)	10,081
London Harmony (Tanker)	13,157
London Majesty (Tanker)	12,132
London Pride (Tanker)	10,776
London Spirit (Tanker)	10,176
London Splendour (Tanker)	16,195
London Valour (Tanker)	16,268
Lord Gladstone	11,299
Maratha Enterprise	7,166
Mulberry Hill	7,121
*Muswell Hill	7,131
Nancy Dee	6,597
Newgate	6,743
Newhill	7,855
Newlane	7,043
Oak Hill	7,139
Oceantramp	6,185
Oceantravel	10,477
Overseas Explorer (Tanker)	16,267
Overseas Pioneer (Tanker)	16,267
Redbrook	7,388
Ruthy Ann	7,361
Santa Granda	7,229
Sea Coral	10,421
Shienfoon	7,127
*Shun Fung	7,148
**Southgate (trip to Cuba under ex-name, Arlington Court—British flag).	
Stanwear	8,108
Streatham Hill	7,130
*Sudbury Hill	7,140
Suva Breeze	4,970
Sycamore Hill	7,124
Thames Breeze	7,878
**Timios Stavros (previous trips to Cuba under Greek flag).	
Vercharmian	7,265
Vergmont	7,381
West Breeze	8,718
Yungfutary	5,388
Yunglutaton	5,414
Zela M	7,237
Greek (44 ships)	346,103
Agios Therapon	5,617
Akastos	7,331
Aldebaran (Tanker)	12,897
Alice	7,189
**Ambassade (sold Hongkong ship breakers)	8,600
Americana	7,104
Anacreon	7,359
Anatoli	7,178
Antonia	5,171
Apollon	9,744
Armathia	7,091
Athanassios K	7,216
Barbarino	7,084
Calliopi Michalos	7,249
Capetan Petros	7,291
**Embassy (broken up)	8,418
Everest	7,031
Flora M	7,244
Galini	7,266
Gloria	7,128
Irena	7,232
Istros II	7,275
Kapetan Kostis	5,032
Kyra Hariklia	6,888
Maria Theresa	7,245
Marigo	7,147
Maroudio	7,369
Mastro-Stelios II	7,282

*Added to Report No. 28 appearing in the FEDERAL REGISTER issue of March 31, 1964.

**Ships appearing on the list that have been scrapped or have had changes in name and/or flags of registry.

FLAG OF REGISTRY, NAME OF SHIP—Continued

Greek—Continued	Gross tonnage
**Nicolaos F. (trip to Cuba under ex-name, Nicolaos Frangistas—Greek flag).	
Nicolaos Frangistas (now Nicolaos F.—Greek flag)	7,199
North Empress	10,904
North Queen	9,341
**Pamit (now Christos—Lebanese flag)	3,929
Pantanassa	7,131
Paxoi	7,144
Penelope	6,712
Perseus (Tanker)	15,852
**Plate Trader (trip to Cuba under ex-name, Stylianos N. Vlassopulos—Greek flag).	
**Presvia (broken up)	10,820
Propontis	7,128
Redestos	5,911
**Seirios (sold Japanese ship breakers)	7,239
Sirius (Tanker)	16,241
Stylianos N. Vlassopulos (now Plate Trader—Greek flag)	7,244
**Timios Stavros (now British flag).	
Tina	7,362
Western Trader	9,268
Lebanese (46 ships)	306,508
Aiolos II	7,256
Ais Giannis	6,997
Akamas	7,285
Alaska	6,989
Anthas	7,044
Antonis	6,259
Ares	4,557
Areti	7,176
Aristefs	6,995
Astir	5,324
Athamas	4,729
Carnation	4,884
**Christos (trip to Cuba under ex-name, Pamit—Greek flag).	
Claire	5,411
Cris	6,032
Dimos	7,187
Free Trader	7,067
Giorgos Tsakiroglou	7,240
Granikos	7,282
Ilena	5,925
Ioannis Aspiotis	7,297
Kalliopi D. Lemos	5,103
Leftric	7,176
Malou	7,145
Mantric	7,255
*Marichristina	7,124
Mersinidi	6,782
Mousse	6,984
Noelle	7,251
Noemi	7,070
Olga	7,199
Panagos	7,133
Parmarina	6,721
Razani (broken up)	7,253
Rio	7,194
St. Anthony	5,349
St. Nicolas	7,165
San John	5,172
San Spyridon	7,260
Stevo	7,066
Tertric	7,045
Theologos	6,529
Toula	4,561
Vassiliki	7,192
Vastric	6,453
Vergolivada	6,339
Yanxilas	10,051
Italian (6 ships)	49,985
Achille	6,950
Airone	6,969

FLAG OF REGISTRY, NAME OF SHIP—Continued

Italian—Continued	Gross tonnage
Aspromonte	7,154
Nazareno	7,173
San Nicola (Tanker)	12,461
San Lucia	9,278
Polish (12 ships)	80,586
Baltyk	6,963
Bialystok	7,173
Bytom	5,967
Chopin	6,987
Chorzow	7,237
Huta Florian	7,258
Huta Labedy	7,221
Huta Ostrowiec	7,175
Kopalnia Miechowice	7,223
Kopalnia Siemianowice	7,165
Kopalnia Wujek	7,033
Piast	3,184
Yugoslav (6 ships)	42,801
Bar	7,233
Cavtat	7,266
Cetinje	7,200
Dugi Otok	6,997
Promina	6,960
Trebisnjica (wrecked)	7,145
Spanish (5 ships)	8,159
Castillo Ampudia	3,566
Escorpion	999
Sierra Andia	1,596
Sierra Madre	999
Sierra Maria	999
Norwegian (4 ships)	34,503
Lovdal (Tanker)	12,764
Ole Bratt	5,252
Polyclipper (Tanker)	11,737
**Tine (now Jezreel—Panamanian flag)	4,750
French (4 ships)	10,028
Circe	2,874
Enee	1,232
**Guinee (now Comfort, Chinese "Formosa" flag)	3,048
Nelee	2,874
Moroccan (4 ships)	32,614
Atlas	10,392
Banora	3,082
Mauritanie	10,392
Toubkal	8,748
Swedish (2 ships)	14,295
**Atlantic Friend (now Atlantic Venture—Liberian flag)	7,805
Dagmar	6,490
Finnish (1 ship):	
Valny (Tanker)	11,691
Chinese (Formosa):	
**Comfort (trip to Cuba under ex-name, Guinee—French flag).	
Liberian:	
**Atlantic Venture (trip to Cuba under ex-name, Atlantic Friend—Swedish flag).	
Panamanian:	
**Jezreel (trip to Cuba under ex-name, Tine—Norwegian flag).	

SEC. 2. In accordance with approved procedures, the vessels listed below which called at Cuba after January 1, 1963,

have reacquired eligibility to carry United States Government-financed cargoes from the United States by virtue of the persons who control the vessels having given satisfactory certification and assurance

(a) That such vessels will not, thenceforth, be employed in the Cuba trade so long as it remains the policy of the United States Government to discourage such trade; and

(b) That no other vessels under their control will thenceforth be employed in the Cuba trade, except as provided in paragraph (c); and

(c) That vessels under their control which are covered by contractual obligations, including charters, entered into prior to December 16, 1963, requiring their employment in the Cuba trade shall be withdrawn from such trade at the earliest opportunity consistent with such contractual obligations.

FLAG OF REGISTRY AND NAME OF SHIP

a. Since last reports:

British (3 ships):	Gross tonnage
London Prestige (Tanker)	16,194
Silverforce (now Jalagourl—Indian flag)	8,058
Silverlake (now Jalaganga—Indian flag)	8,058

b. Previous reports:

Flag of registry:	Number of ships
British	6
Danish	1
German (West)	1
Greek	14
Italian	4
Japanese	1
Norwegian	2

SEC. 3. The ships listed in Sections 1 and 2 have made the following number of trips to Cuba since January 1, 1963, based on information received through April 3, 1964:

Flag of registry	Number of trips										
	1963							1964			
	Jan.–June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Total
British	66	14	11	8	10	12	12	15	7	17	172
Greek	55	17	7	8	8	2	2	1	5	2	107
Lebanese	28	8	3	4	10	5	6	6	3	8	81
Norwegian	9	1	2	1	-------	-------	1	2	1	-------	17
Italian	10	2	2	-------	1	1	-------	1	-------	-------	17
Yugoslav	6	1	1	2	-------	2	-------	1	1	1	15
Spanish	2	1	1	1	-------	1	2	-------	3	-------	11
Danish	1	-------	-------	-------	-------	-------	-------	-------	-------	-------	1
Finnish	1	-------	-------	-------	-------	-------	-------	-------	-------	-------	1
French	-------	-------	-------	5	1	-------	2	-------	-------	-------	8
German (West)	1	-------	-------	-------	-------	-------	-------	-------	-------	-------	1
Japanese	1	-------	-------	-------	-------	-------	-------	-------	-------	-------	1
Moroccan	2	1	1	1	2	1	1	-------	2	-------	11
Swedish	2	-------	1	-------	-------	-------	-------	-------	-------	-------	3
Subtotal	184	45	29	30	32	24	26	26	22	28	446
Polish	10	1	1	-------	2	3	1	1	3	1	23
Grand total	194	46	30	30	34	27	27	27	25	29	469

NOTE: Trip totals in this section exceed ship totals in sections 1 and 2 because some of the ships made more than one trip to Cuba.

Dated: April 7, 1964.

J. W. GULICK,
Deputy Maritime Administrator.

[F.R. Doc. 64-3686; Field, Apr. 13, 1964; 8:50 a.m.]

VALUATION OF VESSELS FOR EXCHANGE OF C4 TROOPSHIPS

Further Statement of Previously Announced Policy

The Acting Maritime Administrator on January 30, 1964, assigned 18 C4 troopships in the reserve fleet to seven of the eighteen applicants who offered to exchange certain of their ships for them under the Ship Exchange Act (Public Law 86-575). The notice of assignment published in the FEDERAL REGISTER on February 1, 1964 (29 F.R. 1665, 1667) contained the following statement regarding the valuation of the ships:

The Ship Exchange Act provides for the fair and reasonable value of the traded-in and the traded-out vessels to be determined as of the date of the exchange pursuant to section 510(d) of the Merchant Marine Act, 1936, as amended, which is concerned with the determination of the value of an obsolete vessel traded-in for an allowance of credit on the purchase price of a new vessel. Section 510(d) provides that the trade-in allowance of an obsolete vessel—

shall be the fair and reasonable value of such vessel as determined by the [Maritime Administrator].

In making that determination, the Maritime Administrator is required to consider the scrap value, the depreciated value, and the market value in the domestic and world markets. The Ship Exchange Act provides that in determining the "fair and reasonable value" of vessels to be exchanged there shall also be considered the cost of placing the vessel in class with respect to hull and machinery, and with respect to any traded-out vessels of the military type, the cost of reconverting and restoring such vessels for normal operation in commercial service.

Consistent with the valuation requirements of the Ship Exchange Act, and the legislative history of that Act, the Maritime Administrator has determined, and has approved as a matter of policy because of the military type of ship involved in these particular exchanges, that the domestic market value of the traded-in and traded-out vessels, "as is, where is", will represent the "fair and reasonable value" of such vessels in the absence of material unforeseen circumstances, and will be approved as such.

The valuation policy adopted for these exchanges takes into account the views set out in House Committee Report No. 1097, 87th Congress, and is a departure from the general policy of averaging domestic and restricted world market values, and from the prior practice of valuing a military type C4 vessel by first determining the value of a standard type C4 merchant vessel in operation and deducting therefrom the cost of conversion.

Pursuant to the above statement, the Maritime Administration determined the values of each of the proposed trade-in and trade-out vessels, as stated in more detail below, and the applicants were advised of those values by letters dated February 11 and 18, 1964, which stated that the values would be considered valid for a period of 45 days.

Calmar Steamship Corporation advised the Maritime Administration by letter dated February 13, 1964, that the valuations determined for the vessels involved in its application were entirely acceptable.

Marine Navigation Company, Inc., by telegram dated March 22, 1964, and letter dated March 12, 1964, advised the Maritime Administration that it disagreed with the valuations determined by the Administration for the vessels involved in its application, and requested an extension of time until March 31, 1964, to present to the Administration the reasons for its disagreement.

The American Maritime Association by letter dated March 12, 1964, protested the valuation policy published in the FEDERAL REGISTER on February 1, 1964, on behalf of the following companies:

Blidberg Rothchild Co., Inc.
Bulk Transport Inc.
Calmar Steamship Corp.
Doric Shipping & Trading Corp.
Hudson Waterways Corp.
Marine Carriers Corp.
Oceanic Petroleum Carriers
Pacific Seafarers Inc.
Penn Marine Co.
Penn Navigation Co.
Penntrans Company
U.S. Shipping Corp.
Waterman Steamship Corp.

The Association asked to be allowed until April 14, 1964, to present a memorandum of law setting forth its position.

The Maritime Administrator on March 16, 1964, acknowledged receipt of the American Maritime Association's letter and by letter dated March 30, 1964, advised the Association that there would be forwarded to it within the next few days, a further statement of the Maritime Administration's previously announced policy with respect to the valuations and that the Association and others would be afforded 15 days thereafter to submit their comments, and that the Administrator would re-examine the policy in the light of the comments and render his decision thereon.

Calmar Steamship Corporation has advised the Maritime Administration that it has withdrawn from participation in the protest of the American Maritime Association and that it agrees with the interpretation of the statute and the valuation policy announced by the Acting Maritime Administrator in the FEDERAL REGISTER on February 1, 1964. Since

Calmar is desirous of proceeding promptly with its exchanges, the Maritime Administration is processing its application looking toward the execution of exchange contracts. (Contracts were executed on April 7, 1964.)

The Administration is willing to go forward with any other applicant who wishes to proceed in the same manner as Calmar.

The following is a further statement of the Maritime Administration's previously announced policy with respect to the valuation of the vessels involved in the proposed exchange of the 18 C4 troopships:

The statute. The Ship Exchange Act requires the "fair and reasonable value of the traded-in and traded-out vessels" to be determined as of the date of the exchange pursuant to section 510(d) of the Merchant Marine Act, 1936, which is concerned with the determination of the value of an obsolete vessel traded-in for an allowance of credit on the purchase price of a new vessel. Section 510(d) provides that the trade-in allowance of an obsolete vessel—

shall be the fair and reasonable value of such vessel as determined by the Commission.

In making that determination, the Commission (now Maritime Administrator [1]) is required to consider certain "factors", as follows:

(1) the scrap value of the obsolete vessel both in American and foreign markets;
(2) the depreciated value based on a twenty or twenty-five year life, whichever is applicable to the obsolete vessel; and
(3) the market value thereof for operation in the world trade or in the foreign or domestic trade of the United States.

The Ship Exchange Act provides that in determining the "fair and reasonable value" of vessels to be exchanged, the Maritime Administrator, in addition to the three factors listed above, shall also consider:

(4) the cost of placing the vessel in class with respect to hull and machinery; and
(5) with respect to any traded-out vessels of the military type, the cost of reconverting and restoring such vessels for normal operation in commercial service.

Prior policy. Prior to the release of the 18 C4 troopships by the Department of Defense for trade-out under the Ship Exchange Act, it had been the policy of the Maritime Administration to value a trade-out vessel of the military type for the purpose of the Exchange Program as if it were an operating commercial vessel of the standard C4 type, using as a starting value the average of the domestic market value and restricted world market value of such operating commercial vessel in sound condition and in class. From that average value of a standard type C4 operating merchant vessel there was deducted the actual cost of class and conversion work performed on the C4 troopship by the applicant.

To date, four military type C4 vessels have been traded-out under the Ship Exchange Program, the "Marine Raven" on March 7, 1961, to Winco Tankers, Inc., the "Marine Wolf" on June 13, 1961, to Globe Waterways Corporation, and the "Marine Fox" and "Marine Panther" on August 29, 1961, to A. H. Bull Steamship Co. In all four cases, the Maritime Administration valued the traded-out vessels as if they were operating vessels of the standard C4 type. The value was $886,250, representing the average of the domestic market value of $1,075,000 and the restricted world market value of $697,000 taking into account that the ships would be put in class, converted for commercial use, and have their special surveys passed.

From that value of $886,250 there were deducted the actual costs of class and conversion work. The following is a summary of the final results of each of the four exchange transactions that involved a military type C4 vessel:

	Unadjusted value of traded-out vessel	Cost of class and conversion work	Adjusted value of traded-out vessel	Adjusted value of traded-in vessel
Marine Raven	$886,250	$653,523	$232,727	$274,635
Marine Wolf	886,250	$935,861	−49,611	90,940
Marine Fox	886,250	$1,285,000 (at least)	−398,750	201,987
Marine Panther	886,250	$1,285,000 (at least)	−398,750	233,103

From the foregoing figures, it is apparent that the "value" of the traded-out vessel was in all four cases less than the "value" of the traded-in vessel, and, in the last three cases, the cost of class and conversion work when subtracted from the unadjusted value of the traded-out vessel reduced its "value" to less than zero, as indicated above by a minus "value."

When the value of the traded-out vessel is less than the value of the traded-in vessel (and approaches or goes below zero), it is to the applicant's advantage to trade-in the least valuable ship available that is eligible for trade-in, because he obtains the traded-out vessel without any cash payment to the Government and his "cost" of the traded-out ship, "as is, where is", is the same as the value of the ship traded-in.

The estimated values of the ships proposed to be traded-in by the applicants for the 18 military type C4 vessels, as shown by the pending applications, vary from the scrap value of a vessel to the domestic market value of a C–3 type vessel in operating condition. If the prior valuation policy and procedure were applied to the 18 military type C4 vessels, the ultimate value of each vessel would approximate zero, and the applicants trading in the least valuable ships would gain a windfall over the applicants trading in ships having substantial value. Moreover, it is apparent from the values of the ships proposed to be traded-in by the applicants that in their opinion the military type C4 vessels in "as is, where is" condition have substantial value to the applicants for the purpose of converting them to operating vessels.

Legislative history of Ship Exchange Act. The legislative history of the Ship Exchange Act, shows that the Congress intended to grant broad discretion to the Maritime Administrator to determine the fair and reasonable value of vessels for the Exchange Program, and that in valuing a military type vessel the Maritime Administrator is not required to first value an operating commercial type C4 vessel and subtract from that value the estimated cost of converting the vessel to a standard type C4 merchant vessel, or the actual costs incurred by the applicant to convert the vessel to a specialized type C4 vessel.

A summary of pertinent portions of the legislative history upon which that conclusions is based is set forth at the end of the text of this statement. From that summary, it appears that Congressman Mailliard and Deputy Maritime Administrator Ford agreed at the hearings on H.R. 8890 (which became the Ship Exchange Act) that the provision requiring that consideration be given to the cost of converting a military type ship was not "an absolute requirement" but was intended to give the Secretary of Commerce "a good deal of discretion" so that he could "reduce the fair and reasonable value on account of reconverting or restoring the vessel" where it "would be highly desirable from the public interest point of view" to do so because otherwise "you would not get the ship upgraded."

LEGISLATIVE HISTORY OF SHIP EXCHANGE ACT

The legislative history of the Ship Exchange Act shows that the Under Secretary of Commerce recommended that the bill (S. 2618) should be amended by deleting the provision which requires that in determining the value of vessels of the military type consideration should be given to the cost of conversion. (In letter dated February 19, 1960 to Senate Committee on Interstate and Foreign Commerce, Hearings before the Senate Merchant Marine and Fisheries Subcommittee on S. 2618, 86th Congress, p. 50.) Maritime Administrator Morse and Mr. Burchill testified at the hearing before the Senate Subcommittee that the purpose of the proposed amendment was to prevent Maritime from taking into consideration the cost of converting military type ships to freighters. (See Senate Subcommittee Hearings pp. 39–40.) Industry representatives opposed the amendment, and stated that it would make it almost impossible, as a practical matter, for them to exchange operating vessels for Reserve Fleet vessels of the military type. (See Senate Subcommittee Hearings, p. 85.)

At the hearings before the House Committee on Merchant Marine and Fisheries on H.R. 8890, 86th Congress, Deputy Maritime Administrator Ford testified that Maritime did not think the conversion costs should be taken into consideration at all. (House Committee Hearings, pp. 7, 9–11.) However, Admiral Ford did "backtrack" on that point to some extent (House Committee Hearings,

[1] See: Sections 201 and 202 of Reorganization Plan No. 7 of 1961, effective August 12, 1961, 26 F.R. 7315, 75 Stat. 840, 46 USCA 1111n; and section 3 of Department of Commerce Order No. 117 (Revised) April 17, 1962, 27 F.R. 3637.

p. 12) and finally agreed that since the provision permitted the Secretary of Commerce to "consider" conversion costs and was not "an absolute requirement", it gave the Secretary of Commerce "a good deal of discretion."

The following comments of Congressman Mailliard and Admiral Ford throw a great deal of light on the intended meaning of the provision (Hearings, p. 14):

"Mr. Mailliard. Pursuing the line that Mr. Drewry was discussing with you with particular reference to your first suggested amendment, just trying to look at the problem from the point of view of the public interest, would you not be better off to leave that language on page 2, paragraph 3, as it is, because it seems to me that any danger of disadvantage to the Government is pretty well protected by your second recommended amendment? In other words, you cannot finagle around here and end up by the Government paying somebody to upgrade his ships if we put in amendment B as you suggest but *I could visualize a situation where it would be highly desirable from the public interest point of view to reduce the fair and reasonable value on account of the cost of reconverting or restoring the vessel.*

"I can see where it would be definitely in the public interest to have a vessel which might be, in effect, obsolete and, as long as it did not require the Government to pay somebody for upgrading his fleet, but for that allowance we might end up with a much better ship and it would not actually cost the Government anything. It might reduce the amount of payment that you would receive on account of the upgrading.

"On the other hand, I could visualize the situation where *either you would reduce that amount or you would not get the ship upgraded.*

"Admiral Ford. I think that is true, Mr. Mailliard, particularly since it states that *it will be considered rather than make it an absolute requirement.*

"Mr. Mailliard. *I would think this wording leaves a good deal of discretion with the Secretary of Commerce* and, if we amend it by striking all after the word 'machinery,' you have tied him down where he may not be able to make a good deal for the Government. Do you think that is true?

"Admiral Ford. I think, generally, that is true.

"Mr. Mailliard. That is all." (Italics added.)

The bill was passed without the deletion of of the provision.

Bull's application—Boykin Bill. While the application of A. H. Bull Steamship Co. for two military type C4 vessels was pending before the Maritime Administration, the Department of Defense advised the Administration on April 11, 1961, that no more military type C4 vessels would be released for trade-out. As a result, it became apparent that Sword Line, Inc., a subsidiary of McLean Industries, would not be able to acquire two military type C4 vessels for which it had applied. Sword Line wired the Administration on July 20, 1961, that it would trade-in two tankers at their scrap value in exchange for the two military type C4 vessels for which Bull had applied and would pay the full price of $886,250 for them without deduction for the costs of conversion and class work.

On August 10, 1961, Congressman Boykin introduced H.R. 8632 which, if passed, would have deleted the provision in the Ship Exchange Act that requires the Secretary to consider the cost of conversion in valuing a military type vessel. (A summary of the pertinent parts of the legislative history of the Boykin bill are included in the summary set forth at the end of the text of this statement.

The Boykin bill passed the House on September 6, 1961, but was not passed by the Senate. Nevertheless, the testimony given at the hearings held by the House Merchant Marine and Fisheries Committee on the bill on August 15–17, 1961, and the report of that Committee on the bill clearly show that the Committee looked with disfavor on the old valuation policy of the Administration. Congressman Mailliard referred to it as producing "a value which is unrealistic on the existing market" and resulting in the applicant "getting something far below what it is worth." Congressman Pelly agreed with Congressman Mailliard and said that "there should be careful consideration given to the possibility of a windfall under any of these transactions". The House Committee's report contains the following significant comments:

After experience with section 510(1) since its enactment in 1960 your Committee has concluded on the basis of full hearings, including considered views expressed by representatives of the Department of Commerce, that the special allowance which might be made in connection with the cost of converting and restoring military-type vessels in the reserve fleet *is undesirable.*

Inasmuch as the so-called military-type vessels, consisting largely of the C4 class originally built as troop ships, are sought by vessel operators for conversion to completely new types of vessels for operation in commercial service, it appears that the application of the formula in the existing law *could result in undue burden on the Government and create inequities as between such operators* and other operators who exchange vessels for upgrading their fleets with conventional type vessels. (Italics added.)

LEGISLATIVE HISTORY OF BOYKIN BILL

On August 10, 1961, Congressman Boykin introduced H.R. 8632, 87th Congress, which, if passed, would have deleted the provision in the Ship Exchange Act that requires the Secretary of Commerce to consider the cost of conversion in valuing a traded-out vessel of the military type.

At the Hearings held on H.R. 8632, by the House Merchant Marine and Fisheries Committee, on August 5–17, 1961, Acting Maritime Administrator Stakem appeared and testified in favor of the bill, provided it was amended so as not to apply to applications filed prior to August 11, 1961. Mr. Stakem also explained in detail to the Committee how he intended to value the MARINE FOX (Transcript, pp. 56–59) and the MARINE PANTHER (Transcript, pp. 60–61).

Congressman Mailliard called attention to his discussion with Admiral Ford (quoted on pages 2–3 of this Exhibit) at the Hearings on the bill that became the Ship Exchange Act. Congressman Mailliard said that he understood that the Ship Exchange Act was not intended to require the Secretary of Commerce in all cases to make full allowance for the conversion costs, but that it was left up to his discretion as to whether by making an allowance it would directly serve the purpose of the Act. (Typewritten Transcript pp. 97–98.) Congressman Mailliard also observed (Transcript pp. 98–99):

"Mr. Mailliard. I tried yesterday in the moment I had to raise this question of the possibility of speculation. That is why I am curious to know whether the applicants are people who in fact will be upgrading operating fleets to serve the commerce of the United States or *whether this is looked on as a rather attractive means of, in effect, getting something far below what it is worth.*

"Has the Department ever considered the possibility of recommending an amendment to this Act that would permit, where there is more than one qualified applicant, that bids be taken?" (Italics added.)

Congressman Mailliard stated (Transcript, p. 100):

"Mr. Mailliard. It seems to me unless the discretionary power is in here as to placing a value on conversion, as to evaluating the putting in class and so forth, that we may have inadvertently missed an opportunity to get a little bit more revenue for the Treasury and disposed of these ships at a *value which is unrealistic on the existing market.*" (Italics added.)

Congressman Pelly commented as follows (Transcript, p. 104):

"First, I would like to associate myself with my colleague, Mr. Mailliard, in expressing my own feeling *that there should be careful consideration given to the possibilities of a windfall under any of these transactions* and assuring some way that any undue profit by a speculator would come back to the Government. I hope you will consider that." (Italics added.)

After the Hearings held on August 15–17, 1961, the House Committee on Merchant Marine and Fisheries reported the bill favorable, as amended, so as to apply only to future cases. Its report (House Report No. 1097, 87th Congress, on H.R. 8632) contains the following significant comments (p. 2):

"The bill would delete the above-quoted language, which requires taking into account the cost of converting Government-owned reserve fleet vessels of a military type to commercial vessels in connection with the valuation process under this vessel exchange legislation.

"After experience with section 510(1) since its enactment in 1960 your committee has concluded on the basis of full hearings, including considered views expressed by representatives of the Department of Commerce, *that the special allowance which might be made in connection with the cost of converting and restoring military-type vessels in the reserve fleet is undesirable.*

"Inasmuch as the so-called military-type vessels, consisting largely of the C–4 class originally built as troop ships, are sought by vessel operators for conversion to completely new types of vessels for operation in commercial service, *it appears that the application of the formula in the existing law could result in undue burden on the Government and create inequities as between such operators and other operators who exchange vessels for upgrading their fleets with conventional-type* vessels." (Italics added.)

The bill passed the House on September 6, 1961, but was not passed by the Senate.

Fair and reasonable value—"As is, Where is". In view of the foregoing, the Maritime Administration concluded that the valuation policy and procedure used in the past to value military type vessels traded-out under the Ship Exchange Act are not suitable for valuing the 18 military type C4 vessels released by the Defense Department, and that the present statutory provisions do not "require" the vessels to be valued as standard type C4 merchant vessels and the estimated cost of conversion deducted therefrom.

The Administration considered the pending applications for the 18 military type C4s as concrete evidence of the fact that the vessels "as is, where is" have market value as vessels suitable for conversion to operating merchant vessels that exceeds their scrap value. If the applicants are willing to trade-in vessels having substantial value for the C4 troop

ships "as is, where is", knowing that they will have to spend their own money to convert them, it is reasonable to assume that such applicants have placed a value on those ships, "as is, where is", at least equal to the value of the ship they propose to trade in, which takes into account the cost of conversion to the extent contemplated by the statute.

The Ship Exchange Act, provides for the values of the ships to be their "fair and reasonable value" as determined by the Administrator after considering the scrap value, depreciated value, market value in the domestic and world markets, and the cost of class and conversion work necessary in the vessels being valued. Black's Law Dictionary (4th Edition) contains the following definition on page 714:

"Fair and reasonable value." This phrase in a statute imposing a tax on property means the best price obtainable at a voluntary sale, to be paid at once in money, and excluding any additional amount that might be had were credit or terms allowed.

Applying this test, the fair and reasonable value of a military type C4 vessel in the Reserve Fleet would be the best cash price obtainable at a voluntary sale assuming that the Government put the vessels up for sale "as is, where is".

Values on the domestic market are generally higher than on the restricted world market, and since the transaction involves a "sale" of both the traded-in and traded-out vessels on the domestic market it is appropriate to use values current in that market to value both vessels. The costs of repairs and conversion work will be based on domestic prices, and the value of the vessels on an "as is, where is" basis will automatically give consideration to the cost of class and restoration work, to the extent required by the statute.

As the seller of ships from the reserve fleet in exchange transactions, the Government should not, in fairness to other American flag owners undersell the market. That would depress the market for the sale of ships by private American flag owners.

Policy. In view of the foregoing, the Maritime Administration determined, and approved as a matter of policy, that after considering the scrap value, the depreciated value, the market value in the domestic and world markets, and the cost of class and conversion work necessary on the vessel being valued, the domestic market value of the traded-in and traded-out vessels, "as is, where is", would represent the "fair and reasonable value" of such vessels, in the absence of material unforeseen circumstances, and would be approved as such for the vessels involved in the exchange of the 18 military type C4 vessels released by the Department of Defense for exchange.

Application of policy. The values of the individual ships as set forth in the letters to the applicants dated February 11 and 18, 1964, from the Chief, Office of Property and Supply were determined in accordance with the above policy as follows:

The C4 troop ships were determined to have "as is, where is" values on the domestic market assuming they were structurally sound, well preserved, and suitable for conversion for various commercial uses, as follows:

C4–S–A1	$400,000
C4–S–A3	$475,000
C4–S–B2	$550,000

These basic values were determined by the Maritime Administration after considering information indicating what a willing buyer would pay a willing seller for the vessels "as is, where is" for the purpose of converting them at his own expense for commercial operation under American flag. That information included appraisals of each of the three types of vessels made by independent private appraisers. The basic values listed above were adjusted by deducting from the appropriate base value the estimated cost of repairs necessary to make the ship being valued structurally sound and suitable for conversion for commercial use. The resulting value for each individual ship represents the "unadjusted fair and reasonable value" of the vessel, as defined in § 375.2(e)(i) of General Order 92 (46 CFR 375.2(e)(i), 27 F.R. 2011). Since the vessels were not dry docked before the estimates were made of the needed repairs, the "unadjusted" value will be "adjusted" after the exchange contract is executed and the vessel dry docked by deducting from the "unadjusted" value the estimated cost of "unknown" bottom damage as defined in § 375.2(f) of General Order 92 (46 CFR 375.2(f)).

The resulting values after adjustment will become the "as is, where is" value of the particular vessel on the domestic market as contemplated by the previously published valuation policy.

The proposed trade-in vessels of the applicants were individually valued on the basis of information indicating the price a willing buyer would pay a willing seller for the vessels assuming they were in sound condition and in class, and would be operated under American flag after they were purchased. That information included appraisals of individual types of vessels made by independent private appraisers. The resulting values represent the "unadjusted fair and reasonable value" of the vessels as defined in § 375.2(e)(i) of General Order 92 (46 CFR 375.2(e)(i)). Since the proposed trade-in vessels were not dry docked and surveyed before the values were released to the applicants, the values will be reduced after dry docking and survey by the cost of repairs necessary to place the vessel in class. The resulting values after adjustment will become the "as is, where is" values of the particular vessels on the domestic market as contemplated by the previously published valuation policy. Such values will be increased by the cost of deactivation and preparation of the vessels for lay up as provided in the Exchange Contracts.

Time for filing comments. All interested persons shall have 15 days from the date of publication of this notice in the FEDERAL REGISTER to submit written comments thereon. All such comments shall be submitted in triplicate to the Secretary, Maritime Administration, Washington, D.C., 20235.

After this statement was prepared, the written comments of the American Maritime Association dated April 1, 1964, were received by the Maritime Administration. Those comments have not been considered or taken into account in this statement, but will be considered by the Maritime Administrator along with any comments submitted pursuant to this notice.

Dated: April 9, 1964.

By order of the Maritime Administrator.

JAMES S. DAWSON, Jr.,
Secretary.

[F.R. Doc. 64-3659; Filed, Apr. 13, 1964; 8:49 a.m.]

Office of the Secretary

GEORGE E. HARDING

Statement of Changes in Financial Interests

In accordance with the requirements of section 710(b)(6) of the Defense Production Act of 1950, as amended, and Executive Order 10647 of November 28, 1955, the following changes have taken place in my financial interests as reported in the FEDERAL REGISTER during the past six months:

A. Deletions: No change.
B. Additions: No change.

This statement is made as of March 19, 1964.

Dated: March 19, 1964.

GEORGE E. HARDING.

[F.R. Doc. 64-3595; Filed, Apr. 13, 1964; 8:45 a.m.]

DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE

Food and Drug Administration

MINNESOTA MINING AND MANUFACTURING CO.

Notice of Filing of Petition Regarding Food Additives, Resinous and Polymeric Coatings

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 979) has been filed by Minnesota Mining and Manufacturing Company, 2501 Hudson Road, St. Paul 19, Minnesota, proposing that paragraph (b)(3)(viii)(*b*) of § 121.2514 *Resinous and polymeric coatings* be amended as follows:

1. By changing the introduction to read:

(*b*) Catalysts and cross-linking agents for epoxy resins:

2. By inserting alphabetically the following items:

Cyanoguanidine for use only in coatings subject to the provisions of paragraph (c)(3) or (4) of this section.

Isophthalyl dihydrazide for use only in coatings subject to the provisions of paragraph (c)(3) or (4) of this section.

Tri(dimethylaminomethyl) phenol and its salts, as listed in subdivision (xxii)(b) of this subparagraph, for use only in coatings subject to the provisions of paragraph (c) (3) or (4) of this section.

Dated: April 7, 1964.

MALCOLM R. STEPHENS,
Assistant Commissioner for Regulations.

[F.R. Doc. 64-3633; Filed, Apr. 13, 1964; 8:48 a.m.]

ROHM AND HAAS CO.

Notice of Filing of Petition Regarding Food Additives, Ion-Exchange Resins

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 1324) has been filed by Rohm and Haas Company, Washington Square, Philadelphia, Pennsylvania, proposing the issuance of a regulation to provide for the safe use of the following ion-exchange resins in the processing of food:

1. Completely hydrolyzed copolymers of methyl acrylate and divinylbenzene.

2. Completely hydrolyzed terpolymers of methyl acrylate, divinylbenzene, and acrylonitrile.

3. Sulfonated terpolymers of styrene, divinylbenzene, and not more than 2-mole percent of acrylonitrile or methyl acrylate.

Dated: April 3, 1964.

MALCOLM R. STEPHENS,
Assistant Commissioner for Regulations.

[F.R. Doc. 64-3634; Filed, Apr. 13, 1964; 8:48 a.m.]

Office of Education

FEDERAL FINANCIAL ASSISTANCE IN CONSTRUCTION OF NONCOMMERCIAL EDUCATIONAL TELEVISION BROADCAST FACILITIES

Applications Accepted for Filing

Notice is hereby given that effective with this publication the following described applications for Federal financial assistance in the construction of noncommercial educational television broadcast facilities are accepted for filing in accordance with 45 CFR 60.7:

Spokane School District No. 81, West 825 Trent Avenue, Spokane, Washington, File No. 61, for the establishment of a new noncommercial educational television broadcasting station on Channel 7, Spokane, Washington.

Detroit Educational Television Foundation, 5035 Woodward Avenue, Detroit, Michigan, 48202, File No. 62, to expand and improve the operation of the noncommercial educational television broadcasting station on Channel No. 56, Detroit, Michigan.

Any interested person may, pursuant to 45 CFR 60.8, within 30 calendar days from the date of this publication, file comments regarding the above applications with the Director, Educational Television Facilities Program, U.S. Office of Education, Washington, D.C., 20202.

(76 Stat. 64, 47 U.S.C. 390)

RAYMOND J. STANLEY,
Director, Educational Television Facilities Program, U.S. Office of Education.

[F.R. Doc. 64-3645; Filed, Apr. 13, 1964; 8:49 a.m.]

Office of the Secretary

STATEMENT OF ORGANIZATION AND DELEGATIONS OF AUTHORITY

Surplus Property Utilization Program

1. Section 2-248 of Part 2 of the Statement of Organization and Delegations of Authority is hereby amended to read as follows:

SEC. 2-248.10 *Organization.* The Division of Surplus Property Utilization, under the supervision of a Division Chief, consists of:

Office of the Chief.
Real Property Branch.
Personal Property Branch.
Regional Representatives, Surplus Property Utilization.

SEC. 2-248.20 *Chief, Division of Surplus Property Utilization.*

A. The Chief of the Division of Surplus Property Utilization, under the direction and supervision of the Director, Office of Field Administration, shall be responsible for:

1. Carrying out the functions, duties, and responsibilities vested in the Secretary of Health, Education, and Welfare by sections 203(j), 203(k) and 203(n) of the Federal Property and Administrative Services Act of 1949, as amended, and by Federal Civil Defense Administration (now the Office of Civil Defense, Department of the Army) Delegation 5 (21 F.R. 6721) as the same may be amended from time to time, in conformance with the rules, regulations, and circulars issued, and criteria established, by the Director of Civil Defense, Department of the Army, to the extent that they affect such functions, duties, and responsibilities (hereinafter called the Program) of the Secretary of Health, Education, and Welfare; and

2. The organization, integration, coordination, evaluation and direction of the Program.

B. In the absence or disability of the Chief, or in the event of a vacancy in the office, the Assistant Chief shall act for him. In the event of absence or disability of both the Chief and the Assistant Chief, the Assistant to Chief for Management Operations, the Chief of the Real Property Branch, the Chief of the Personal Property Branch, or as designated by the Director of Field Administration, shall serve as Acting Chief.

SEC. 2-248.30 *Division of Surplus Property Utilization.*

A. The Division of Surplus Property Utilization, in carrying out the functions, duties, and responsibilities of the Secretary as set forth in § 2-248.20A.1. above, shall:

1. Develop, with the approval of the Director of Field Administration, the policy and planning of all aspects of the Program;

2. Maintain liaison with the General Services Administration, and the Director of Civil Defense, Department of the Army, and other interested Federal and State agencies, instrumentalities, organizations, and representatives, in connection with all aspects of the Program;

3. Develop and promulgate, with the approval of the Director of Field Administration, instructions and procedures relative to the operation of the Program;

4. Prepare for submission by the Secretary to the Senate and to the House of Representatives the reports required to be made by section 203(o) of the Act.

SEC. 2-248.40 *Delegation of Authority.*

A. The Chief of the Division of Surplus Property Utilization is authorized to make determinations and allocations for educational, public health, and civil defense purposes as outlined by section 203(j) of the Act and Federal Civil Defense Administration (Director of Civil Defense, Department of the Army), Delegation 5, take such action as may be necessary in connection with the assignment, disposal, and utilization of surplus property for educational and public health purposes pursuant to section 203(k) of the Act, and enter into cooperative agreements pursuant to section 203(n) of the Act, except that any action which is required to be taken by the Secretary shall be prepared and submitted for the Secretary's approval.

2. Section 2-249 of Part 2 of the Statement or Organization and Delegations of Authority is hereby amended to read as follows:

SEC. 2-249.10 *Regional Directors.*

A. *Real property.* This delegation relates to the disposal and utilization of surplus real property and related personal property for educational and public health purposes, pursuant to section 203(k) of the Federal Property and Administrative Services Act of 1949, as amended. Each Regional Director, with respect to such property located within his jurisdiction, is authorized:

1. To execute deeds, contracts of sale, and all instruments incident or corollary to the transfer of land and improvements thereon where the acquisition and improvement cost of the property was $500,000 or less;

2. To execute instruments in modification of previous transfers where the acquisition and improvement cost of the land and improvements thereon involved in the modification action was $500,000 or less;

3. To execute all instruments with respect to land and improvements thereon where the acquisition and improvement cost exceeded $500,000, where the Division of Surplus Property Utilization specifically authorizes closing of the transaction by the Regional Office;

4. To execute all instruments relating to the transfer of improvements for removal and use away from the site, including improvements located outside his jurisdiction, but intended for removal to and use within his jurisdiction; and

5. To execute all modifying or retransfer instruments affecting improvements originally disposed of for removal and use away from the site.

B. *Personal property.* To act or designate a member of his staff (other than the Regional Representative) to act as reviewing officer to approve or disapprove determinations by the Regional Representative, to authorize State Agencies to abandon or destroy surplus personal property having a lot acquisition cost greater than $1,000.00.

SEC. 2-249.30 *Regional representatives—Personal property.*

A. In each region the representative of the program of donation of surplus personal property for educational, public health, and civil defense purposes contemplated by section 203(j) of the Federal Property and Administrative Services Act of 1949, as amended, and Federal Civil Defense Administration Delegation 5, is the Regional Representative.

B. Each Regional Representative, with respect to the allocation for donation for educational, public health, and civil defense purposes of surplus personal property located within his jurisdiction, is authorized:

1. To make determinations, consistent with the policies and procedures set forth in applicable regulations of the Department, concerning the usability of and need for surplus personal property by educational or health institutions and civil defense organizations;

2. To allocate surplus personal property and to take all actions necessary to accomplish donation or transfer of property so allocated, consistent with the policies and procedures set forth in applicable regulations of the Department;

3. To make determinations of eligibility of educational and public health donees to acquire donable property consistent with applicable regulations of the Department;

4. To designate individuals recommended by State Agencies as State representatives for the purpose of inspecting and screening surplus personal property; and

5. To execute all instruments, documents, and forms necessary to carry out, or incident to the exercise of, the foregoing authority.

C. Each Regional Representative, with respect to surplus personal property located within his jurisdiction, is authorized to allocate such property to any other regional jurisdiction and to take the actions set forth in B.2. above in connection with such out-of-region allocation.

D. Each Regional Representative, to whose jurisdiction surplus personal property has been allocated by another Regional Representative in exercise of the authority set forth in C. above, is authorized to take the action respecting such property set forth in B.2., B.3., and B.5. above.

E. Each Regional Representative, with respect to personal property located within his jurisdiction and in possession of State Agencies for subsequent donation for educational, public health, and civil defense purposes, is authorized:

1. To effect redistribution of usable and needed property to other State Agencies;

2. To authorize and execute instruments necessary to carry out cannibalization, secondary utilization, and reduction of acquisition cost of property consistent with policies and procedures set forth in applicable regulations of the Department;

3. To recommend to GSA for disposal, property excess to the needs of State Agencies; and

4. To authorize destruction or abandonment of property having a lot acquisition cost greater than $1,000, by a determination in writing that the property has no commercial value, subject, however, to approval of such determination by a reviewing officer before authorization to destroy or abandon is given to the State Agency.

F. Each Regional Representative, with respect to personal property located within his jurisdiction previously donated for educational and public health purposes, is authorized:

1. To make determinations and take actions appropriate thereto, consistent with the policies and procedures set forth in applicable regulations of the Department, concerning the utilization of such property, including retransfer and the enforcement of compliance with terms and conditions which may have been imposed on and which are currently applicable to such property;

2. To execute instruments necessary to carry out, or incident to the exercise of, the authority delegated in paragraph F.1.;

3. To recommend to GSA for disposal, property excess to the needs of donees, except boats over 50 feet in length and aircraft;

4. Incident to the exercise of the authority delegated in this paragraph, to request refunds or payments; and

5. Subject to the 30 day right of disapproval by GSA, to authorize and execute instruments necessary to carry out sales abrogations and release of restrictions, cannibalization, secondary utilization, reduction of acquisition cost, trade-ins, and destruction or abandonment of property in the custody of donees consistent with the policies and procedures set forth in applicable regulations of the Department.

G. The authority herein delegated, or any part hereof, may, with the concurrence of the Regional Director, be redelegated in writing by the Regional Representative to Assistant Regional Representative or to his other operating or administrative assistants.

H. Each Regional Representative, with respect to the States within the jurisdiction of his region, is authorized, consistent with the policies and procedures set forth in applicable regulations of the Department, to approve State plans of operation and amendments thereto submitted by State Agencies for Surplus Property: Provided, however, that such authority shall not include the authority to disapprove a State plan, in whole or in part.

I. Each Regional Representative, with respect to the States within the jurisdiction of his region, is authorized, consistent with the policies and procedures of the Department, to enter into cooperative agreements, under section 203(n) of the Act, with State Agencies for Surplus Property of such States, either individually or collectively.

Dated: April 7, 1964.

[SEAL] ANTHONY J. CELEBREZZE,
Secretary.

[F.R. Doc. 64-3636; Filed, Apr. 13, 1964; 8:48 a.m.]

ATOMIC ENERGY COMMISSION

[Docket No. 50-138]

CURTISS-WRIGHT CORP.

Notice of Proposed Issuance of Facility Export License

Please take notice that, unless within fifteen days after the publication of this notice in the FEDERAL REGISTER a request for a formal hearing is filed with the United States Atomic Energy Commission by the applicant or an intervener as provided by the Commission's rules of practice, 10 CFR Part 2, the Commission proposes to issue to Curtiss-Wright Corporation a facility export license on Form AEC-250 containing the authority set forth in the text below authorizing the export of the remaining parts of the 1000 kilowatt nuclear research reactor for the Thai Atomic Energy Commission for Peace, Bangkok, Thailand. Previous shipments were authorized under AEC Export License Nos. XR-33, XR-33-A and XR-33-B.

Pursuant to the Atomic Energy Act of 1954, as amended, and Title 10, Code of Federal Regulations, the Commission has found that:

1. The application complies with the requirements of the Atomic Energy Act of 1954, as amended, and the Commission's regulations set forth in Title 10, Chapter I, CFR;

2. The issuance of this license is within the scope of and is consistent with the terms of an Agreement for Cooperation between the Government of the United States and the Government of Thailand.

In its review of applications solely to authorize the export of production or utilization facilities, the Commission does not evaluate the health and safety characteristics of the subject facility.

A copy of the application, dated March 3, 1964, is on file in the AEC Public Document Room located at 1717 H Street NW., Washington, D.C.

Dated at Bethesda, Maryland, this 6th day of April 1964.

For the Atomic Energy Commission.

EBER R. PRICE,
Director, Division of State and Licensee Relations.

PROPOSED EXPORT LICENSE

Pursuant to the Atomic Energy Act of 1954 and the regulations of the U.S. Atomic Energy Commission issued pursuant thereto, and in reliance on statements and representations heretofore made, Curtiss-Wright Corporation, Rockefeller Center, 1271 Avenue of the Americas, New York 20, New York, is authorized to export the remaining parts of the 1000 kilowatt nuclear research reactor for the Thai Atomic Energy Commission for Peace, Bangkok, Thailand, subject to the terms and provisions herein. Previous shipments were authorized under AEC Export Licenses Nos. XR-33, XR-33-A and XR-33-B. The license to export extends to the licensee's duly authorized shipping agent.

Neither this license nor any right under this license shall be assigned or otherwise transferred in violation of the provisions of the Atomic Energy Act of 1954.

This license is subject to the right of recapture or control reserved by section 108 of the Atomic Energy Act of 1954, and to all of the other provisions of said Act, now or hereafter in effect and to all valid rules and regulations of the U.S. Atomic Energy Commission.

This license is effective as of the date of issuance and shall expire on December 31, 1964.

For the Atomic Energy Commission.

[F.R. Doc. 64-3641; Filed, Apr. 13, 1964; 8:49 a.m.]

VERY HIGHLY ENRICHED URANIUM

Addition to Schedule of Base Charges

1. The United States Atomic Energy Commission hereby gives notice of an addition to the schedule of base charges for enriched uranium published in the FEDERAL REGISTER on May 29, 1962 (27 F.R. 5006, as amended by 27 F.R. 5155).

2. The following entry is added at the end of Table 1:

Assay (weight fraction U-235):	*Base charge (per Kg U)*
0.96	$11,597.00
0.98	12,389.00

3. The second paragraph following Table 1 is revised to read as follows:

The inclusion above of assays of 0.94 weight fraction U-235 and above are for the purposes of interpolation and for establishment of a base charge for limited amounts of material available at an assay in that range. Inquiries concerning the availability of material at specific assays above 0.93 should be addressed to the AEC Material Leasing Officer at Oak Ridge, Tennessee.

4. This notice is effective immediately.

Dated at Germantown, Md., this 3d day of April 1964.

For the Atomic Energy Commission.

A. R. LUEDECKE,
General Manager.

[F.R. Doc. 64-3593; Filed, Apr. 13, 1964; 8:45 a.m.]

FEDERAL AVIATION AGENCY

[Agency Order 1100.79]

SELECTED EMPLOYEES

Delegation of Authority Relating to Conduct of Investigations

1. *Purpose.* The purpose of this order is to delegate to Federal Aviation Agency investigative employees assigned to Compliance and Security certain authority of the Administrator under Title III of the Federal Aviation Act of 1958, relating to the conduct of investigations. Selected employees have been issued special identifications for this purpose.

2. *Delegation.* Authority to receive evidence, examine witnesses and administer, but not compel, oaths or affirmations at any place within the jurisdiction of the United States in connection with investigations ordered to carry out functions of the Office of Compliance and Security is hereby delegated to each FAA employee who possesses an unexpired FAA Official Credential with his photograph, identifying him as a Special Agent and bearing the FAA seal. Redelegation is not authorized.

3. *Effective date.* This order is effective immediately.

Issued in Washington, D.C., on April 3, 1964.

N. E. HALABY,
Administrator.

[F.R. Doc. 64-3594; Filed, Apr. 13, 1964; 8:45 a.m.]

FEDERAL MARITIME COMMISSION

AMERICAN FORWARDING CO. ET AL.

Changes in Independent Ocean Freight Forwarder Applications

Notice is hereby given of changes in the following applications for independent ocean freight forwarder licenses issued pursuant to section 44, Shipping Act, 1916, (75 Stat. 522 and 46 U.S.C. 841(b)).

GRANDFATHER APPLICANTS

NAME AND ADDRESS

American Forwarding Co., No. 578, (Fred Van Dover, d/b/a), 69 Gold Street, New York, N.Y., revoked March 12, 1964.

Excelsior Shipping Co., No. 721, (Octacilio Gay, d/b/a), 33 Rector Street, New York, N.Y., 10006, revoked March 20, 1964.

Export Services Unlimited, No. 785, (Edmond J. Hingle, d/b/a), 730 Gravier Street, New Orleans, La., 70130, revoked March 5, 1964.

Florida Overseas Export Co., No. 497, (Juan J. Novales, d/b/a), 4509 Northwest Seventh Street, Miami, Fla., 33126, revoked March 10, 1964.

Jackson Co., Inc., Robert L., No. 674, 646 South Holgate Street, Seattle, Wash., revoked January 10, 1964.

Marturet Brokerage Corp., No. 823, Rincones Co., Inc., P.R. Jr., 37 Wall Street, New York, N.Y., 10005, revoked March 10, 1964.

Pendleton Shipping Co., No. 324, (Walker N. Pendleton, Jr., d/b/a), 1518-19 Healey Building, Atlanta 3, Ga., denied March 24, 1964.

Rolnick, Jack, No. 709, 1127 Willmohr Street, Brooklyn, N.Y., revoked March 4, 1964.

Notice is hereby given that the following applicants have filed with the Federal Maritime Commission, applications for licenses as independent ocean freight forwarders, pursuant to section 44(a) of the Shipping Act, 1916 (75 Stat. 522 and 46 U.S.C. 841(b)).

Persons knowing of any reason why any applicant should not receive a license are requested to communicate with the Director, Bureau of Domestic Regulation, Federal Maritime Commission, Washington, D.C., 20573. Protests received within 60 days from the date of publication of this notice in the FEDERAL REGISTER will be considered.

NONGRANDFATHER APPLICANTS

NAME AND ADDRESS

Manaco International Forwarders, (Melvyn Paul Cohen, d/b/a) 30 Dayton Street, Newark, N.J., 07114, Melvyn Paul Cohen, owner.

Supreme Shippers, Inc., 38 Pearl Street, New York, N.Y., 10004, Mildred F. Berger, president-treasurer, Nathan J. Roen, vice president-secretary.

Notice is hereby given of changes in the following application for independent ocean freight forwarder licenses to the following applicants, pursuant to section 44, Shipping Act, 1916 (75 Stat. 522 and 46 U.S.C. 841(b)).

NONGRANDFATHER APPLICANTS

NAME AND ADDRESS

Nester International Shipping Co., (Roy G. Nester, d/b/a), East Road, Harbor Acres, Sands Point, L.I., N.Y., dismissed March 24, 1964.

Albert L. Thompson, P.O. Box 6065, Charleston, S.C., dismissed January 23, 1964.

Dated: April 9, 1964.

THOMAS LISI,
Secretary.

[F.R. Doc. 64-3655; Filed, Apr. 13, 1964; 8:49 a.m.]

[Fact Finding Investigation 4]

NORTH ATLANTIC PORTS; HAMPTON ROADS, VA., TO SEARSPORT, MAINE

Terminal Practices; Notice of Hearing

APRIL 13, 1964.

A hearing in this proceeding will be held by the undersigned beginning at 10:00 a.m., May 5, 1964, at Room 300, U.S. Custom House Building, Second and Chestnut Streets, Philadelphia, Pa.

The hearing will be public.

JAMES A. KEMPKER,
Investigative Officer.

[F.R. Doc. 64-3556; Filed, Apr. 13, 1964; 8:49 a.m.]

FEDERAL POWER COMMISSION

[Project No. 2439]

GREEN MOUNTAIN POWER CORP.

Notice of Application for License

APRIL 8, 1964.

Public notice is hereby given that application has been filed under the Federal Power Act (16 U.S.C. 791a-825r) by Green Mountain Power Corporation (correspondence to: G. M. McKibbin, President, Green Mountain Power Corporation, 1 Main Street, Burlington, Vermont) for a license for constructed Project No. 2439, known as Molly's Falls Project, located on Molly's Brook and Winooski River, in Washington and Caledonia Counties, Vermont, in the vicinity of Marshfield, Cabot and Peacham, Vermont.

The project consists of: An earth rolled fill dam 980 feet long and 48 feet high

and concrete canal type spillway 40 feet long with crest elevation 1223.85 feet with flashboards to provide normal pool elevation 1230.05 feet and a reservoir area of 400 acres; and earth dam 700 feet long and 26 feet high with concrete sill spillway 90 feet long creating Peacham Pond Reservoir with usable storage of 2867 acre-feet; an intake with conduit leading to a 8293-foot penstock with a Johnson differential surge tank; a powerhouse containing one 7,000 horsepower turbine connected to a 5,000 kilowatt generator; and appurtenant electrical and mechanical facilities.

Protests or petitions to intervene may be filed with the Federal Power Commission, Washington, D.C., 20426, in accordance with the rules of practice and procedure of the Commission (18 CFR 1.8 or 1.10). The last day upon which protests or petitions may be filed is June 8, 1964. The application is on file with the Commission for public inspection.

JOSEPH H. GUTRIDE,
Secretary.

[F.R. Doc. 64-3650; Filed, Apr. 13, 1964; 8:49 a.m.]

[Docket Nos. G-2728 etc.]

CARL D. PERKINS ET AL.

Notice of Applications for Certificates, Abandonment of Service, Petitions To Amend Certificates and Notice of Severance [1]

APRIL 6, 1964.

Take notice that each of the Applicants listed herein has filed an application or petition pursuant to section 7 of the Natural Gas Act for authorization to sell natural gas in interstate commerce or to abandon service heretofore authorized as described herein, all as more fully described in the respective applications and amendments which are on file with the Commission and open to public inspection.

Protests or petitions to intervene may be filed with the Federal Power Commission, Washington, D.C., 20426, in accordance with the rules of practice and procedure (18 CFR 1.8 or 1.10) on or before May 4, 1964.

Take further notice that, pursuant to the authority contained in and subject to the jurisdiction conferred upon the Federal Power Commission by sections 7 and 15 of the Natural Gas Act and the Commission's rules of practice and procedure, a hearing will be held without further notice before the Commission on all applications in which no protest or petition to intervene is filed within the time required herein, if the Commission on its own review of the matter believes that a grant of the certificates is required by the public convenience and necessity. Where a protest or petition for leave to intervene is timely filed, or where the Commission on its own motion believes that a formal hearing is required, further notice of such hearing will be duly given.

[1] This notice does not provide for consolidation for hearing of the several matters covered herein, nor should it be so construed.

The proceeding in Docket No. CI61-439 is hereby severed from the consolidated proceedings in Docket Nos. G-4281 et al.

The proceeding in Docket No. CI61-531 is hereby severed from the consolidated proceedings in Docket Nos. CI61-153 et al.

Under the procedure herein provided for, unless otherwise advised, it will be unnecessary for Applicants to appear or be represented at the hearing.

JOSEPH H. GUTRIDE,
Secretary.

Docket No. and date filed	Applicant	Purchaser, field and location	Price per Mcf	Pressure base
G-2728 E 3-25-64	Carl D. Perkins, et al. (successor to Ruth A. McBurney, et al.).	Equitable Gas Co., Clay District, Ritchie County, W. Va.	16.0	15.325
G-2791 E 3-9-64	Glenn H. Johnson, agent (successor to Dalton & Hanna Co. [1]).	Equitable Gas Co., Elk and Union District, Barbour County, W. Va.	21.0	15.325
G-3711 D 3-30-64	Union Oil Co. of California	United Gas Pipe Line Co., Gordon Field, Beauregard Parish, La.	Assigned	
G-4822 D 3-30-64	Texaco Inc	United Gas Pipe Line Co., Bethany Field, Panola County, Tex.	Declined in Pressure.	
G-7823 D 3-26-64	Hondo Oil & Gas Co	El Paso Natural Gas Co., Blanco Area, La Plata County, Colo.	Assigned	
G-8816 D 3-27-64	Humble Oil & Refining Co	United Gas Pipe Line Co., Maxie and Pistol Ridge Fields, Forrest, Lamar and Pearl River Counties, Miss.	Assigned	
G-12244 C 3-23-64	Texaco Inc	Cities Service Gas Co., Northeast Waynoka Field, Woods County, Okla.	13.0	14.65
G-16010 D 3-27-64	Sunray DX Oil Co	Northern Natural Gas Co., acreage in Harper Ranch, Clark County, Kans.	(2)	
G-17391 D 3-27-64	Humble Oil & Refining Co	Hope Natural Gas Co., Bayou Pigeon Field, Iberia Parish, La.	Assigned	
CI61-403 E 3-30-64 [3a]	Herman Brown Estate (successor to Herman Brown).	Colorado Interstate Gas Co., Keyes Field, Cimarron County, Okla.	16.0	14.65
CI61-439 B 3-25-64 [3a]	Pioneer Production Corp. (Operator), et al.	Colorado Interstate Gas Co., Mocane Field, Beaver County, Okla.	Depleted	
CI61-531 B 3-12-64	Westheimer-Neustadt Corp	Cimarron Transmission Co., Westheimer Unit, Love County, Okla.	Depleted	
CI61-1642 C 3-23-64	Continental Oil Co	Michigan Wisconsin Pipe Line Co., acreage in Ellis County, Okla.	17.0	14.65
CI62-454 C 3-27-64	Gas, Inc	Panhandle Eastern Pipe Line Co., Panoma Council Grove Field, Stevens County, Kans.	14.0	14.65
CI63-207 E 3-26-64	Hal Pack (successor to Lloyd G. Jackson, et al., d/b/a Orbit Producing Co.).	Hope Natural Gas Co., McClellan District, Doddridge County, W. Va.	25.0	15.325
CI63-562 E 3-26-64	Hal Pack (successor to Lloyd G. Jackson, et al., d/b/a Orbit Producing Co.).	Hope Natural Gas Co., Eagle District, Harrison County, W. Va.	25.0	15.325
CI63-635 C 3-23-64 D 3-23-64	Humble Oil & Refining Co	Southern Natural Gas Co., Pointe la Hache and Bohemia Fields, Plaquemines Parish; and Fausse Point Field, Iberia Parish, La.	20.625	15.025
CI63-894 E 3-26-64	Hal Pack (successor to Lloyd G. Jackson, et al., d/b/a Orbit Producing Co.).	Hope Natural Gas Co., Clark District, Harrison County, W. Va.	25.0	15.325
CI64-175 C 3-27-64	Pan American Petroleum Corp.	El Paso Natural Gas Co., Basin Dakota Field, San Juan County, N. Mex.	12.0	15.025
CI64-588 C 3-30-64 [3]	Northern Natural Gas Producing Co.	Panhandle Eastern Pipe Line Co., acreage in Dewey County, Okla.	15.0	14.65
CI64-908 A 2-12-64	L. B. Horn (Operator), et al.	Tennessee Gas Transmission Co., Seven Sisters Field, Duval County, Tex.	[4] 16.0	14.65
CI64-1135 A 3-27-64	J. F. Stephenson (Operator), et al.	Lone Star Gas Co., East Hewitt Area, Carter County, Okla.	15.0	14.65
CI64-1136 A 3-23-64	J. A. Heard, d/b/a Heard Oil & Gas.	United Gas Pipe Line Co., Quinto Creek and Fort Lipan Fields, Jim Wells and Nueces Counties, Tex.	13.166	14.65
CI64-1137 A 3-25-64	The Pure Oil Co	Colorado Interstate Gas Co., Desert Springs Area, Sweetwater County, Wyo.	14.5	14.65
CI64-1138 A 3-27-64	Texaco Inc	El Paso Natural Gas Co., Fuller Gasoline Plant, Scurry County, Tex.	16.0	14.65
CI64-1139 A 3-26-64	Belco Petroleum Corp	Kansas-Nebraska Natural Gas Co., Inc., North Shawnee-Flat Top Field, Converse County, Wyo.	15.0	15.025
CI64-1140 A 3-26-64	Humble Oil & Refining Co	Michigan Wisconsin Pipe Line Co., Quinlan Field, Woodward County, Okla.	[5] 20.495	14.65
CI64-1141 A 3-26-64	Carl E. Gungoll and Henry H. Gungoll.	Arkansas-Louisiana Gas Co., Lacy Area, Kingfisher County, Okla.	0.168	14.65
CI64-1142 A 3-26-64	American Metal Climax, Inc.	Kansas-Nebraska Natural Gas Co., Inc., North Shawnee-Flat Top Field, Converse County, Wyo.	15.0	15.025
CI64-1143 A 3-27-64	Joseph E. Newman (Operator), et al.	Cities Service Gas Co., acreage in Pratt County, Kans.	13.0	14.65
CI64-1144 A 3-30-64	Great Circle Gas Co., Inc.	Texas Eastern Transmission Corp., Freisburg Field, Colorado County, Tex.	12.0	14.73
CI64-1145 A 3-30-64	Lonnie Glasscock, Jr. and Woodrow Glasscock.	J. A. Heard, d/b/a Heard Oil & Gas (successor to J. A. Heard, Trustee) Quinto Creek Field Area, Jim Wells County, Tex.	9.0	15.325
CI64-1146 A 3-30-64	J. A. Heard, et al	do	6.0	15.32
CI64-1147 A 3-30-64	Whitehall Oil Co., Inc.	Northern Natural Gas Co., acreage in Ochiltree County, Tex.	17.0	14.65
CI64-1148 A 3-30-64	Phillips Petroleum Co	Panhandle Eastern Pipe Line Co., Oklahoma Panhandle Area, Beaver County, Okla.	17.0	14.65

Filing code: A—Initial service.
B—Abandonment.
C—Amendment to add acreage.
D—Amendment to delete acreage.
E—Succession.

See footnotes at end of table.

Docket No. and date filed	Applicant	Purchaser, field and location	Price per Mcf	Pressure base
CI64-1149 A 3-31-64	Hyland Oil Corp. and G. G. Gabrielson.	Garfield Gas Gathering Co., South Sulphur Creek Field, Rio Blanco County, Colo.	15.0	15.025
CI64-1150 A 3-31-64	Pacific Natural Gas Exploration Co.	Garfield Gas Gathering Co., Divide Creek, Garfield County, Colo.	15.0	15.025
CI64-1151 A 3-31-64	Granada Exploration and Development Co.	Garfield Gas Gathering Co., Mam Creek and Scandard Draw Areas, Garfield and Rio Blanco Counties, Colo.	15.0	15.025
CI64-1152 A 3-31-64	Great Yellowstone Corp.	Garfield Gas Gathering Co., Sulphur Creek Field, Rio Blanco County, Colo.	15.0	15.025
CI64-1153 A 3-31-64	Gulf Oil Corp.	El Paso Natural Gas Co., Gomes Unit, Pecos County, Tex.	[8] 15.70925 [8] 17.2295	14.65
CI64-1154 A 3-31-64	Pan American Petroleum Corp.	Trunkline Gas Co., Offshore Vermilion Parish, La.	22.0	15.025
CI64-1155 A 3-31-64	California Oil Co., Western Division.	Garfield Gas Gathering Co., Mam Creek Area, Garfield County, Colo.	15.0	15.025
CI64-1156 A 3-30-64	H. K. Zink	United Gas Pipe Line Co., Willmann (Upper Stillwell) Field, San Patricio County, Tex.	13.25	14.65

[1] Dalton & Hanna Co., never made a succession filing for subject sale; certificate authorization was granted to Black Gas Company in Docket No. G-2791.
[2] Deletes non-productive acreage.
[2a] Presently consolidated with Docket Nos. G-4281, et al.
[3] Original authorization conditioned pursuant to Commission's Opinion No. 350.
[4] Applicant advised willingness to accept permanent certificate at 16.0 cents by letter filed March 27, 1964.
[5] Includes .995 cent tax reimbursement.
[6] Wellhead price 15.70925 includes tax reimbursement; Tailgate price 17.2295 includes tax reimbursement.

[F.R. Doc. 64-3552; Filed, Apr. 13, 1964; 8:45 a.m.]

NATIONAL POWER SURVEY ADVISORY COMMITTEE

Continuance

APRIL 7, 1964.

Pursuant to Paragraph 8 of the Commission's Order Establishing National Power Survey Advisory Committees and Prescribing Procedures, issued March 22, 1962, the Commission hereby determines that the continued existence of the General Technical Advisory Committee for an additional period of two years is in the public interest.

By the Commission.

[SEAL] JOSEPH H. GUTRIDE, *Secretary.*

[F.R. Doc. 64-3597; Filed, Apr. 13, 1964; 8:45 a.m.]

[Docket No. CP64-108]

CITIES SERVICE GAS CO.

Notice of Application To Amend Order

APRIL 8, 1964.

Take notice that on March 18, 1964, Cities Service Gas Company (Applicant), P.O. Box 1995, Oklahoma City, Oklahoma, filed an application to amend the Commission's order issued January 27, 1964, in Docket No. CP64-108 to authorize the construction and operation in the Barber County producing area, Kansas, seven (7) field booster stations consisting of small field compressor units totaling approximately 2,300 horsepower in lieu of the 2,000 horsepower of compression heretofore authorized in this proceeding to be installed at the Alva Compressor Station, Woods County, Oklahoma, all as more fully set forth in the application to amend on file with the Commission and open to public inspection.

The order of January 27, 1964, authorized Applicant to construct and operate, among other things, 2000 compressor horsepower at the existing Alva Station to enable Applicant to lower the intake pressure of its Barber County Field pipeline at said Station, in order to take gas ratably between the approximately 27 different fields which make up said producing area. Applicant states that up-to-date studies indicate that the Barber Area can be operated with greater flexibility, with better control of over-all production giving consideration to the variation in pressures existent between the fields within the Area, and for a longer period of time, without the need for additional compression, by the installation of the herein proposed 7 field booster stations rather than by the installation of the larger single unit at the Alva Station. The proposed booster stations will be composed of 230 horsepower basic units.

The application indicates that, although the subject proposal will add approximately 300 more horsepower to Applicant's system than was originally certificated, the estimated installed cost of the booster stations will be approximately $76,000 less than the estimated cost of the 2000 horsepower proposed for the Alva Station.

Protests, petitions to intervene or requests for hearing in this proceeding may be filed with the Federal Power Commission, Washington, D.C., 20426, in accordance with the rules of practice and procedure (18 CFR 1.8 or 1.10) on or before April 30, 1964.

JOSEPH H. GUTRIDE, *Secretary.*

[F.R. Doc. 64-3649; Filed, Apr. 13, 1964; 8:49 a.m.]

[Project No. 2449]

CONSUMERS POWER CO.

Notice of Application for License

APRIL 7, 1964.

Public notice is hereby given that application has been filed under the Federal Power Act (16 U.S.C. 791a-825r) by Consumers Power Company (correspondence to: W. R. Boris, Secretary, Consumers Power Company, 212 West Michigan Avenue, Jackson, Michigan, 49201) for license for constructed Project No. 2449, known as the Loud Plant, located on Au Sable River, in Iosco County, Michigan, and affecting lands of the United States within the Huron National Forest.

The project consists of: Two earth fill dam sections about 1,820 feet long with a design head of 26 feet; a reinforced concrete spillway having three tainter gates; a reservoir about 3½ miles in length containing a surface area of 790 acres; a powerhouse with three open penstocks controlled by tainter gates and two generating units with a total capacity of 4,000 kilowatts; a substation; and other appurtenant mechanical and electrical facilities.

Protests or petitions to intervene may be filed with the Federal Power Commission, Washington, D.C., 20426, in accordance with the rules of practice and procedure of the Commission (18 CFR 1.8 or 1.10). The last day upon which protests or petitions may be filed is June 12, 1964. The application is on file with the Commission for public inspection.

JOSEPH H. GUTRIDE, *Secretary.*

[F.R. Doc. 64-3598; Filed, Apr. 13, 1964; 8:45 a.m.]

[Docket Nos. RI60-20, RI60-434]

JOCELYN-VARN OIL CO. ET AL.

Order Redesignating Proceedings

APRIL 7, 1964.

Jocelyn-Varn Oil Company, Agent for Oil & Minerals Investments, Inc., et al. (Formerly Jocelyn-Varn Oil Company (Operator), et al.), Docket Nos. RI60-20 and RI60-434.

On June 28, 1963, Jocelyn-Varn Oil Company, Agent for Oil & Minerals Investment, Inc., et al. (Agent) filed a motion requesting that Agent be substituted for Jocelyn-Varn Oil Company (Operator), et al. (Operator) in the above-designated rate suspension proceedings, to reflect changes in ownership of the working interest.

On December 18, 1959, Operator tendered for filing a notice of change in its FPC Gas Rate Schedule No. 6, involving the jurisdictional sale of natural gas to West Lake Natural Gasoline Company, et al., from the Nena Lucia Field, Nolan County, Texas (Railroad Commission District No. 7-B). The proposed increased rate, designated as Supplement No. 1 to Operator's FPC Gas Rate Schedule No. 6, was suspended by order issued January 15, 1960, in Docket No. RI60-20, until January 23, 1960, and thereafter until made effective in the manner prescribed by the Natural Gas Act. The proposed increased rate became effective subject to refund on June 6, 1960, under an agreement and undertaking filed by Jocelyn-Varn Oil Company. The redesignation of the proceedings here will not affect the filed agreement and undertaking in view of the nature of the redesignation. The agreement and undertaking of Jocelyn-Varn Oil Company will, therefore, remain in full force and effect.

On May 23, 1960, Operator tendered for filing a second notice of change in the aforementioned rate schedule. The proposed increased rate, designated as Supplement No. 2 to Operator's FPC Gas Rate Schedule No. 6, was suspended by order issued June 22, 1960, in Docket No. RI60–434, until June 24, 1960, and thereafter until made effective in the manner prescribed by the Natural Gas Act. The proposed increased rate has not become effective subject to refund.

By order issued July 2, 1963, in Docket Nos. G–11174, et al., Agent was substituted for Operator as certificate holder in Docket No. G–20240, which relates to Operator's FPC Gas Rate Schedule No. 6, and such rate schedule, as supplemented, was redesignated as Agent's FPC Gas Rate Schedule No. 6.

The Commission finds: It is necessary and proper in carrying out the provisions of the Natural Gas Act that the proceedings in Docket Nos. RI60–20 and RI60–434 be redesignated "Jocelyn-Varn Oil Company, Agent for Oil & Minerals Investments, Inc., et al."

The Commission orders: The proceedings in Docket Nos. RI60–20 and RI60–434 are redesignated as "Jocelyn-Varn Oil Company, Agent for Oil & Minerals Investments, Inc., et al."

By the Commission.

[SEAL] JOSEPH H. GUTRIDE, *Secretary.*

[F.R. Doc. 64–3599; Filed, Apr. 13, 1964; 8:45 a.m.]

[Docket No. G–17355]

MURCHISON BROS. & DENIUS

Order Accepting Offer of Settlement, Requiring Filing of Notice of Change and Contract Amendment, and Terminating Proceeding

APRIL 7, 1964.

On February 7, 1964, Murchison Bros. & Denius (Murchison) submitted an offer of settlement in the proceeding pursuant to § 1.18(e) of the Commission's Rules of Practice and Procedure. The offer involves proposed increased rates for sales of natural gas made to Tennessee Gas Transmission Company (TGT) by Murchison. The offer relates to sales made under Supplement No. 6 to Murchison's FPC Gas Rate Schedule No. 1 in Victoria County, Texas (Texas R.R. Com. District No. 2). The proposed increased rate was suspended by order of the Commission for the statutory period, and was made effective by Murchison on July 10, 1959.

Under the terms of the offer, Murchison proposes to eliminate the favored-nation and price redetermination provisions from the rate schedule and to establish a 14.6 cents per Mcf rate for the subject sale with future periodic price escalations consistent with the Second Amendment. Murchison's annual revenues will be decreased about $1,406 from the presently effective rates. No protests or objections have been filed to the offer.

Murchison, in its offer, proposes to refund all amounts collected, subject to refund, for sales of natural gas to TGT under the subject rate schedule in excess of the settlement rate. The estimated total dollars to be refunded approximates $7,433, exclusive of interest.

The proposed settlement is consistent with the provisions of the Second Amendment to the Commission's Statement of General Policy No. 61–1, issued December 20, 1960, 24 F.P.C. 1107, as amended by Order No. 264, issued March 27, 1963, 29 F.P.C. 589, and its acceptance would serve the public interest.

However, we desire to make it clear that acceptance of Murchison's offer of settlement shall not be construed as approval of any future increased rate filed in accordance with its reservations of the right to file increases to cover future tax increases. Nor, may our action herein be construed as constituting approval of any future periodic rate increase that may be filed under the subject rate schedule, and is without prejudice to any findings or order of the Commission in any future proceedings, including area rate or other similar proceedings, involving Murchison's rate and rate schedule.

The Commission finds: The proposed settlement of the above-designated proceeding, on the basis described herein, as more fully set forth in the offer of settlement filed with the Commission by Murchison on February 7, 1964, is in the public interest and appropriate to carry out the provisions of the Natural Gas Act and should be approved and made effective as hereinafter ordered.

The Commission orders:

(A) The offer of settlement filed with the Commission by Murchison on February 7, 1964, is hereby approved in accordance with the provisions of this order.

(B) Murchison shall file, within 30 days from the date of issuance of this order, notice of change in rate providing for the 14.6 cents per Mcf rate specified in its offer of settlement, and an executed contractual amendment to its FPC Gas Rate Schedule No. 1 eliminating the favored-nation, and price redetermination provisions therefrom. The notice of change and the contractual amendment shall be submitted in accordance with Part 154 of the Commission's regulations under the Natural Gas Act.

(C) Murchison shall refund to TGT to the date of issuance of this order the difference between the rates collected subject to refund under the rate schedule herein and the settlement rate with simple interest at 6 percent per annum and shall report to the Commission, in writing, within 30 days from the date of issuance of this order, the amount of such refund, showing separately the amount of principal and interest, and the bases used for such determination, together with a release from TGT.

(D) Upon notification by the Secretary of the Commission that Murchison has complied with the terms and conditions of the order, the rate and charge of 14.6 cents per Mcf at 14.65 psia, specified in its offer of settlement, shall be effective as of the date of issuance of this order, the above designated proceedings shall be deemed terminated, and severed from the consolidated area rate proceeding (Texas Gulf Coast Area) in Docket No. AR64–2 without further order of the Commission.

(E) The acceptance by the Commission of Murchison's offer of settlement is without prejudice to any findings or determinations that may be made in any proceeding now pending, or hereafter instituted by or against Murchison, including area rate or other similar proceedings.

By the Commission.

[SEAL] JOSEPH H. GUTRIDE, *Secretary.*

[F.R. Doc. 64–3600; Filed, Apr. 13, 1964; 8:45 a.m.]

[Docket No. G–9476 etc.]

PAN AMERICAN PETROLEUM CORP.

Order Redesignating Proceedings and Accepting Agreements and Undertakings

APRIL 7, 1964.

Pan American Petroleum Corporation, Docket Nos. G–9476, G–11536, G–13848, G–17158, G–19910, RI61–223, RI62–75, RI63–143, RI64–234.

Texas Gulf Producing Company (Operator), et al. (Texas Gulf) tendered for filing from time to time proposed increased rates under its FPC Gas Rate Schedule No. 10 for sales of natural gas to United Fuel Gas Company from Lake Long Field, Lafourche Parish, Louisiana. That rate schedule covered Pan American Petroleum Corporation's (Pan American) interest as well as Texas Gulf's interest in the subject properties. The increased rates were suspended in the above-designated proceedings,[1] and were, except for the increase suspended in Docket No. RI64–234,[2] subsequently made effective subject to refund. As a result of a settlement agreement approved by order issued December 30, 1963 in Texas Gulf Producing Company, Docket Nos. G–9476, et al., the above-designated proceedings, except Docket No. RI64–234, were terminated except as to the interest of Pan American.[3]

On December 27, 1963, Pan American tendered for filing a rate schedule, with supplements, to cover its interest in the subject sale in lieu of having its interest covered by Texas Gulf's FPC Gas Rate

[1] All of the proceedings, except Docket No. RI64–234, have been consolidated with the Area Rate Proceedings, Docket Nos. AR61–2, et al.

[2] The proposed increased rate, which relates only to Pan American's interest, is under suspension until April 1, 1964, and thereafter until such further time it is made effective in the manner prescribed by the Natural Gas Act.

[3] The settlement agreement with Texas Gulf excluded the rate suspended in Docket No. RI64–234 since it relates only to the interest of Pan American.

Schedule No. 10.[4] Concurrent with this filing Pan American tendered agreements and undertakings in the above-designated proceedings to assure the refund of all charges, applicable to its interest in the instant sale, determined by the Commission to be excessive.[5] By Commission letter dated March 5, 1964, Pan American's rate schedule was accepted for filing and designated as Pan American Petroleum Corporation FPC Gas Rate Schedule No. 384, as supplemented.

In view of the above, Pan American should be made the respondent in the above-designated proceedings, such proceedings should be redesignated accordingly, and the agreements and undertakings filed in these proceedings, except for Docket No. RI64–234, should be accepted for filing.

The Commission finds: It is necessary and proper in carrying out the provisions of the Natural Gas Act that Pan American be made the respondent in the above-designated proceedings, that such proceedings be redesignated accordingly, and that except for the undertaking filed in Docket No. RI64–234, the agreements and undertakings filed in such proceedings should be accepted for filing.

The Commission orders:

(A) Pan American Petroleum Corporation is hereby made the respondent in the above-designated proceedings and such proceedings are redesignated accordingly.

(B) Except for the undertaking filed in Docket No. RI64–234, the agreements and undertakings submitted by Pan American Petroleum Corporation in the above-designated proceedings are hereby accepted for filing.

(C) Pan American Petroleum Corporation shall comply with the refunding and reporting procedure required by the Natural Gas Act and § 154.102 of the regulations thereunder. The agreements and undertakings accepted for filing in paragraph (B) above shall remain in full force and effect until discharged by the Commission.

(D) Our action herein is without prejudice to any action that may be necessary in these proceedings with respect to filings by Texas Gulf under the terms and conditions provided for in the December 30, 1963 order approving Texas Gulf's settlement proposal.

By the Commission.

[SEAL] JOSEPH H. GUTRIDE, *Secretary.*

[F.R. Doc. 64–3601; Filed, Apr. 13, 1964; 8:45 a.m.]

[4] A certificate relating to the subject sale was issued October 28, 1954 to Pan American's predecessor, The American Oil Company, in Docket No. G–2793, Texas Gulf Producing Company and The American Oil Company.

[5] Pan American is premature in the filing of an agreement and undertaking in Docket No. RI64–234, since the suspension period for the rate involved does not expire until April 1, 1964, and no motion to place such rate in effect subject to refund has been filed. Accordingly, no action will be taken on this filing until a later date.

[Docket Nos. G–20060, RI60–330]

RIO BRAVO OIL CO.

Order Accepting Offer of Settlement, Requiring Filing of Notice of Change and Contract Amendment, and Terminating Proceedings

APRIL 7, 1964.

On February 10, 1964, Rio Bravo Oil Company (Rio) submitted an offer of settlement in these proceedings pursuant to § 1.18(e) of the Commission's rules of practice and procedure. The offer involves proposed increased rates for sales of natural gas made to Tennessee Gas Transmission Company (TGT) by Rio. The offer relates to sales made under Supplement Nos. 3 and 4 to Rio's FPC Gas Rate Schedule No. 2 in Hidalgo County, Texas (Texas R.R. Com. District No. 4). Each of the proposed increased rates were suspended by order of the Commission for the statutory period, and were made effective by Rio on April 15 and October 15, 1950.

Under the terms of the offer, Rio proposes to eliminate the favored-nation and price redetermination provisions from the rate schedule and to establish a 14.6 cents per Mcf rate for the subject sale. Rio's annual revenues will be decreased about $740 from the presently effective rates. No protests or objections have been filed to the offer.

Rio, in its offer, proposed to refund all amounts collected, subject to refund, for sales of natural gas to TGT under the subject rate schedule in excess of the settlement rate. The estimated total dollars to be refunded approximates $2,740, exclusive of interest.

The proposed settlement is consistent with the provisions of the Second Amendment to the Commission's Statement of General Policy No. 61–1, issued December 20, 1960, 24 F.P.C. 1107, as amended by Order No. 264, issued March 27, 1963, 29 F.P.C. 589, and its acceptance would serve the public interest.

However, we desire to make it clear that acceptance of Rio's offer of settlement shall not be construed as approval of any future increased rate filed in accordance with its reservations of the right to file increases to cover future tax increases. Nor, may our action herein be construed as constituting approval of any future periodic rate increase that may be filed under the subject rate schedule, and is without prejudice to any findings or order of the Commission in any future proceedings, including area rate or other similar proceedings, involving Rio's rate and rate schedule.

The Commission finds: The proposed settlement of each of the above-designated proceedings, on the basis described herein, as more fully set forth in the offer of settlement filed with the Commission by Rio on February 10, 1964, is in the public interest and appropriate to carry out the provisions of the Natural Gas Act and should be approved and made effective as hereinafter ordered.

The Commission orders:

(A) The offer of settlement filed with the Commission by Rio February 10, 1964, is hereby approved in accordance with the provisions of this order.

(B) Rio shall file, within 30 days from the date of issuance of this order, notice of change in rate providing for the 14.6 cents per Mcf rate specified in its offer of settlement, and an executed contractual amendment to its FPC Gas Rate Schedule No. 4 eliminating the favored-nation and price redetermination provisions therefrom. The notice of change and the contractual amendment shall be submitted in accordance with Part 154 of the Commission's regulations under the Natural Gas Act.

(C) Rio shall refund to TGT to the date of issuance of this order the difference between the rates collected subject to refund under the rate schedule herein and the settlement rate with simple interest at the rate of 6 percent per annum, and shall report to the Commission, in writing, within 30 days from the date of issuance of this order, the amount of such refund, showing separately the amount of principal and interest, and the bases used for such determination, together with a release from TGT.

(D) Upon notification by the Secretary of the Commission that Rio has complied with the terms and conditions of the order, the rate and charge of 14.6 cents per Mcf at 14.65 psia, specified in its offer of settlement, shall be effective as of the date of issuance of this order, the above designated proceedings shall be deemed terminated, and severed from the consolidated area rate proceeding (Texas Gulf Coast Area) in Docket No. AR64–2 without further order of the Commission.

(E) The acceptance by the Commission of Rio's offer of settlement is without prejudice to any findings or determinations that may be made in any proceeding now pending, or hereafter instituted by or against Rio, including area rate or other similar proceedings.

By the Commission.

[SEAL] JOSEPH H. GUTRIDE, *Secretary.*

[F.R. Doc. 64–3602; Filed, Apr. 13, 1964; 8:45 a.m.]

[Docket No. G–13582]

TENNECO OIL CO. ET AL.

Order Accepting Offer of Settlement, Requiring Filing of Notice of Change and Contract Amendment, Severing and Terminating Proceeding

APRIL 8, 1964.

On January 9, 1964, Tenneco Oil Company (Operator) (Tenneco) submitted an offer of settlement in this proceeding pursuant to § 1.18(e) of the Commission's rules of practice and procedure. The offer involves a proposed increased rate for a sale of natural gas made to United Gas Pipe Line Company (United) by Tenneco. The offer relates to a sale made under Supplement No. 9 to Tenneco's FPC Gas Rate Schedule No. 2 in San Patricio and Nueces Counties, Texas (Texas R.R. Com. District No. 4). The

proposed increased rate was suspended by order of the Commission for the statutory period, and was made effective by Tenneco on April 1, 1958.

Under the terms of the offer, Tenneco proposes to eliminate the price redetermination provision from the rate schedule and to establish a 14.6 cents per Mcf rate for the subject sale. Tenneco's annual revenues will be decreased about $5,000 from the presently effective rates. No protests or objections have been filed to the offer.

Tenneco, in its offer, proposes to refund all amounts collected, subject to refund, for sales of natural gas to United under the subject rate schedule in excess of the settlement rate. The estimated total dollars to be refunded approximates $45,500, exclusive of interest.

The proposed settlement is consistent with the provisions of the Second Amendment to the Commission's Statement of General Policy No. 61–1, issued December 20, 1960, 24 F.P.C. 1107, as amended by Order No. 264, issued March 27, 1963, 29 F.P.C. 589, and its acceptance would serve the public interest.

However, we desire to make it clear that our action herein shall not be construed as constituting approval of any future rate increase that may be filed under the subject rate schedule, and is without prejudice to any findings or order of the Commission in any future proceedings, including area rate or other similar proceedings, involving Tenneco's rate and rate schedule.

The Commission finds: The proposed settlement of the above-designated proceeding, on the basis described herein, as more fully set forth in the offer of settlement filed with the Commission by Tenneco on January 9, 1964, is in the public interest and appropriate to carry out the provisions of the Natural Gas Act and should be approved and made effective as hereinafter ordered.

The Commission orders:

(A) The offer of settlement filed with the Commission by Tenneco January 9, 1964, is hereby approved in accordance with the provisions of this order.

(B) Tenneco shall file, within 30 days from the date of issuance of this order, notice of change in rate providing for the 14.6 cents per Mcf rate specified in its offer of settlement, and an executed contractual amendment to its FPC Gas Rate Schedule No. 2 eliminating the price redetermination provisions therefrom. The notice of change and the contractual amendment shall be submitted in accordance with Part 154 of the Commission's regulations under the Natural Gas Act.

(C) Tenneco shall refund to United to the date of issuance of this order the difference between the rates collected subject to refund under the rate schedule herein and the settlement rate with simple interest, at 6 percent per annum, and shall report to the Commission, in writing, within 30 days from the date of issuance of this order, the amount of such refund, showing separately the amount of principal and interest, and the bases used for such determination, together with a release from United.

(D) Upon notification by the Secretary of the Commission that Tenneco has complied with the terms and conditions of the order, the rate and charge of 14.6 cents per Mcf at 14.65 psia, specified in its offer of settlement shall be effective as of the date of issuance of this order, the above designated proceeding shall be deemed terminated, and severed from the consolidated area rate proceeding (Texas Gulf Coast Area) in Docket No. AR64–2 without further order of the Commission.

(E) The acceptance by the Commission of Tenneco's offer of settlement is without prejudice to any findings or determinations that may be made in any proceeding now pending, or hereafter instituted by or against Tenneco, including area rate or other similar proceedings.

By the Commission.

[SEAL] JOSEPH H. GUTRIDE, *Secretary.*

[F.R. Doc. 64–3651; Filed, Apr. 13, 1964; 8:49 a.m.]

[Docket No. RP64–33]

UNITED NATURAL GAS CO.

Notice of Proposed Changes in Rates and Charges

APRIL 8, 1964.

Take notice that on April 6, 1964, United Natural Gas Company (United) tendered for filing proposed changes in its FPC Gas Tariff, Original Volume No. 1, to become effective January 1, 1964. The proposed changes reflect reductions in rates and charges in its Rate Schedules G–1 and CD–1.

The annual reduction approximates $49,693 based upon sales for the year 1963 and reflects the recent reduction in the corporate Federal income tax rate from 52 percent to 50 percent.

Copies of the proposed rate changes have been served by United upon its customers and State Commissions. Comments may be filed with the Commission on or before April 24, 1964.

JOSEPH H. GUTRIDE, *Secretary.*

[F.R. Doc. 64–3652; Filed, Apr. 13, 1964; 8:49 a.m.]

[Docket No. E–7160]

DEPARTMENT OF THE INTERIOR AND SOUTHEASTERN POWER ADMINISTRATION

Notice of Request for Approval of Rates

APRIL 7, 1964.

Notice is hereby given that the Secretary of the Interior, on behalf of the Southeastern Power Administration (SEPA), has filed with the Federal Power Commission for confirmation and approval, pursuant to the Flood Control Act of 1944 (58 Stat. 887), proposed rates and charges for the sale of power marketed from the Allatoona and Buford projects located in Northern Georgia, the Clark Hill and Hartwell projects located on the Savannah River on the Georgia-South Carolina state line and the Walter F. George project located on the Chattahoochee River on the Alabama-Georgia state line. Approval is requested for a period beginning July 1, 1964, and ending June 30, 1969.

The rates and charges are contained in the following wholesale rate schedules:

1. *Wholesale Power Rate Schedule GA–1.* This rate schedule shall be available to public bodies and cooperatives in Georgia to whom power may be wheeled pursuant to the provisions of the contract, dated October 11, 1957, as amended, between the Georgia Power Company and the Government. The rate schedule shall be applicable to power and accompanying energy generated at the Allatoona, Buford, Clark Hill, Walter F. George, and Hartwell projects and sold in wholesale quantities.

2. *Wholesale Power Rate Schedule GA–2.* This rate schedule shall be available to the Georgia Power Company. The rate schedule shall be applicable to electric capacity and energy generated at the Allatoona, Buford, Clark Hill, Walter F. George, and Hartwell projects and sold under the contract, dated October 11, 1957, as amended, between the Government and the Company.

3. *Wholesale Power Rate Schedule ALA–1.* This rate schedule shall be available to the Alabama Electric Cooperative, Incorporated. The rate schedule shall be applicable to power and accompanying energy delivered at the Walter F. George project power plant and sold under contract executed June 28, 1961, as amended, between the Cooperative and the Government.

4. *Wholesale Power Rate Schedule SC–1.* This rate schedule shall be available to the South Carolina Public Service Authority and to the Greenwood County Electric Power Commission. The rate schedule shall be applicable to power and accompanying energy generated at the Clark Hill project and sold in wholesale quantities.

5. *Wholesale Power Rate Schedule CAR–1.* This rate schedule shall be available to public bodies and cooperatives in North Carolina and South Carolina to whom power may be wheeled pursuant to the provisions of the contract, dated December 16, 1963, between the Duke Power Company and the Government.

6. *Wholesale Power Rate Schedule CAR–2.* This rate schedule shall be available to the Duke Power Company. The rate schedule shall be applicable to electric capacity and energy generated at the Hartwell Project and sold under the contract, dated December 16, 1963, between the Government and the Company.

The Commission has previously approved the rates and charges for the sale of power from the above-named projects in Docket Nos. E–6938 and E–7043. The Commission's approval in both cases expires June 30, 1964. The proposed new rate schedules will supersede the rate schedules heretofore approved.

The above rate schedules along with a Repayment Study supplying the rates are on file with the Commission for public inspection. Any person desiring to make comments or suggestions for Com-

mission consideration with respect to the proposed rates and charges should submit the same in writing on or before April 24, 1964 to the Federal Power Commission, Washington, D.C., 20426.

JOSEPH H. GUTRIDE,
Secretary.

[F.R. Doc. 64-3603; Filed, Apr. 13, 1964; 8:45 a.m.]

SECURITIES AND EXCHANGE COMMISSION

[File Nos. 811-912, 812-1457]

HARBOR PLYWOOD CORP. AND HUNT FOODS AND INDUSTRIES, INC.

Notice of Filing of Amended Application for an Order Declaring That Company Has Ceased To Be Investment Company

APRIL 8, 1964.

Notice is hereby given that an amended application has been filed under section 8(f) of the Investment Company Act of 1940 ("Act") for an order declaring that Harbor Plywood Corporation ("Harbor") Aberdeen, Washington, a closed-end non-diversified investment company registered under the Act, has ceased to be an investment company. All interested persons are referred to the application, as amended, filed with the Commission for a complete statement of the representations therein which are summarized below.

On March 5, 1962, the Commission issued an order (Investment Company Act Release No. 3440) exempting from section 17(a) of the Act transactions incident to the merger of Harbor into Hunt Foods and Industries, Inc. ("Hunt") Fullerton, California and reserving jurisdiction to issue, following consummation of the merger, an appropriate order concerning the application filed by Harbor under section 8(f) of the Act. The Agreement of Merger entered into by Hunt and Harbor was filed with the Secretary of the State of Delaware on March 5, 1962 and the merger was consummated. Over 99 percent of the shares of Harbor to be exchanged for shares of Hunt under the terms of the merger agreement have been so exchanged. By letters dated March 5, April 20, and May 31, 1962, and February 6, 1963, Hunt has requested the holders of all unexchanged shares of Harbor stock to exchange their certificates for certificates of Hunt stock. On January 2, 1964, seventy-six shareholders of Harbor holding certificates for 2,375.4 shares of Harbor had not exchanged such shares for shares of common stock of Hunt.

Holders of unexchanged shares of Harbor stock may present their certificates representing such shares to Manufacturers Hanover Trust Company, Exchange Agent, 70 Broadway, New York, New York, 10015, for exchange into certificates of common stock of Hunt. The unexchanged shares of Harbor stock are equivalent in the aggregate to 1714.75 shares of common stock of Hunt. In addition, holders of unexchanged shares of Harbor stock have rights to all accumulated dividends paid on Hunt stock since the effective date of the merger of Harbor into Hunt.

Section 8(f) of the Act provides, in pertinent part, that whenever the Commission upon application finds that a registered investment company has ceased to be an investment company, it shall so declare by order, which, if necessary for the protection of investors, may be made upon appropriate conditions, and upon the taking effect of such order the registration of such company shall cease to be in effect.

Notice is further given that any interested person may, not later than April 22, 1964, at 5:30 p.m., submit to the Commission in writing a request for a hearing on the matter accompanied by a statement as to the nature of his interest, the reason for such request and the issues of fact or law proposed to be controverted, or he may request that he be notified if the Commission shall order a hearing thereon. Any such communication should be addressed: Secretary, Securities and Exchange Commission, Washington, D.C., 20549. A copy of such request shall be served personally or by mail (air mail if the person being served is located more than 500 miles from the point of mailing) upon applicants at the addresses stated above. Proof of such service (by affidavit or in case of an attorney-at-law by certificate) shall be filed contemporaneously with the request. At any time after said date, as provided by Rule 0-5 of the rules and regulations promulgated under the Act, an order disposing of the application herein may be issued by the Commission upon the basis of the showing contained in said application, unless an order for hearing upon said application shall be issued upon request or upon the Commission's own motion.

For the Commission (pursuant to delegated authority).

[SEAL] ORVAL L. DUBOIS,
Secretary.

[F.R. Doc. 64-3642; Filed, Apr. 13, 1964; 8:49 a.m.]

DEPARTMENT OF LABOR

Office of the Secretary

[Secretary's Order 10-64]

ADMINISTRATIVE ASSISTANT SECRETARY

Delegation of Authority To Enter Into and Execute Contracts

1. *Purpose.* This order delegates authority to enter into and execute contracts for property, services, and the publication of advertisements, notices, and proposals.

2. *Authority.* This order is issued pursuant to the following: R.S. section 161, 1878 (5 U.S.C. 22); Act of March 4, 1913 (37 Stat. 736, 5 U.S.C. 611) and Reorganization Plan No. 6 of 1950 (15 F.R. 3174, 64 Stat. 1263, 5 U.S.C. 611 note); Act of Aug. 2, 1946 (60 Stat. 809, 5 U.S.C. 22a); the Federal Property and Administrative Services Act of 1949, Title III, as amended (63 Stat. 393, 41 U.S.C. 251 et seq.), and Delegation of Authority No. 410 thereunder (27 F.R. 3017), dated March 26, 1962, by the Administrator of the General Services Administration; the Government Employees Training Act as amended (72 Stat. 327; 5 U.S.C. 2301); and the Manpower Development and Training Act of 1962 (76 Stat. 23, 42 U.S.C. 2571) and as amended.

3. *Directives affected.* Secretary's Orders Nos. 21-62 and 22-62 are canceled. All other orders, instructions, directives and memoranda of the Secretary of Labor and other officials of the Department of Labor are superseded to the extent that they are inconsistent herewith.

4. *Delegation of authority.* a. The authority vested in the Secretary of Labor to purchase and procure property and services, to enter into and execute contracts therefor, and to authorize the publication of advertisements, notices, and proposals and execute contracts therefor, is delegated to the Administrative Assistant Secretary or officers acting in that capacity. This delegated authority includes but is not limited to:

(1) The authority under Title III of the Federal Property and Administrative Services Act of 1949, as amended, delegated to the Secretary of Labor in said Delegation of Authority No. 410 (27 F.R. 3017, dated March 26, 1962, except the authority to make the Determinations specified in section 302(c) paragraphs (12) and (13) of the Act, and the Determination specified in section 302(c) paragraph (11) of the Act when the proposed contract under section 302(c)(11 will require the expenditure of more than $25,000 (41 U.S.C. 252(c) (12), (13) and (11). Such authority shall be exercised in accordance with the applicable limitations and requirements of the Act, and policies, procedures, limitations, controls and reporting requirements prescribed by the General Services Administration and by the Department of Labor pursuant thereto, as promulgated by the Administrative Assistant Secretary.

(2) The authority under section 22a of Title 5 of the U.S. Code to authorize and contract for the publication of advertisements, notices and proposals in newspapers, journals and other appropriate public issuances. This authority is to be exercised in accordance with section 324 of Title 44 of the U.S. Code and other applicable laws and regulations.

(3 The authority to enter into contracts for property and services pursuant to existing agreements entered into by the Department of Labor with operating Federal agencies under provisions of the Foreign Assistance Act of 1961, as amended (75 Stat. 424, 719; 76 Stat. 255; 22 U.S.C. 2151 et seq.), and the Mutual Educational and Cultural Exchange Act of 1961, as amended (75 Stat. 527; 76 Stat. 263; 22 U.S.C. 2451 et seq.), or pursuant to agreements with international organizations. This authority shall include the execution of such contracts for all bureaus and offices of the Department under any such authorized program, subject to funds made available by such operating agencies and in-

ternational organizations under said agreements.

(4) The authority to enter into and execute contracts authorized by the Government Employees Training Act of 1961 as amended, and the Manpower Development and Training Act as amended.

(5) The authority to contract vested in the Secretary of Labor by any other law, appropriation act, or other authorized mandate or delegation of authority.

(6) The authority to procure property, supplies, equipment and services under existing contracts.

b. All procurement and contracting authority herein delegated shall be administered and exercised in accordance with the requirements and limitations of the applicable authorizing statutes, executive orders, appropriation acts, interagency and international agreements, regulations, delegations of authority, and Department of Labor policies and procedures pursuant thereto.

5. *Redelegating authority.* The Administrative Assistant Secretary may redelegate to other officers or employees of the Department of Labor any of the authority delegated herein under paragraphs 4a. (1), (3)–(6) incl.; and may so assign the administrative duties involved in accomplishing the advertising requirements under paragraph 4a.(2) above, including the execution of such advertising orders and contracts. The authority redelegated by the Administrative Assistant Secretary pursuant to this order shall be exercised under his general direction and in accordance with the procedures promulgated by him and the requirements specified in paragraph 4b. above.

6. *Action requirements.* a. The Administrative Assistant Secretary shall promulgate such procurement and contracting procedures as may be deemed necessary to carry out the purposes of this order. He shall maintain such review of the procurement and contract operations, procedures, and administration in the Department of Labor as is necessary to assure that such practices are conducted in an economical and efficient manner and in accordance with said Delegation of Authority, No. 410, dated March 26, 1962, and all applicable laws and regulations.

b. *The Solicitor.* As a general policy, all contracts of the Department are subject to review by the Solicitor. However, in order to avoid unnecessary review, all contracts entered into under the authority of this order, prepared on standard forms or forms previously approved by the Solicitor, are not required to be submitted to the Solicitor for review. If changes or additions are made in the standard forms, or forms previously approved by the Solicitor, which may affect the legal obligations arising under the contracts, they shall be submitted to the Solicitor for review.

7. *Effective date.* This order is effective immediately.

Signed at Washington, D.C., this 31st day of March 1964.

JOHN F. HENNING,
Acting Secretary of Labor.

[F.R. Doc. 64-3604; Filed, Apr. 13, 1964; 8:46 a.m.]

[Secretary's Order 13-64]

DIRECTOR, OFFICE OF ADMINISTRATIVE SERVICES, OFFICE OF THE ADMINISTRATIVE ASSISTANT SECRETARY

Redelegation of Authority To Enter Into and Execute Contracts

1. *Purpose.* This order redelegates certain authority to enter into and execute contracts for property, and services and contracts related to the training or orientation of foreign nationals, and assigns the administrative duties involved in accomplishing the publication of advertisements, notices and proposals.

2. *Directives affected.* This order implements Secretary's Order No. 10–64 dated March 31, 1964, which canceled Secretary's Orders No. 21–62 and 22–62. Provision is also made in that order for the redelegation and assignment of certain authority and duties by the Administrative Assistant Secretary.

3. *Redelegation of authority and assignment of administrative duties.*

a. The Director, Office of Administrative Services, Office of the Administrative Assistant Secretary, or officers acting in that capacity, are authorized to purchase and procure supplies, equipment, property and services, and the publication of advertisements, under existing orders and contracts, and to purchase and procure supplies, equipment, property, services, and advertising requirements and to sign orders, make awards, and enter into and execute contracts therefor, obligating funds available for such purposes appropriated or allotted to the Department of Labor or to any bureau, division, office or service of the Department. This includes the authority: (1) To procure books, newspapers, periodicals, and commerical and labor reporting services ordered by the Librarian; (2) to perform all the administrative duties involved in accomplishing the publication of advertisements, notices and proposals, including signing orders and contracts therefor; (3) to effect procurement through formal advertising, and make and sign awards and contracts therefor; (4) to enter into and execute contracts for property and services without advertising; (5) to make advance payments under executed contracts; and (6) to make the Determinations required under applicable provisions of law, except the Determinations specified in section 302 (c) (11), (12) and (13) of the Federal Property and Administrative Services Act of 1949 as amended (63 Stat. 393 et seq; 41 U.S.C. 252(c) (11), (12) and (13).

b. The Deputy Associate Commissioner for Management and the Chief, Division of Fiscal Management and Services, Bureau of Labor Statistics, or officers acting in such capacities, are individually authorized to procure property and services under existing Bureau of Labor Statistics contracts, and to procure and enter into and execute contracts for property and services, without advertising, as may be required in connection with the authorized functions performed by the Bureau of Labor Statistics, obligating funds available for such purposes appropriated or alotted to the Bureau of Labor Statistics. This includes the authority to make advance payments under executed contracts and to make the Determinations required under Title III of the Federal Property and Administrative Services Act of 1949 as amended (63 Stat. 393 et seq.; 41 U.S.C. 251 et seq.), except the Determinations specified in section 302 (c) paragraphs (11), (12), (13), and (14) of said Act (41 U.S.C. 252(c) (11), (12), (13), and (14).

c. The Chief, Division of Administration and Management, Bureau of International Labor Affairs, or officers acting in that capacity, are authorized to procure property and services under existing Bureau of International Labor Affairs contracts, and to procure and enter into and execute contracts for property and services related to the training or orientation of foreign nationals, without advertising, and to make advance payments under executed contracts therefor, pursuant to existing agreements entered into by the Department of Labor with operating Federal agencies under provisions of the Foreign Assistance Act of 1961 as amended (75 Stat. 424, 719; 76 Stat. 255; 22 U.S.C. 2151 et seq.), and the Mutual Educational and Cultural Exchange Act of 1961 as amended (75 Stat. 527; 76 Stat. 263; 22 U.S.C. 2451 et seq.), or pursuant to agreements entered into with international organizations. This authority includes the execution of such contracts for all bureaus and offices of the Department under any such authorized program, subject to funds made available by such operating Federal agencies or international organizations pursuant to said agreements, and authority to make such Determinations as may be required by law, except the Determinations specified in section 302(c) paragraphs (11), (12), (13), and (14) of the Federal Property and Administrative Services Act of 1949 as amended (63 Stat. 393, et seq.; 41 U.S.C. 252(c) (11), (12), (13), and (14).

d. The authority redelegated hereunder in subparagraphs (1), (2), (3) and (4) includes the authority to make advance payments under executed contracts and to make the Determinations required under Title III of the Federal Property and Administrative Services Act of 1949 as amended, except the Determinations specified in section 302(c) paragraphs (11), (12), (13) and (14) of said Act (63 Stat. 393, et seq.; 41 U.S.C. 252(c) (11), (12), (13) and (14).

(1) The Manpower Administrator, or officers acting in that capacity, are authorized to procure property and services under existing contracts pursuant to the Manpower Development and Training Act of 1962, and to utilize the provisions of Title III of the Federal Property and Administrative Services Act of 1949, as amended, to procure, without advertising, property and services authorized under the Manpower Development and Training Act of 1962 as amended (76 Stat. 23; 42 U.S.C. 2571 et seq.), and to enter into and execute contracts therefor, obligating funds appropriated or allotted for such purposes under the Manpower Development and Training Act of 1962 as amended.

(2) The Administrator, Bureau of Apprenticeship and Training, or officers act-

ing in that capacity, are authorized to procure property and services under existing "On-The-Job Training" contracts, and to utilize the provisions of Title III of the Federal Property and Administrative Services Act of 1949, as amended, to procure, without advertising, property and services authorized for "On-The-Job Training" projects under Title II of the Manpower Development and Training Act of 1962, as amended, and to enter into and execute contracts therefor, and obligate funds appropriated or allotted under said Title II of said Act for such purposes. This authority is further redelegated to such Regional Directors and field employees of the Bureau of Apprenticeship and Training, and for such specified "On-The-Job Training" projects, as shall hereafter be designated by the Administrator of said Bureau, subject to the prior approval of the Administrative Assistant Secretary.

(3) The Administrator, Bureau of Employment Security, or officers acting in that capacity, are authorized to utilize the provisions of Title III of the Federal Property and Administrative Services Act of 1949, as amended, to procure, without advertising, property and services under such projects authorized under Title II of the Manpower Development and Training Act of 1962, as amended, as shall be designated by the Manpower Administrator to be the responsibility of the Bureau of Employment Security, and to enter into and execute contracts therefor, and obligate funds appropriated or allotted under said Title II of said Act for such purposes. This authority is further redelegated to such Regional Administrators of the Bureau of Employment Security as shall hereafter be designated by the Administrator of said Bureau, subject to the prior approval of the Administrative Assistant Secretary.

(4) The Director, Office of Manpower, Automation and Training, or officers acting in that capacity, are authorized to procure property and services contracted for under existing Office of Manpower, Automation and Training contracts, and to utilize the provisions of Title III of the Federal Property and Administrative Services Act of 1949, as amended, to procure, without advertising, property and services authorized under Title I of the Manpower Development and Training Act of 1962, as amended, and authorized under Title II of said Act for such responsibilities thereunder as the Manpower Administrator shall assign to the Director, Office of Manpower, Automation and Training, and to enter into and execute contracts therefor, and obligate funds appropriated or allotted under said Title I and Title II of said Act for such purposes, respectively.

e. All procurements and contracts entered into pursuant to this Order shall be in compliance with the provisions, limitations, and requirements of the applicable authorizing statutes, executive orders, inter-agency and international agreements, appropriation acts, regulations, Secretary's Orders, and prescribed Department policies and procedures pursuant thereto, and internal manpower administration, bureau or office procedures consistent therewith, and with all other laws and regulations pertinent thereto.

f. Unless otherwise authorized by law, the contracting authority redelegated herein shall be exercised and administered pursuant to the provisions of Title III of the Federal Property and Administrative Services Act of 1949 as amended (63 Stat. 393, 41 U.S.C. 251 et seq.), and in accordance with the applicable limitations and requirements of said Act and the policies, procedures, limitations, controls and reporting requirements prescribed by the Administrator, General Services Administration and the Comptroller General of the United States. Such authority shall be exercised and administered under the general direction of the Administrative Assistant Secretary and in accordance with Department of Labor procurement and contract policies and procedures prescribed by him, and internal manpower administration, bureau or office procedures consistent therewith.

4. *Action requirements.* a. Copies of all executed contracts, and modifications and amendments thereto, shall be forwarded to the Office of Administrative Services, Office of the Administrative Assistant Secretary, promptly upon execution of same. These instruments shall be accompanied by signed copies of the Determinations and Findings, statements, and such other requirements and documentation as may be prescribed by applicable law and regulation and Department of Labor policies and procedures.

b. As a general policy, all contracts of the Department are subject to review by the Solicitor. However, in order to avoid unnecessary review, all contracts entered into under the authority of this order, prepared on standard forms or forms previously approved by the Solicitor, are not required to be submitted to the Solicitor for review. If changes or additions are made in the standard forms or forms previously approved by the Solicitor, which may affect the legal obligations arising under the contracts, they shall be submitted to the Solicitor for review.

5. *Effective date.* This order is effective immediately.

Signed at Washington, D.C., this 2d day of April 1964.

LEO R. WERTS,
Administrative Assistant Secretary.

[F.R. Doc. 64-3605; Filed, Apr. 13, 1964; 8:46 a.m.]

INTERSTATE COMMERCE COMMISSION

FOURTH SECTION APPLICATIONS FOR RELIEF

APRIL 9, 1964.

Protests to the granting of an application must be prepared in accordance with Rule 1.40 of the general rules of practice (49 CFR 1.40) and filed within 15 days from the date of publication of this notice in the FEDERAL REGISTER.

LONG-AND-SHORT HAUL

FSA No. 38949; *Liquid Caustic Soda from Charleston, W. Va. District Points.* Filed by O. W. South, Jr., agent (No. A4482), for interested rail carriers. Rates on liquid caustic soda, in tank-car loads, from Charleston, Dock, Elk, Owens, South Charleston and South Ruffner, W. Va., to specified points in Georgia and Florida.

Grounds for relief: Market competition.

Tariff: Supplement 130 to Traffic Executive Association-Eastern Railroads, agent, tariff I.C.C. C-102.

FSA No. 38950: *Liquid Caustic Soda to Port Rayon, Tenn.* Filed by O. W. South, Jr., agent (No. A4483), for interested rail carriers. Rates on liquid caustic soda, in tank-car loads, from Charleston, Dock, Elk, Owens, South Charleston and South Ruffner, W. Va., to Port Rayon, Tenn.

Grounds for relief: Market competition.

Tariff: Supplement 130 to Traffic Executive Association-Eastern Railroads, agent, tariff I.C.C. C-102.

FSA No. 38951: *Liquid Caustic Soda to Pepperell, Ala.* Filed by O. W. South, Jr., agent (No. A4484), for interested rail carriers. Rates on liquid caustic soda, in tank-car loads, from Calvert, Ky., Baton Rouge and North Baton Rouge, and Geismar, La., Charleston and Memphis, Tenn., Charleston, W. Va., and group points, also Saltville, Va., to Pepperell, Ala.

Grounds for relief: Market competition.

Tariffs: Supplement 72 to Southern Freight Association, agent, tariff I.C.C. S-207 and other schedules named in the application.

FSA No. 38952; *Liquid Caustic Soda to Cartersville, Ga.* Filed by O. W. South, Jr., agent (No. A4489), for interested rail carriers. Rates on liquid caustic soda, in tank-car loads, from Acme and Wilmington, N.C., to Cartersville, Ga.

Grounds for relief: Market competition.

Tariff: Supplement 72 to Southern Freight Association, agent, tariff I.C.C. S-207.

By the Commission.

[SEAL] HAROLD D. MCCOY,
Secretary.

[F.R. Doc. 64-3638; Filed, Apr. 13, 1964; 8:48 a.m.]

[Notice 967]

MOTOR CARRIER TRANSFER PROCEEDINGS

APRIL 9, 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 66402. By order of April 2, 1964, the Transfer Board approved the transfer to Rodgers Brothers Express, Incorporated, 102 Maryland Ave., Paterson, N.J., of Certificate in No. MC 106702, issued June 28, 1950, to Nathaniel Rodgers, Joseph Rodgers, Samuel Rodgers, and William Rodgers, a partnership, doing business as Rodgers Bros., 102 Maryland Ave., Paterson, N.J., authorizing the transportation of: general commodities, with the usual exceptions including commodities in bulk, between Clifton, Lodi, Garfield, Passaic, Paterson, and Rutherford, N.J., on the one hand, and, on the other, points in the New York, N.Y., commercial zone, as defined in M.C.C. 665.

No. MC–FC 66609. By order of April 2, 1964, the Transfer Board approved the transfer to Russell Trumbauer, Warren E. Fluck and William F. Voight, Jr., a partnership, doing business as The Buskirk Company, Easton, Pa., of Certificates in Nos. MC 109494, MC 109494 (Sub No. 1), MC 109494 (Sub No. 5), MC 109494 (Sub No. 7) and MC 109494 (Sub No. 9), issued November 21, 1949, April 24, 1952, September 9, 1955, May 14, 1959, and February 21, 1961, respectively, to Herbert Buskirk, Easton, Pa., authorizing the transportation of: Various knitting machines and accessories therefor, between points in Alabama, Delaware, Florida, Georgia, Illinois, Indiana, Maryland, Massachusetts, Mississippi, New Jersey, New York, North Carolina, South Carolina, Pennsylvania, Rhode Island, Tennessee, Virginia, Oregon, Connecticut, Michigan, New Hampshire, Ohio, Texas, Vermont, Wisconsin, and West Virginia; Machinery, between Philadelphia, Pa., and Wilmington, Del., and between Philadelphia on the one hand, and, on the other, points in New Jersey within 35 miles of Philadelphia, and, roofing materials from Philadelphia, Pa., to Wilmington, Del. and points in New Jersey within 35 miles of Philadelphia. Albert E. Enoch, 556 Main Street, Bethlehem, Pa., representative for applicants.

No. MC–FC 66658. By order of April 2, 1964, the Transfer Board approved the transfer to Jacob Los and John Vriezen, a partnership, doing business as Los & Vriezen Transfer & Storage, Delavan, Wis., of Certificate in No. MC 106133 issued July 20, 1950, to John S. Welch, doing business as Welch Transfer & Storage Co., Delavan, Wis., authorizing the transportation of household goods, over irregular routes, between points in Racine, Kenosha, and Walworth Counties, Wis., on the one hand, and, on the other, points in Illinois. Los & Vriezen, 360 Bradley Avenue, Delavan, Wisconsin, representative for transferee. John S. Welch, 525 East Washington Street, Delavan, Wisconsin, representative for transferor.

No. MC–FC 66664. By order of April 2, 1964, the Transfer Board approved the transfer to B & W Transport Co., Inc., Austell, Ga., of the operating rights issued by the Commission July 10, 1963, under Permit in No. MC 123989 (Sub No. 2), to James R. Bennett and Francis R. Weyandt, a partnership, doing business as B & W Transport Company, Austell, Ga., authorizing the transportation, over irregular routes, of latex, latex compounds, and materials and supplies used in the compounding, production and distribution thereof, between the plant sites of Southern Latex Corporation at Austell and Dalton, Ga., and Concord, N.C., on the one hand, and, on the other, Cheswold, Del., and points in Alabama, Arkansas, Georgia, Louisiana, Mississippi, Tennessee, North Carolina, South Carolina, and Virginia. Samuel W. Earnshaw, 983 National Press Building, Washington 4, D.C., attorney for applicants.

No. MC–FC 66679. By order of April 2, 1964, the Transfer Board approved the transfer to Mary O'Pezio, Victor O'Pezio, Joseph O'Pezio, and John O'Pezio, a partnership, doing business as Lawrence O'Pezio & Sons, Bay Shore, N.Y., applicant in No. MC 60505 (Sub No. 2) BOR–99 application filed in the name of Lawrence O'Pezio, Mary O'Pezio, administratrix, Victor O'Pezio, Joseph O'Pezio and John O'Pezio, a partnership, doing business as Lawrence O'Pezio & Sons, Bay Shore, N.Y., for certificate of registration to operate in interstate or foreign commerce authorizing operations under the former second proviso of Section 206 (a)(1) of the Act, supported by New York Certificate No. 2101, as amended, authorizing the transportation of flour, in bags, from the hamlet of Bay Shore (Suffolk County) to all points in Nassau and Suffork Counties; refused, rejected or damaged merchandise of the same description, empty bags, and used pallets in the reverse direction. Arthur J. Piken, 160–16 Jamaica Avenue, Jamaica 32, New York, attorney for applicants.

[SEAL] HAROLD D. McCOY,
Secretary.

[F.R. Doc. 64–3639; Filed, Apr. 13, 1964; 8:48 a.m.]

[Rev. S.O. 162; Taylor's I.C.C. Order 172]

ILLINOIS CENTRAL RAILROAD

Rerouting of Traffic

In the opinion of Charles W. Taylor, Agent, the Illinois Central Railroad, because of work stoppage and embargo having been issued, is unable to transport traffic routed over and to points on its lines.

It is ordered, That

(a) Rerouting traffic: Because of work stoppage and embargo placed, the Illinois Central Railroad and its connections being unable to transport traffic in accordance with shippers' routing, are hereby authorized to divert and reroute such traffic over any available route to expedite the movement regardless of the routing shown on the waybill. The billing covering all such cars rerouted shall carry a reference to this order as authority for the rerouting.

(b) Concurrence of receiving roads to be obtained: The railroad desiring to divert or reroute traffic under this order shall confer with the proper transportation officer of the railroad to which such traffic is to be diverted or rerouted, and shall receive the concurrence of such other railroad before the rerouting or diversion is ordered.

(c) Notification to shippers: Each carrier rerouting cars in accordance with this order shall notify each shipper at the time each car is rerouted or diverted and shall furnish to such shipper the new routing provided under this order.

(d) Inasmuch as the diversion or rerouting of traffic by said Agent is deemed to be due to carrier's disability, the rates applicable to traffic diverted or rerouted by said Agent shall be the rates which were applicable at the time of shipment on the shipments as originally routed.

(e) In executing the directions of the Commission and of such Agent provided for in this order, the common carriers involved shall proceed even though no contracts, agreements, or arrangements now exist between them with reference to the divisions of the rates of transportation applicable to said traffic; divisions shall be, during the time this order remains in force, those voluntarily agreed upon by and between said carriers; or upon failure of the carriers to so agree, said divisions shall be those hereafter fixed by the Commission in accordance with pertinent authority conferred upon it by the Interstate Commerce Act.

(f) Effective date: This order shall become effective at 12:01 p.m., April 8, 1964.

(g) Expiration date: This order shall expire at 11:59 p.m., April 30, 1964, unless otherwise modified, changed, suspended, or annulled.

It is further ordered, 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., April 8, 1964.

INTERSTATE COMMERCE COMMISSION
[SEAL] CHARLES W. TAYLOR,
Agent.

[F.R. Doc. 64–3640; Filed, Apr. 13, 1964; 8:48 a.m.]

CUMULATIVE CODIFICATION GUIDE—APRIL

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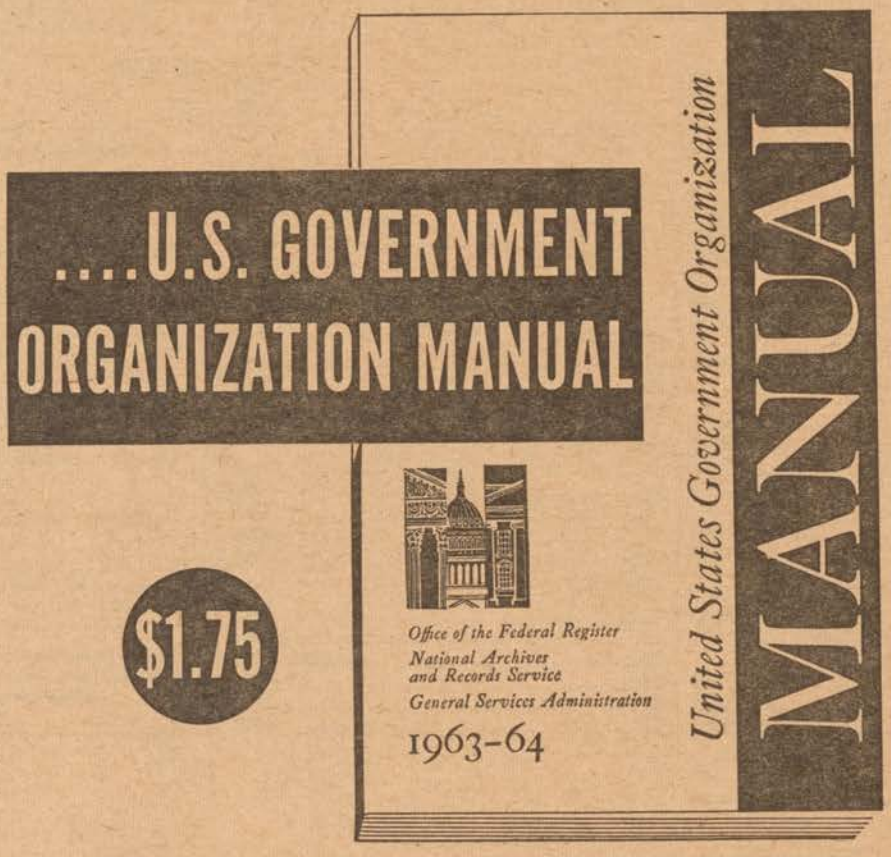

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PART II

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VOLUME 29 NUMBER 73

Washington, Tuesday, April 14, 1964

Federal Aviation Agency

Proposed Airworthiness Standards: Normal, Utility, and Acrobatic Category Airplanes

Proposed Rule Making

FEDERAL AVIATION AGENCY

[14 CFR Parts 3, 23 [New]]

[Reg. Docket No. 4080; Notice 64–17]

AIRWORTHINESS STANDARDS: NORMAL, UTILITY, AND ACROBATIC CATEGORY AIRPLANES

Notice of Proposed Rule Making

The Federal Aviation Agency is considering a proposal to recodify present Part 3 of the Civil Air Regulations into Part 23 [New].

Interested persons are invited to participate in the proposed recodification by submitting such written data, views, or arguments as they may desire. Communications should identify the regulatory docket or notice number and be submitted in duplicate to the Federal Aviation Agency, Office of the General Counsel: Attention Rules Docket, 800 Independence Avenue SW., Washington, D.C., 20533. All communications received within 60 days after publication of this notice in the FEDERAL REGISTER will be considered by the Administrator before taking action on the proposed recodification. The proposal contained in this notice may be changed in the light of comments received. All comments submitted will be available, both before and after the closing date for comments, in the Rules Docket for examination by interested persons.

The object of Part 23 [New] is to restate existing regulations, not to make new ones. The pertinent provisions have been freely reworded and re-arranged, subject to every precaution against disturbing existing rights, privileges, duties, or functions. In addition, in cases where well established administrative practice or construction has established authoritative interpretations, the revised language reflects the interpretations.

Each proposed recodified section is followed by a note citing the present section of the regulations upon which it is based. A cross-reference table has been placed at the end of Part 23 [New] to permit easy access from the old regulations to the new. Internal cross references to parts or sections that are not yet recodified contain a blank space for later insertion of the correct recodified number with the present number contained in brackets. When a part or section that is referred to in a cross reference is later recodified, the correct number will be inserted and the bracketed number will be dropped.

No substantive changes involving an increased burden on the public have been made in the regulations, the purpose of the recodification project being simply to streamline and clarify present regulatory language and to delete obsolete or redundant provisions. It should be noted that the definitions, abbreviations, and rules of construction contained in Part 1 [New] published in the FEDERAL REGISTER on May 15, 1962 (27 F.R. 4587), would apply to the proposed rules. In addition, those definitions in present Part 3 (and not now in Part 1 [New] or executed in proposed Part 23 [New]) that are necessary, will be recodified with the definition of the other airworthiness parts and added to Part 1 [New] prior to the adoption of Part 23 [New].

Proposed Part 21 [New] will contain the procedural requirements for type certification. These requirements, though basically identical, are now repeated in 10 separate airworthiness parts. Proposed Part 23 [New] contains the airworthiness requirements for airplanes to be certificated in the normal, utility, or acrobatic categories.

Proposed FAR § 23.21 [New] requires that all flight requirements be met at the critical combination of airplane weight and center of gravity within the range of loading conditions for which certification (in accordance with proposed Part 21 [New]) is requested. As this general rule applies to all flight tests, it has not been repeated in each test requirement.

Present CAR § 3.109(a)(2) requires that during the demonstration of longitudinal control, it must be possible at all speeds below the best angle of climb speed V_X to pitch the nose downward so that the rate of increase in airspeed is enough for prompt acceleration to V_X with power off and the airplane trimmed at 1.5 V_{S_1} or at the minimum trim speed, whichever is higher. As this is unnecessary to demonstrate longitudinal control, this requirement has been changed to permit the use of the trim speed instead of V_X. In addition, the trim requirements of § 3.112(b) require that a multiengine airplane maintain longitudinal and directional trim . . . "during climbing flight" with the critical engine inoperative and with certain other requirements. This has been changed by deleting the requirement that the airplane be in climbing flight in this demonstration as safe trim characteristics may be demonstrated without such climbing flight.

Present CAR 3 Appendix A, "Simplified Design Load Criteria for Airplanes Having a Design Weight Equal to or Less Than 6,000 Pounds", has been recodified and is Appendix A of proposed Part 23. The figures following CAR § 3.211, containing acceptable values of control surface loadings, have been consolidated and placed in Appendix B of this proposed part. Similarly, the material containing acceptable landing conditions, and the material containing an acceptable method to determine wheel spin-up loads, has been placed in Appendices C and D, respectively, of the proposed part.

When finally adopted, Part 23 [New] will include the substance of any applicable rules or amendments adopted and made effective during the period between the date of notice and the effective date of the final rule, and may also include applicable rules on which individual notices of proposed rule making have been issued and the comment period has expired, but which have not been theretofore adopted.

In consideration of the foregoing it is proposed to amend Chapter I of Title 14 of the Code of Federal Regulations by deleting Part 3 and adding a Part 23 [New] reading as hereinafter set forth.

This proposal is made under the authority of §§ 313(a), 601, and 603 of the Federal Aviation Act of 1958 (72 Stat. 752, 775, 776; 49 U.S.C. 1354(a), 1421, and 1423).

Issued in Washington, D.C., on March 25, 1964.

N. E. HALABY,
Administrator.

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3.85–5(a)	(3)
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3.567	23.923
3.568	23.925
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3.663	23.1151
3.664	23.1153
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1.0	23.217
1.1 (less last sentence)	A23.1
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2.1	(5)
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2.31	(5)
2.32	(5)
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2.4	(5)
3.1 (intro. para.)	A23.1
3.1 (less intro. para.)	A23.3
4.0	A23.5
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5.10	A23.7
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SR-425C	(2)

[1] Executed or transferred to Part 1 [New].
[2] Transferred to proposed Part 21.
[3] Surplusage.
[4] Obsolete.
[5] Not a rule.
[6] Executed.
[7] Not rules.
[8] Surplusage or not rules.
[9] Appendix B.
[10] Appendix C.
[11] Appendix D.
[12] Precedes 23.739.
[13] Surplusage or not a rule.
[14] 23.1547 (less (d)).
[15] Transferred to proposed Part 45.
[16] (Follow A23.13).
[17] Nonregulatory.
[18] Leave as is.

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AUTHORITY: The provision of this Part 23 issued under 72 Stat. 752, 775, 776; 49 U.S.C. 1354(a), 1421, and 1423.

Subpart A—General

§ 23.1 Applicability.

This part prescribes airworthiness requirements for issuing type certificates and changes to those certificates, for small airplanes. Each person who applies under Part 21 [New] for a type certificate or a change to a type certificate must show that the airplane concerned meets the applicable requirements of this part.

[Revision note: based on § 3.0]

§ 23.3 Airplane categories.

(a) The Administrator designates the following airplane categories:

(1) Normal category, for each airplane intended for nonacrobatic operation. Nonacrobatic operation includes all maneuvers incident to normal flying, stalls (except whip stalls), and turns in which the angle of bank is not great than 60 degrees.

(2) Utility category, for each airplane intended for limited acrobatic operation. Limited acrobatic operation includes all maneuvers incident to normal flying, stalls (except whip stalls), spins (if approved for the particular type of aircraft), lazy eights, chandelles, and steep turns in which the angle of bank is greater than 60 degrees.

(3) Acrobatic category, for each airplane intended for use without restrictions other than those shown to be necessary as a result of required flight tests.

(b) The Administrator may certificate an airplane under the requirements of a single category, or in more than one category, if all the requirements of each desired category are met.

[Revision note: Combines §§ 3.20 (less 2d sentence of (a)(2), (b) (2d and 3d sentences)), 3.20–1, and 3.20–2 (1st sentence)]

Subpart B—Flight Requirements

GENERAL

§ 23.21 Proof of compliance.

(a) Each applicant must show, by flight or other tests (or by calculations based upon tests if calculated results are substantially equal in accuracy to results obtainable by direct testing), that the airplane meets the requirements of this subpart.

(b) The airplane must meet the requirements of this subpart at the critical combination of airplane weight and center of gravity within the range of loading conditions for which certification is requested. This requires a systematic investigation of all probable weight and center of gravity combinations unless compliance is reasonably inferable from those actually investigated.

[Revision note: Based on § 3.61]

WEIGHT RANGE AND CENTER OF GRAVITY

§ 23.31 Weight and balance.

(a) Each applicant must establish ranges of weights and centers of gravity within which the airplane may be safely operated. If low fuel adversely affects balance or stability, the airplane must be tested under conditions simulating those that would exist when the amount of usable fuel on board does not exceed one gallon for each 12 maximum continuous horsepower of the engine or engines.

(b) The empty weight (and the corresponding center of gravity) includes all—

(1) Fixed ballast;

(2) Unusable fuel;

(3) Undrainable oil (all oil remaining in the airplane while in the ground attitude after drainage from all oil drains);

(4) Engine coolant; and

(5) Hydraulic fluid.

(c) The weight and the location of each item of equipment that is installed when the airplane is weighed must be recorded in the airplane flight manual.

[Revision note: Combines §§ 3.71, 3.73, and 3.73–3(b)]

§ 23.33 Use of ballast.

Removable ballast may be used in the airplane to comply with the flight requirements of this part, if—

(a) The place for carrying ballast is properly designed and installed, and is marked in accordance with § 23.1519; and

(b) The airplane flight manual includes instructions for the proper placement of the removable ballast under all

loading conditions for which removable ballast is necessary.

[Revision note: Based on § 3.72]

§ 23.35 Maximum certificated weight.

(a) The maximum certificated weight for airplanes may not exceed—

(1) The selected weight;

(2) The proven design weight (except as provided in § 23.371 for multiengine airplanes); or

(3) The maximum weight at which compliance with all of the applicable flight requirements of this part is demonstrated.

(b) Assuming a weight of 170 pounds for each occupant of each seat for normal category airplanes, and 190 pounds for utility and acrobatic category airplanes (except if otherwise placarded), the maximum certificated weight for any airplane may not be less than its weight with—

(1) All seats occupied, oil to full tank capacity, and at least enough fuel for one-half hour of operation at rated maximum continuous power; or

(2) The required minimum crew, and fuel and oil to full tank capacity.

[Revision note: Based on § 3.74]

§ 23.37 Minimum certificated weight.

The minimum certificated weight for airplanes may not exceed the sum of—

(a) The empty weight of the airplane as defined in § 23.31(b);

(b) The total weight of the required minimum crew (assuming a weight of 170 pounds for each crewmember);

(c) The weight of the oil at full tank capacity; and

(d) The weight of no more than the quantity of fuel required for one-half hour of operation at rated maximum continuous power.

[Revision note: Based on § 3.75]

§ 23.39 Recording of loading instructions in the airplane flight manual.

Loading instructions must be recorded in the airplane flight manual if the center of gravity under any possible loading condition between the maximum certificated weight (determined in accordance with § 23.35) and the minimum certificated weight (determined in accordance with § 23.37) is outside of—

(a) The extremes selected by the applicant;

(b) The extremes within which the structure is proven; or

(c) The extremes within which compliance with all functional requirements is demonstrated.

[Revision note: Based on § 3.76]

PERFORMANCE REQUIREMENTS

GENERAL

§ 23.49 Performance.

Each applicant must show that the airplane meets the performance requirements of this part (corrected for standard atmosphere and still air).

[Revision note: Based on § 3.81]

§ 23.51 Stalling speed.

(a) V_{S_0} is the stalling speed, if obtainable, or the minimum steady speed at which the airplane is controllable (expressed in miles per hour calibrated airspeed), with—

(1) Engine(s) idling, throttle(s) closed (or at not more than sufficient power for zero thrust at 110 percent of the stalling speed);

(2) Propeller(s) in the takeoff position;

(3) Landing gear extended;

(4) Wing flaps in the landing position;

(5) Cowl flaps closed;

(6) The center of gravity in the most unfavorable position within the allowable landing range; and

(7) The weight of the airplane equal to the weight in connection with which V_{S_0} is being used to determine compliance with a required performance standard.

(b) V_{S_0} at maximum certificated weight may not exceed 70 miles per hour for—

(1) Single engine airplanes; and

(2) Multiengine airplanes that cannot meet the minimum rate of climb specified in § 23.75(b) with the critical engine inoperative.

(c) V_{S_1} is the stalling speed, if obtainable, or the minimum steady speed at which the airplane is controllable (expressed in miles per hour calibrated airspeed), with—

(1) Engine(s) idling, throttle(s) closed (or at not more than sufficient power for zero thrust at 110 percent of the stalling speed);

(2) Propeller(s) in the takeoff position;

(3) All systems (such as flaps and landing gear) in the particular condition existing in the particular test in connection with which V_{S_1} is being used; and

(4) The weight of the airplane equal to the weight in connection with which V_{S_1} is being used as a factor to determine compliance with a required performance standard.

(d) V_{S_0} and V_{S_1} must be determined by flight tests, using the procedure specified in § 23.155.

[Revision note: Combines §§ 3.82, 3.82–1, and 3.83]

TAKEOFF

§ 23.61 Takeoff requirements for airplanes of more than 6,000 pounds maximum weight.

(a) The distance required to take off and climb over a 50-foot obstacle must be determined with—

(1) The engine(s) operating within approved limitations; and

(2) The cowl flaps in the position normally used for takeoff.

Upon reaching a height of 50 feet above the takeoff surface level, the airplane must have attained a speed of not less than 1.3 V_{S_1} unless a lower speed of not less than V_X plus 5 can be shown to be safe under all conditions, including turbulence and complete engine failure.

(b) The starting point for measuring seaplane takeoff distances may be the point at which it has attained a speed of not more than three miles per hour.

(c) The takeoff within the distance determined in accordance with paragraph (a) of this section may not require exceptional piloting skill or exceptionally favorable conditions.

(d) The distance obtained in accordance with paragraph (a) of this section, the type of surface from which the takeoff was made, and the pertinent information with respect to cowl flap position, use of flight-path control devices, and use of the landing gear retraction system, must be recorded in the airplane flight manual.

[Revision note: Combines §§ 3.84 and 3.84–2]

§ 23.63 Takeoff requirements for airplanes of 6,000 pounds or less maximum weight.

(a) Safe takeoff may not require exceptional piloting skill.

(b) The airplane, with takeoff power applied, must have sufficient elevator control—

(1) For a tail-wheel type airplane, to maintain, at a speed equal to 0.8 V_{S_1}, an attitude that will allow holding the airplane on the runway until a safe takeoff speed is attained; and

(2) For a nose-wheel type airplane to raise the nose-wheel clear of the takeoff surface at a speed equal to 0.85 V_{S_1}.

[Revision note: Based on § 3.84a]

CLIMB

§ 23.73 Climb requirements for airplanes of more than 6,000 pounds maximum weight.

(a) The airplane must have a steady rate of climb at sea level of at least 300 feet per minute and a steady angle of climb of at least 1:12 for land planes or 1:15 for seaplanes with—

(1) Not more than maximum continuous power on each engine;

(2) The landing gear retracted;

(3) The wing flaps in the takeoff position; and

(4) The cowl flaps in the position used in the cooling tests required by §§ 23.961 through 23.999.

(b) For an airplane with an engine or engines for which the takeoff and maximum continuous power ratings are identical and that has fixed-pitch, two-position, or similar propellers, a lower propeller pitch setting than that permitted by § 23.789 may be used to obtain rated engine r.p.m. at the best angle-of-climb speed if—

(1) The airplane shows marginal performance (such as when it can meet the rate of climb requirements of paragraph (a) of this section but has difficulty in meeting the angle of climb requirements of paragraph (a) or (d)); and

(2) Acceptable engine cooling is shown at the lower speed associated with the best angle of climb.

(c) A multiengine airplane must be able to maintain a steady rate of climb of at least 0.02 $V_{S_0}^2$ (in feet per minute) at an altitude of 5,000 feet with—

(1) The critical engine inoperative;

(2) The remaining engine(s) operating at not more than maximum continuous power;

(3) The inoperative propeller in the minimum drag position;

(4) The landing gear retracted;
(5) The wing flaps in the most favorable position; and
(6) The cowl flaps in the position used in the cooling tests required by §§ 23.961 through 23.999.

(d) For a balked landing, the airplane must be able to maintain a steady angle of climb at sea level of at least 1: 30 with—
(1) Takeoff power on all engines;
(2) The landing gear extended; and
(3) The wing flaps in landing position, except that, if the flaps may safely be retracted in two seconds or less without loss of altitude and without requiring sudden changes of angle of attack or an exceptional degree of piloting skill, they may be retracted.

[Revision note: Combines §§ 3.85, 3.85–3, and 3.85–5(b) (less (1) and (2))]

§ 23.75 Climb requirements for airplanes of 6,000 pounds or less maximum weight.

(a) The airplane must have a steady rate of climb at sea level of 300 feet per minute, or 10 times V_{S_1} (expressed in feet per minute), whichever is greater, with—
(1) Takeoff power applied;
(2) The landing gear extended;
(3) The wing flaps in the takeoff position; and
(4) The cowl flaps in the position used in the cooling tests required by §§ 23.961 through 23.999.

(b) A multiengine airplane with a stalling speed V_{S_0} of more than 70 miles per hour must be able to maintain a steady rate of climb of at least 0.02 $V_{S_0}^2$ (in feet per minute), at an altitude of 5,000 feet with—
(1) The critical engine inoperative;
(2) The remaining engine(s) operating at not more than maximum continuous power;
(3) The inoperative propeller in the minimum drag position;
(4) The landing gear retracted;
(5) The wing flaps in the most favorable position; and
(6) The cowl flaps in the position used in the cooling tests required by §§ 23.961 through 23.999.

(c) The steady rate of climb at 5,000 feet for a multiengine airplane with a stalling speed of 70 miles per hour or less must be determined with—
(1) The critical engine inoperative;
(2) The remaining engine(s) operating at not more than maximum continuous power;
(3) The inoperative propeller in the minimum drag position;
(4) The landing gear retracted;
(5) The wing flaps in the most favorable position; and
(6) The cowl flaps in the position used in the cooling tests required by §§ 23.961 through 23.999.

(d) For a balked landing, the airplane must be able to maintain a steady rate of climb at sea level of 200 feet per minute, or five times V_{S_0} (in feet per minute), whichever is greater, with—
(1) Takeoff power on each engine;
(2) The landing gear extended; and
(3) The wing flaps in the landing position, except that, if rapid retraction is possible with safety, without loss of altitude, and without requiring sudden changes of angle of attack or an exceptional degree of piloting skill, they may be retracted.

[Revision note: Based on § 3.85a]

LANDING

§ 23.85 Landing requirements for airplanes of more than 6,000 pounds maximum weight.

(a) The horizontal distance required to land and come to a complete stop (or to a speed of approximately three miles per hour for seaplanes or floatplanes) from a point at a height of 50 feet above the landing surface must be determined. Immediately before reaching this point, the airplane must be maintained in a steady gliding approach with a calibrated airspeed of at least 1.5 V_{S_1}.

(b) The landing within the distance determined in accordance with paragraph (a) of this section may not require exceptional piloting skill or exceptionally favorable conditions. The airplane must be able to be landed without excessive vertical acceleration, and without tending to bounce, nose over, ground loop, porpoise or water loop.

(c) The distance obtained in accordance with paragraph (a) of this section, the kind of surface on which the landing was made, and the pertinent information with respect to flap position and the use of flight-path control devices must be in the airplane flight manual.

(d) Unless approved by the Administrator, reverse thrust may not be used in the determination of the horizontal distance required to land and come to a complete stop.

[Revision note: Combines §§ 3.86 and 3.86–1]

§ 23.87 Landing requirements for airplanes of 6,000 pounds or less maximum weight.

The airplane must be able to be landed safely and come to a stop without exceptional piloting skill and without excessive vertical acceleration, tendency to bounce, nose over, ground loop, porpoise, or water loop.

[Revision note: Based on § 3.87]

FLIGHT CHARACTERISTICS

§ 23.97 Flight characteristic requirements.

Each applicant must show that the airplane meets the requirements of §§ 23.107 through 23.171 at all normally expected operating altitudes, under all critical loading conditions within the center of gravity range and, unless otherwise specified, at the maximum weight for which certification is requested.

[Revision note: Based on § 3.105]

CONTROLLABILITY

§ 23.107 General.

(a) The airplane must be satisfactorily controllable and maneuverable during takeoff, climb, level flight, dive, and landing with or without power. It must be possilbe to make a smooth transition from one flight condition to another (including turns and slips) without an exceptional degree of skill, alertness or strength on the part of the pilot, and without danger of exceeding the limit load factor, under all conditions of operation probable for the type (including, for multiengine airplanes, those conditions normally encountered in the event of sudden failure of any engine).

(b) If, during the testing required by paragraph (a) of this section, the Administrator finds that marginal conditions exist with regard to the strength required of the pilot, quantitative testing must show that the "strength of pilots" limits do not exceed the limits prescribed in the following table:

Values in pounds of pressure	Pitch	Roll	Yaw
(a) For temporary application:			
Stick	60	30	150
Wheel (applied to rim)	75	60	150
(b) For prolonged application	10	5	20

[Revision note: Based on § 3.106]

§ 23.109 Approved acrobatic maneuvers for utility category airplanes.

Each utility category airplane must be able to safely perform all acrobatic maneuvers for which certification is requested. Safe entry speeds for these maneuvers must be determined.

[Revision note: Based on § 3.107]

§ 23.111 Acrobatic maneuvers for acrobatic category airplanes.

Each acrobatic category airplane must be able to safely perform all maneuvers for which certification is requested. Safe entry speeds for these maneuvers must be determined.

[Revision note: Based on § 3.108]

§ 23.113 Longitudinal control.

(a) It must be possible, at all speeds below the trim speed, to pitch the nose of the airplane downward so that the rate of increase in airspeed allows prompt acceleration to the trim speed with—
(1) Maximum continuous power on each engine and the airplane trimmed for V_X;
(2) Power off and the airplane trimmed for 1.5 V_{S_1} or for the minimum trim speed, whichever is higher; and
(3) Wing flaps and landing gear (i) retracted, and (ii) extended.

(b) It must be shown that, with the landing gear extended, no change in trim control or exertion of more control force than can be readily applied with one hand for a short period of time is required for any of the following maneuvers:
(1) With power off, flaps retracted, and the airplane trimmed for 1.5 V_{S_1}, or for the minimum trim speed, whichever is higher, extend the flaps as rapidly as possible while maintaining the airspeed at approximately 40 percent above the instantaneous value of the stalling speed.
(2) Repeat subparagraph (1) except initially extend the flaps and then retract them as rapidly as possible.

(3) Repeat subparagraph (2) except with maximum continuous power.

(4) With power off, flaps retracted, and the airplane trimmed for 1.5 V_{S_1}, or for the minimum trim speed, whichever is higher, apply takeoff power quickly while maintaining the same airspeed.

(5) Repeat subparagraph (4), except with the flaps extended.

(6) With power off, flaps extended, and the airplane trimmed for 1.5 V_{S_1}, or for the minimum trim speed, whichever is higher, obtain and maintain any airspeed between 1.1 V_{S_1} and either 1.7 V_{S_1} or V_F, whichever is lower.

(c) It must be possible, without exceptional piloting skill, to maintain approximately level flight when flap retraction from any position is made during steady horizontal flight at 1.1 V_{S_1} with simultaneous application of not more than maximum continuous power.

(d) It must be possible, with a pilot control force of not more than 10 pounds, to maintain a speed of not more than 1.5 V_{S_1} during a power-off glide with landing gear and wing flaps extended, and with—

(1) The most forward center of gravity approved at the maximum weight; and

(2) The most forward center of gravity approved at any weight.

(e) It must be possible, by using all normal flight and power controls except the primary longitudinal control, to control the descent of the airplane to a zero rate of descent and to an attitude suitable for a controlled landing, without exceptional skill, alertness, or strength on the part of the pilot, and without exceeding the operational and structural limitations of the airplane.

[Revision note: Based on § 3.109]

§ 23.115 Lateral and directional control.

(a) For each multiengine airplane, it must be possible to make turns with 15 degrees of bank both towards and away from an inoperative engine, from a steady climb at 1.4 V_{S_1} or V_Y for the condition with—

(1) The remaining engine(s) at not more than maximum continuous power;

(2) The rearmost allowable center of gravity;

(3) The landing gear (i) retracted, and (ii) extended;

(4) The wing flaps in the most favorable climb position;

(5) The maximum certificated weight; and

(6) The inoperative propeller in its minimum drag condition.

(b) For each multiengine airplane, it must be possible, while holding the wings level laterally within five degrees, to execute sudden changes in heading in both directions without encountering dangerous characteristics. This must be demonstrated at 1.4 V_{S_1} or V_Y with heading changes up to 15 degrees (except that the heading change at which the rudder force corresponds to the limits specified in § 23.107 need not be exceeded), with—

(1) The critical engine inoperative;

(2) The remaining engine(s) at maximum continuous power;

(3) The landing gear (i) retracted, and (ii) extended;

(4) The wing flaps in the most favorable climb position;

(5) The inoperative propeller in its minimum drag condition; and

(6) The center of gravity at its rearmost allowable position.

[Revision note: Based on § 3.110]

§ 23.117 Minimum control speed.

(a) The minimum speed must be determined at which, when any one engine is suddenly made inoperative, it is possible to recover control of the airplane with that engine still inoperative and maintain straight flight, either with zero yaw, or, at the option of the applicant, with an angle of bank of not more than five degrees. This speed V_{MC} may not exceed 1.2 V_{S_1} with—

(1) Takeoff or maximum available power on all engines;

(2) The rearmost allowable center of gravity;

(3) The flaps in the takeoff position; and

(4) The landing gear retracted.

(b) The rudder forces required to maintain V_{MC} may not exceed the limitations set forth in § 23.107, nor may it be necessary to throttle the remaining engine or engines. During recovery, the airplane may not assume any dangerous attitude nor require exceptional skill, alertness or strength on the part of the pilot, to prevent a change of heading in excess of 20 degrees.

[Revision note: Based on § 3.111]

TRIM

§ 23.127 Trim requirements.

(a) After being trimmed, and without further pressure upon or movement of either the primary controls or their corresponding trim controls by the pilot or the automatic pilot, the airplane must maintain—

(1) Lateral and directional trim in level flight at a speed of 0.9 V_H or V_C, whichever is lower, with the landing gear and wing flaps retracted; and

(2) Longitudinal trim in—

(i) A climb with maximum continuous power at a speed between V_X and 1.4 V_{S_1}, with the landing gear and wing flaps retracted;

(ii) A climb with maximum continuous power at a speed between V_X and 1.4 V_{S_1}, with the landing gear retracted and the wing flaps in the takeoff position;

(iii) A power approach at 1.5 V_{S_1}, with a three degree angle of descent, the landing gear extended, and the wing flaps retracted;

(iv) A power approach at 1.5 V_{S_1}, with a three degree angle of descent, the landing gear and wing flaps extended, and the most forward center of gravity approved for the maximum weight;

(v) A power approach at 1.5 V_{S_1}, with a three degree angle of descent, the landing gear and wing flaps extended, and the most forward center of gravity approved for any weight; and

(vi) Level flight at any speed from 0.9 V_H to V_X or 1.4 V_{S_1}, with landing gear and wing flaps retracted.

(b) In addition to the requirements of paragraph (a) of this section, each multiengine airplane must maintain longitudinal and directional trim at a speed between V_Y and 1.4 V_{S_1}, with—

(1) The critical engine inoperative;

(2) The remaining engine(s) at maximum continuous power;

(3) The landing gear retracted;

(4) The wing flaps retracted; and

(5) An angle of bank of not more than five degrees.

[Revision note: Based on § 3.112]

STABILITY

§ 23.137 Stability.

The airplane must be longitudinally, directionally, and laterally stable in accordance with §§ 23.139 through 23.145. In addition, the airplane must show suitable stability and control "feel" (static stability) in all conditions normally encountered in service, if flight tests show that kind of stability is necessary for safe operation.

[Revision note: Based on § 3.113]

§ 23.139 Static longitudinal stability.

(a) Under the conditions specified in paragraph (b) of this section, and with the airplane trimmed as indicated, the elevator control forces and the friction within the control system must be designed in accordance with the following:

(1) A pull must be required to obtain and maintain speeds below the specified trim speed and a push required to obtain and maintain speeds above the specified trim speed. This must be shown at any speed that can be obtained without excessive control force, except speeds greater than the appropriate maximum allowable speed or less than the minimum speed for steady unstalled flight.

(2) The airspeed must return to within plus or minus 10 percent of the original trim speed when the control force is slowly released at any speed within the speed range specified in subparagraph (1) of this paragraph.

(3) The stable slope of the stick forces versus speed curve, throughout the speed ranges specified in paragraph (b) of this section, must make any substantial change in speed clearly perceptible to the pilot through resulting changes in stick forces.

(b) Compliance with the static longitudinal stability requirements of paragraph (a) of this section must be shown under the following conditions:

(1) *Approach at all speeds between 1.1 V_{S_1} and 1.8 V_{S_1}.* Under this condition the stick force curve must have a stable slope and the stick force may not exceed 40 pounds with—

(i) The wing flaps in the landing position;

(ii) The landing gear extended;

(iii) The maximum certificated weight; and

(iv) The airplane trimmed for 1.9 V_{S_1} with sufficient power to maintain a three degree angle of descent.

(2) *Climb at all speeds between 1.2 V_{S_1} and 1.6 V_{S_1}.* Under this condition the stick force curve must have a stable slope with—

(i) The wing flaps retracted;

(ii) The landing gear retracted;

(iii) The maximum certificated weight;

(iv) 75 percent of maximum continuous power; and

(v) The airplane trimmed at 1.4 V_{S_1}.

(3) *Cruising at all speeds between 1.3 V_{S_1} and the maximum allowable speed.* Under this condition the stick force curve must have a stable slope at all speeds obtainable with a stick force not exceeding 40 pounds, with—

(i) The landing gear retracted;

(ii) The wing flaps retracted;

(iii) The maximum certificated weight;

(iv) 75 percent of maximum continuous power; and

(v) The airplane trimmed for level flight.

(4) The same condition as that in subparagraph (3), except with the landing gear extended and without exceeding level flight trim speed.

[Revision note: Combines §§ 3.114 and 3.115]

§ 23.141 Instrumented stick force measurements.

Instrumented stick force measurements must be made unless changes in speed are clearly reflected by changes in stick forces and the maximum forces obtained in complying with § 23.139 are not excessive.

[Revision note: Based on § 3.116]

§ 23.143 Dynamic longitudinal stability.

Any short period oscillation occurring between the stalling speed and the maximum allowable speed must be heavily damped with the primary controls (1), free and (2), in a fixed position.

[Revision note: Based on § 3.117]

§ 23.145 Directional and lateral stability.

(a) *Three-control airplanes.* The stability requirements for three-control airplanes are as follows:

(1) The static directional stability, as shown by the tendency to recover from a skid with the rudder free, must be positive for all landing gear and flap positions appropriate to the takeoff, climb, cruise, and approach, configurations. This must be shown with symmetrical power up to maximum continuous power, and at all speeds from 1.2 V_{S_1} up to the maximum allowable speed for the condition being investigated. The angle of skid for these tests must be appropriate to the type of airplane. At greater angles of skid up to that at which full rudder is employed or a control force limit contained in § 23.107 is obtained, whichever occurs first, and at speeds from 1.2 V_{S_1} to V_A, the rudder pedal force must not reverse.

(2) The static lateral stability, as shown by the tendency to raise the low wing in a slip, must be positive for all landing gear and flap positions. This must be shown with symmetrical power up to 75 percent of maximum continuous power at all speeds above 1.2 V_{S_1}, up to the maximum allowable speed for the configuration being investigated. The static lateral stability may not be negative at a speed of 1.2 V_{S_1}. The angle of slip for these tests must be appropriate to the type of airplane but in no case may the slip angle be less than that obtainable with 10 degrees of bank.

(3) In straight, steady slips at a speed of 1.2 V_{S_1} for all landing gear and flap positions, and for all symmetrical power conditions up to 50 percent of maximum continuous power, the aileron and rudder control movements and forces must increase steadily (but not necessarily in constant proportion) as the angle of slip is increased up to the maximum appropriate to the type of airplane. At greater rudder angles up to the angle at which the full rudder or aileron control is used or a control force limit contained in § 23.107 is obtained, the rudder pedal force may not reverse. Sufficient bank must accompany slipping to hold a constant heading. Rapid entry into, or recovery from, a maximum slip may not result in uncontrollable flight characteristics.

(4) Any short period oscillation, occurring between stalling speed and the maximum permissible speed, must be heavily damped with the primary controls (i) free and (ii) in a fixed position.

(b) *Two-control (or simplified control) airplanes.* The stability requirements for two-control airplanes are as follows:

(1) The directional stability of the airplane must be demonstrated by showing that, in all configurations, it can be rapidly rolled from a 45 degree bank in one direction to a 45 degree bank in the opposite direction without showing dangerous skid characteristics.

(2) The lateral stability of the airplane must be demonstrated by showing that it will not assume a dangerous attitude or speed when all controls are abandoned for two minutes. This demonstration must be made in moderately smooth air with the airplane trimmed for straight level flight at 0.9 V_H or V_C, whichever is lower, with flaps and landing gear retracted, and with a rearward center of gravity.

(3) Any short period oscillation occurring between the stalling speed and the maximum allowable speed must be heavily damped with the primary controls (i) free and (ii) in a fixed position.

[Revision note: Based on § 3.118]

STALLS

§ 23.155 Stalling demonstration.

(a) Stalls must be demonstrated with—

(1) Power off; and

(2) A power setting of not less than that required to show compliance with § 23.73(a) for an airplane of more than 6,000 lbs. maximum weight, or with 90 percent of maximum continuous power for an airplane of 6,000 lbs. or less maximum weight.

(b) In either condition required by paragraph (a) of this section, it must be possible to comply with the applicable requirements of this section with flaps and landing gear in any position.

(c) For an airplane with independently controlled rolling and directional controls, it must be possible to produce and to correct roll by unreversed use of the rolling control and to produce and correct yaw by unreversed use of the directional control, up to the time the airplane pitches in the maneuver prescribed by paragraph (h) of this section.

(d) For an airplane with or without interconnected rolling and directional controls, it must be possible to produce and to correct roll by unreversed use of the rolling control without producing excessive yaw, up to the time the airplane pitches in the maneuver prescribed by paragraph (h) of this section.

(e) During the recovery portion of the maneuver prescribed by paragraph (h) of this section, it must be possible to prevent more than 15 degrees of roll or yaw by the normal use of the controls.

(f) Any loss of altitude greater than 100 feet, or any pitch greater than 30 degrees below flight level, occurring during the recovery portion of the maneuver prescribed by paragraph (h) of this section must be recorded in the airplane flight manual.

(g) A clear and distinctive stall warning must precede the stalling of the airplane, with the flaps and the landing gear in any position, both in straight and in turning flight. The stall warning must begin at a speed exceeding the stalling speed by not less than five and not more than 10 miles per hour, and must continue until the stall occurs.

(h) The following procedure must be used to show compliance with paragraphs (c) through (g) of this section:

(1) With the trim controls adjusted for straight flight at 1.5 V_{S_1}, or at the minimum trim speed, whichever is higher, reduce the speed by means of the elevator control until the speed is slightly above the stalling speed.

(2) Pull back the elevator control so that the rate of speed reduction will not exceed one mile per hour per second until a stall is produced, as shown by an uncontrollable downward pitching motion of the airplane, or until the control reaches the stop. Normal use of the elevator control for recovery is allowed after the pitching motion has unmistakeably developed.

(i) Except where made inapplicable by the special features of a particular type of airplane, the following procedure must be used to measure loss of altitude during a stall:

(1) The approach to the stall must be made as prescribed in paragraph (h) of this section.

(2) The loss of altitude encountered in the stall (power on or power off) is the change in altitude (as observed on the sensitive altimeter testing installation) between the altitude at which the

airplane pitches and the altitude at which horizontal flight is regained.

(3) Power used during the recovery portions of a stall maneuver may, at the discretion of the inspector, be that which would likely be used by a pilot under normal operating conditions when executing this particular maneuver. However, the power used to regain level flight may not be applied until the airplane has regained flying control at a speed of approximately 1.2 V_{S_1}. During investigation of stalls with the critical engine inoperative, the power may be reduced on the operating engine or engines before reapplying power for the purpose of regaining level flight.

[Revision note: Combines §§ 3.120 and 3.120–1 (less 1st sentence)]

§ 23.157 Climbing stalls.

It must be possible, when stalled from an excessive climb attitude, to recover without exceeding airspeed or acceleration limits.

[Revision note: Based on § 3.121]

§ 23.159 Turning flight stalls.

(a) When stalled during a coordinated turn with 30 degrees of bank, 75 percent maximum continuous power on each engine, and flaps and landing gear retracted, it must be possible to regain normal level flight without excessive loss of altitude or uncontrollable rolling or spinning tendencies.

(b) The following maneuver must be used to show compliance with paragraph (a) of this section. Establish a steady, curvilinear, level, coordinated turn in a 30 degree bank and, while maintaining the 30 degree bank, stall the airplane by steadily and progressively tightening the turn with the elevator control until the airplane is stalled, or until the elevator has reached its stop. When the stall has fully developed, regain level flight with normal use of the controls.

[Revision note: Based on § 3.122]

§ 23.161 One-engine inoperative stalls.

(a) A multiengine airplane must have stall characteristics which preclude unintentional spin entry. These characteristics must be shown by performing the maneuver prescribed in paragraph (b) of this section, at the lowest practical altitude, with—

(1) The critical engine inoperative and its propeller in the normal inoperative position;

(2) Landing gear extended, with the flaps (i) retracted and (ii) extended; and

(3) The remaining engine(s) operating at full throttle or maximum continuous power.

(b) The following maneuver must be used to show that unintentional spin entry is impossible. Establish a steady, curvilinear turn and, while maintaining a 15 degree bank (1), toward and (2) away from the inoperative engine, steadily increase the angle of attack with the elevator control until an uncontrollable downward pitching motion of the airplane occurs. In performing this maneuver, it must be possible to—

(1) Produce and correct roll by unreversed use of the lateral control until the airplane stalls; and

(2) Recover immediately to full flight control with wings level, from the stalled condition, by normal use of the controls, reducing power on the operating engine or engines if desired, without the airplane exceeding a 60 degree angle of bank.

(c) The loss of altitude (as measured from the altitude at which the airplane starts to pitch uncontrollably to the altitude at which level flight is regained and the pitch angle must be recorded in the airplane flight manual.

[Revision note: Based on § 3.123]

SPINNING

§ 23.171 Spinning.

(a) *Normal category airplanes.* A single-engine, normal category airplane must be able to recover from a one-turn spin in not more than one additional turn, with the controls used in the manner normally used for recovery. For both the flaps-retracted and flaps-extended conditions, the applicable airspeed limit and positive limit maneuvering load factor may not be exceeded. For the flaps-extended condition, the flaps may be retracted during recovery. In addition, there may be no excessive back pressure during the spin or recovery. It may not be possible to obtain uncontrollable spins with any possible use of the controls. Each normal category airplane, regardless of weight, must be placarded against spins unless it is shown to be "characteristically incapable of spinning", in which case it must be so designated.

(b) *Utility category airplanes.* A utility category airplane must conform to either all of the requirements of paragraph (a) of this section or all of the requirements of paragraph (c) of this section.

(c) *Acrobatic category airplanes.* An acrobatic category airplane must be able to spin at least six turns, and must be able to conform to the following requirements:

(1) The airplane must recover from any point in a spin, not exceeding six turns with flaps retracted and one turn with flaps extended, in not more than one and one-half additional turns after normal recovery application of the controls.

(2) For both the flaps-retracted and flaps-extended conditions, the applicable airspeed limit and positive limit maneuvering load factor may not be exceeded. For the flaps-extended condition, the flaps may be retracted during recovery, if a placard is installed prohibiting intentional spins with flaps extended.

(3) It may not be possible to obtain uncontrollable spins with any use of the controls.

(4) A placard listing the use of the controls required to recover from spinning maneuvers must be in the cockpit of the airplane.

(d) If the applicant desires to designate an airplane as a type "characteristically incapable of spinning", he must show this characteristic with—

(1) A maximum weight five percent greater than the weight for which approval is requested;

(2) A center of gravity at least three percent aft of the rearmost position for which approval is requested;

(3) An available elevator up-travel four degrees in excess of that to which the elevator travel is to be limited for approval; and

(4) An available rudder travel seven degrees, in both directions, in excess of that to which the rudder travel is to be limited for approval.

[Revision note: Based on § 3.124]

GROUND AND WATER CHARACTERISTICS

§ 23.181 Longitudinal stability and control.

A landplane may not have any uncontrollable tendency to nose over in any reasonably expected operating condition or when rebound occurs during landing or takeoff. Wheel brakes must operate smoothly and may not induce any undue tendency to nose over. A seaplane may not exhibit dangerous or uncontrollable porpoising at any speed at which it is normally operated on the water.

[Revision note: Based on § 3.144]

§ 23.183 Directional stability and control.

(a) There may be no uncontrollable ground or water looping tendency in 90 degree cross winds, up to a velocity equal to 0.2 V_{S_0}, at any speed at which the aircraft may be expected to be operated upon the ground or water.

(b) A landplane must be satisfactorily controllable, without exceptional skill or alertness on the part of the pilot, in power-off landings at normal landing speed, with neither brakes nor engine power used to maintain a straight path.

(c) The airplane must have adequate directional control during taxiing.

[Revision note: Based on § 3.145]

§ 23.185 Shock absorption.

The shock-absorbing mechanism may not damage the structure of the airplane when it is taxied on the roughest ground that it is reasonable to expect the airplane to meet in normal operation.

[Revision note: Based on § 3.146]

§ 23.187 Spray characteristics for seaplanes.

Spray may not dangerously obscure the vision of the pilot or pilots or damage the propeller or other parts of a seaplane at any time during taxiing, takeoff, and landing.

[Revision note: Based on § 3.147]

VIBRATION AND BUFFETING

§ 23.197 Vibration and buffeting.

Each part of the airplane must be free from excessive vibration under all speed and power conditions appropriate to the operation of the airplane, up to at least the minimum value permitted for V_D in § 23.245. In addition, there may be no buffeting in any normal flight condition severe enough to interfere with the satisfactory control of the airplane, cause

excessive fatigue to the crew, or result in structural damage.

[Revision note: Based on § 3.159]

Subpart C—Strength Requirements

§ 23.217 Loads.

(a) Strength requirements are specified in terms of—

(1) Limit loads, which are the maximum loads to be expected in service. Unless otherwise specified, all prescribed loads are limit loads.

(2) Ultimate loads, which are limit loads multiplied by prescribed factors of safety.

(b) Unless otherwise provided, the specified air, ground, and water loads must be placed in equilibrium with inertia forces, considering all items of mass in the airplane. Each of these loads must be distributed in a manner conservatively approximating or closely representing actual conditions. If deflections under load would significantly change the distribution of external or internal loads, this redistribution must be taken into account.

(c) Simplified structural design criteria may be used if the Administrator finds that they result in design loads not less than those prescribed in §§ 23.233 through 23.441. For conventional, single-engine airplanes with design weights of 6,000 pounds or less, the design criteria of Appendix A of this part are an approved equivalent of §§ 23.233 through 23.359. If Appendix A is used, the entire Appendix must be substituted for the corresponding sections of this part.

[Revision note: Combines §§ 3.171 and 1.0 of Appendix A]

§ 23.219 Factor of safety.

Unless otherwise specified in this part, a factor of safety of 1.5 must be used.

[Revision note: Based on § 3.172]

§ 23.221 Strength and deformation.

Each structure must be capable of supporting limit loads without suffering detrimental, permanent deformation. At all loads up to limit loads, the deformation must not interfere with the safe operation of the airplane. The structure must be capable of supporting ultimate loads without failure for at least three seconds. However, when proof of strength is demonstrated by dynamic tests simulating actual load conditions, the three-second limit does not apply.

[Revision note: Based on § 3.173]

§ 23.223 Proof of structure.

Each structure must conform to the strength and deformation requirements of § 23.221 for all critical load conditions. Proof of compliance by structural analysis is acceptable only when the structure conforms to types for which experience has shown such methods to be reliable. In all other cases, substantiating load tests are required. Dynamic tests, including structural flight tests, are acceptable if it is shown that the design load conditions have been simulated. Certain parts of the structure must be tested as specified in Subpart D of this part.

[Revision note: Based on § 3.174]

Flight Loads

§ 23.233 Flight loads.

(a) Flight load factors represent the ratio of the aerodynamic force component (acting normal to the assumed longitudinal axis of the airplane) to the weight of the airplane. A positive flight load factor is an aerodynamic force acting upward, with respect to the airplane.

(b) The airplane must conform to the flight load requirements in this part at critical altitudes within the range in which the airplane may be expected to operate and at all weights between the minimum design weight and the maximum design weight, with any practicable distribution of disposable load within prescribed operating limitations stated in §§ 23.1543 through 23.1547.

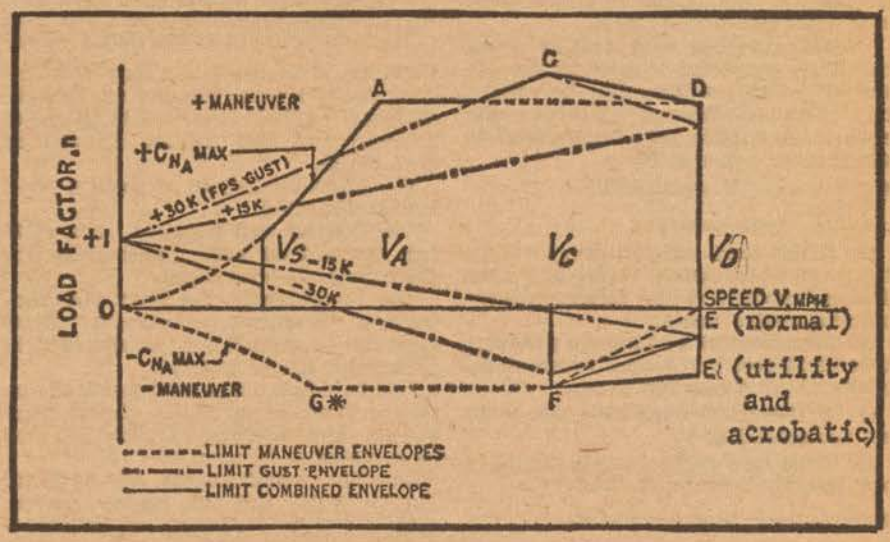
[Revision note: Combines §§ 3.181 and 3.182]

Symmetrical Flight Conditions (Flaps Retracted)

§ 23.243 General.

(a) The strength requirements must be met at all combinations of airspeed and load factor on and within the boundaries of a pertinent V–n diagram (similar to the one in paragraph (b) of this section) that represents the envelope of the flight loading conditions specified by the maneuvering and gust criteria of §§ 23.247 and 23.251, respectively.

(b) V–n diagram (flight envelope).



NOTE: Point G need not be investigated when the supplementary condition specified in § 23.285 is investigated.

[Revision note: Combines § 3.183 and Figure 3–1]

§ 23.245 Design airspeeds.

The selected design airspeeds must be equivalent airspeeds (EAS) of not less than the values derived from the following formulas:

(a) V_C (design cruising speed, m.p.h.)
$=38\sqrt{W/S}$ (for normal and utility category airplanes).
$=42\sqrt{W/S}$ (for acrobatic category airplanes).

For values of W/S greater than 20, the numerical multiplying factors must be decreased linearly with W/S to a value of 33 where $W/S=100$. The required minimum value need not be greater than 0.9 V_H actually obtained at sea level.

(b) V_D (design dive speed)
$=1.40\ V_{C\ min}$ (for normal category airplanes).
$=1.50\ V_{C\ min}$ (for utility category airplanes.
$=1.55\ V_{C\ min}$ (for acrobatic category airplanes).

For values of W/S greater than 20, the numerical multiplying factors must be decreased linearly with W/S to a value of 1.35 at $W/S=100$. $V_{C\ min}$ is the required minimum design cruising speed.

(c) V_A (design maneuvering speed, m.p.h.)
$=V_S\sqrt{n}$

where—

V_S = a computed stalling speed with flaps retracted at the design weight, normally based on the maximum airplane normal force coefficient, C_{N_A}; and

n = limit maneuvering load factor used in design.

The value of V_A need not exceed the value of V_C used in design.

[Revision note: Based on § 3.184]

§ 23.247 Maneuvering envelope.

Except where limited by maximum (static) lift coefficients, the airplane is assumed to be subjected to symmetrical maneuvers resulting in the following limit load factors:

(a) The positive maneuvering load factor specified in § 23.249 at all speeds up to V_D;

(b) The negative maneuvering load factor specified in § 23.249 at speed V_C; and

(c) Factors varying linearly with speed from the specified value at V_C to 0.0 at V_D for the normal category, and −1.0 at V_D for the acrobatic and utility categories.

[Revision note: Based on § 3.185]

§ 23.249 Limit maneuvering load factors.

(a) Positive limit maneuvering load factors may not be less than those derived as follows:

(1) $n=2.1+\frac{24{,}000}{W+10{,}000}$ for normal category airplanes except that n need not be greater than 3.8 nor may it be less than 2.5.

(2) $n=4.4$ for utility category airplanes.

(3) $n=6.0$ for acrobatic category airplanes.

(b) Negative limit maneuverng load factors not less than −0.4 times the positive load factor for the normal and utility categories, and not less than −0.5 times the positive load factor for the acrobatic category, must be used.

(c) Maneuvering load factors lower than those specified in paragraphs (a) and (b) of this section may be used if the airplane has designed features which make it impossible for the airplane to exceed these values in flight.

[Revision note: Based on § 3.186]

§ 23.251 Gust envelope.

(a) Limit loads are considered to be the loads which would result when the airplane encounters the following symmetrical vertical gusts:

(1) Positive (up) and negative (down) gusts of 30 feet per second nominal intensity at all speeds up to V_G.

(2) Positive and negative gusts of 15 feet per second at V_D.

(b) Gust load factors are assumed to vary linearly between V_G and V_D.

[Revision note: Based on § 3.187]

§ 23.253 Gust load factors.

In applying gust load requirements, the slope of the lift curve may be assumed to be that of the wing alone, and the gust load factors must be computed using the following formula:

$$n=1+\frac{KUVm}{575(W/S)}$$

where—

$K=\frac{1}{2}(W/S)^{1/4}$ (for $W/S<16$ p.s.f.);

$K=1.33-\frac{2.67}{(W/S)^{3/4}}$ (for $W/S>16$ p.s.f.);

U = nominal gust velocity, f.p.s. (Note that the "effective sharp-edged gust" equals KU);

V = airplane speed, m.p.h.;

m = slope of lift curve, C_L per radian, corrected for aspect ratio;

W/S = wing loading, p.s.f.

[Revision note: Combines §§ 3.188 - and 3.188–1]

§ 23.255 Airplane equilibrium.

(a) The appropriate balancing horizontal tail load must be accounted for in a rational or conservative manner when determining the wing loads and linear inertia loads corresponding to any of the flight conditions specified in §§ 23.243 through 23.253.

(b) The incremental horizontal tail loads due to maneuvering and gusts must be reacted by the angular inertia of the complete airplane in a rational or conservative manner.

[Revision note: Based on § 3.189]

FLAPS EXTENDED FLIGHT CONDITIONS

§ 23.265 Flaps extended flight conditions.

(a) If flaps or other high lift devices (intended for use at the relatively low airspeeds of approach, landing, and takeoff) are installed, the airplane, with the flaps fully deflected at the design flap speed V_F, is assumed to be subjected to symmetrical maneuvers and gusts resulting in limit load factors within the range determined by the conditions specified in subparagraphs (1) and (2) of this paragraph. V_F must be assumed to be not less than 1.4 V_S or 1.8 V_{SF}, whichever is greater, where—

V_S = the computed stalling speed with flaps retracted at the design weight; and

V_{SF} = the computed stalling speed with flaps fully extended at the design weight.

However, if an automatic flap load limiting device is used, the airplane may be designed for the critical combinations of airspeed and flap position allowed by that device.

(1) Maneuvering, to a positive limit load factor of 2.0.

(2) Positive and negative gusts of 15 feet per second acting normal to the flight path in level flight.

(b) In designing the flaps and supporting structures, slipstream effects must be accounted for, as specified in paragraph (b) of § 23.347.

(c) In determining external loads on the airplane as a whole, thrust, slipstream, and pitching acceleration may be assumed to be zero.

(d) The requirements of §§ 23.139 (b) (1), 23.347, and this section, may be complied with separately or in combination.

[Revision note: Combines §§ 3.190, 3.190 (Note), and 3.190–1]

UNSYMMETRICAL FLIGHT CONDITIONS

§ 23.275 Unsymmetrical flight conditions.

Unbalanced aerodynamic moments about the center of gravity must be reacted in a rational or conservative manner, considering the principal masses furnishing the reacting inertia forces. The airplane must meet the following requirements:

(a) *Rolling conditions.* The wing and wing bracing must be designed for the following loading conditions:

(1) Unsymmetrical wing loads appropriate to the airplane category. Unless the Administrator finds that the following values result in unrealistic loads, the rolling accelerations may be obtained by modifying the symmetrical flight conditions in § 23.243(b) as follows:

(i) For acrobatic category airplanes, in conditions A and F, assume that 100 percent of the wing airload acts on one side of the plane of symmetry and 60 percent of this load acts on the other side.

(ii) For normal and utility category airplanes, in condition A, assume that 100 percent of the wing airload acts on one side of the airplane and 70 percent of this load acts on the other side. For airplanes of more than 1,000 pounds design weight, the latter percentage may be increased linearly with weight up to 75 percent at 12,500 pounds.

(2) The loads resulting from the aileron deflections and speeds specified in § 23.345, in combination with an airplane load factor of at least two thirds of the positive maneuvering load factor used for design. Unless the Administrator finds that the following values result in unrealistic loads, the effect of aileron displacement on wing torsion may be accounted for by adding the following increment to the basic airfoil moment coefficient over the aileron portion of the span in the critical condition determined in § 23.243(b):

$\Delta cm=-0.01\delta$

where—

Δcm is the moment coefficient increment; and δ is the down aileron deflection in degrees in the critical condition.

(b) *Yawing conditions.* The airplane must be designed for yawing loads resulting from the loads specified in §§ 23.331 through 23.335, on the vertical tail surfaces.

[Revision note: Based on § 3.191]

SUPPLEMENTARY CONDITIONS

§ 23.285 Special conditions for rear lift truss.

(a) If a rear lift truss is used, it must be designed for conditions of reversed airflow at a design speed of—

$V=10\sqrt{W/S}+10$ (m.p.h.).

(b) Aerodynamic data for the particular wing section used, or a value of C_L equalling −0.8 with a chordwise distribution that is triangular between a peak at the trailing edge and zero at the leading edge, must be used.

[Revision note: Based on § 3.194]

§ 23.287 Engine torque effects.

(a) Each engine mount and its support structure must be designed for the effects of—

(1) The limit torque corresponding to takeoff power and propeller speed acting simultaneously with 75 percent of the limit loads flight condition A;

(2) The limit torque corresponding to maximum continuous power and propeller speed, acting simultaneously with the limit loads from flight condition A; and

(3) The limit torque obtained by multiplying the mean torque by a factor of 1.33 for engines with five or more cylinders, or by factors of 2, 3, or 4 for engines with 4, 3, or 2 cylinders, respectively.

(b) Engine torque effects need not be investigated for any other conditions.

[Revision note: Based on § 3.195]

§ 23.289 Side load on engine mount.

The limit load factor in a lateral direction for the side load on the engine mount must be at least equal to one-third of the limit load factor for flight condition A, but may not be less than 1.33. Each engine mount and its supporting structure must be designed for this side load, which may be assumed to be independent of other flight conditions.

[Revision note: Based on § 3.196]

§ 23.291 Pressurized cabin loads.

In the case of a pressurized compartment, the following requirements must be met:

(a) The airplane structure must be strong enough to withstand the flight loads combined with pressure differential loads from zero up to the maximum relief valve setting. The external pressure distribution in flight must be accounted for. Stress concentrations must be accounted for in the design of the pressurized structure.

(b) If landings with the cabin pressurized are to be allowed, landing loads must be combined with pressure differential loads from zero up to the maximum expected during landing.

(c) The airplane structure must be strong enough to withstand the pressure differential loads corresponding to the maximum relief valve setting multiplied by a factor of 1.33. All other loads may be omitted in this case.

(d) If a pressurized cabin is separated into two or more compartments by bulkheads or a floor, the primary structure must be designed for the effects of sudden release of pressure in any compartment with external doors or windows. This condition must be investigated for the effects of failure of the largest opening in the compartment. The effects of intercompartmental venting may be considered.

[Revision note: Based on § 3.197]

CONTROL SURFACE LOADS

§ 23.301 Control surface loads.

(a) The control surface loads specified in §§ 23.303 through 23.351 are assumed to occur in the symmetrical and unsymmetrical flight conditions described in §§ 23.255 through 23.275.

(b) If allowed by the following sections, the values of control surface loading in Appendix B of this part may be used instead of using particular control surface data, to determine the detailed rational requirements of §§ 23.303 through 23.351, unless the Administrator finds that these values result in unrealistic loads.

[Revision note: Based on § 3.211]

§ 23.303 Pilot effort effects.

(a) *Airloads.* Compliance with the control surface loading requirements of this part must be shown with movable surface airloads and deflections which need not exceed the loads which would result in flight from the application of any pilot load within the ranges specified in paragraph (b) of this section. In applying this criterion, consider the effects of control system boost and servomechanisms, and the effects of tabs. In addition, the automatic pilot effort must be used for design if it alone can produce greater control surface loads than the human pilot.

(b) *Limit pilot loads.*

Control	Maximum loads for design weight W equal to or less than 5,000 pounds [1]	Minimum loads [2]
Aileron:		
Stick	67 pounds	40 pounds.
Wheel [3]	53 D in-pounds [4]	40 D in-pounds. [4]
Elevator:		
Stick	167 pounds	100 pounds.
Wheel	200 pounds	100 pounds.
Rudder	200 pounds	130 pounds.

[1] For design weight (W) greater than 5,000 pounds, the specified maximum values must be increased linearly with weight to 1.18 times the specified values at a design weight of 12,500 pounds.

[2] If the design of any individual set of control systems or surfaces makes these specified minimum loads inapplicable, values corresponding to the pertinent hinge moments obtained in accordance with § 23.361 but not less than 0.6 of the specified minimum loads, may be used.

[3] The critical portions of the aileron control system must also be designed for a single tangential force with a limit value of 1.25 times the couple force determined from the above criteria.

[4] D=wheel diameter.

[Revision note: Combines §§ 3.212. Figure 3–11, and 3.212–1]

§ 23.305 Trim tab effects.

The effects of trim tabs on the control surface design conditions must be considered only where the surface loads are limited by maximum pilot effort. In these cases, the tabs are considered to be deflected in the direction which would assist the pilot. This deflection must correspond to the maximum degree of "out of trim" expected at the speed for the condition under consideration.

[Revision note: Based on § 3.213]

HORIZONTAL TAIL SURFACES

§ 23.315 Balancing loads.

(a) A horizontal tail balancing load is the load that is necessary to maintain equilibrium in any specified flight condition with no pitching acceleration.

(b) Horizontal tail surfaces must be designed for the balancing loads occurring at any point on the limit maneuvering envelope and in the flap conditions specified in § 23.265. The distribution in figure 6 of Appendix B may be used instead of this requirement.

[Revision note: Based on § 3.215 and the note]

§ 23.317 Maneuvering loads.

Each horizontal tail surface must be designed for maneuvering loads imposed by the following conditions:

(a) At maneuvering speed V_A, a sudden deflection of the elevator control to the maximum upward deflection, as limited by the control stops, or pilot effort, whichever is critical. The average loading of B23.11 of Appendix B and the distribution in figure 7 of Appendix B may be used instead of this requirement.

(b) The same as case (a), except for downward elevator deflection. The average loading of B23.11 of Appendix B and the distribution of figure 7 of Appendix B may be used instead of this requirement.

(c) At all speeds above V_A, a sudden upward deflection of the elevator followed by a downward deflection of the elevator, resulting in the following combinations of normal and angular acceleration:

Condition	Normal acceleration (n)	Angular acceleration (radian/sec.^{2})
Down load	1.0	$\frac{+45}{V} n_m (n_m - 1.5)$
Up load	n_m	$\frac{-45}{V} n_m (n_m - 1.5)$

where—

(1) n_m=positive limit maneuvering load factor used in the design of the airplane; and

(2) V=initial speed in miles per hour.

The conditions in this paragraph involve loads corresponding to the loads that may occur in a "checked maneuver" (a maneuver in which the pitching control is suddenly displaced in one direction and then suddenly moved in the opposite direction), the deflections and timing avoiding exceeding the limit maneuvering load factor. The total tail load for both down and up load conditions is the sum of the balancing tail loads at speed V and the specified value of the normal load factor (n), plus the maneuvering load increment due to the specified value of the angular acceleration. The maneuvering load increment in figure 2 of Appendix B and the distributions in figure 7 (for down loads) and in figure 8 (for up loads) of Appendix B may be used instead of this requirement.

[Revision note: Based on § 3.216 and the notes following § 3.216 (a), (b), and (d)]

§ 23.319 Gust loads.

(a) Each horizontal tail surface must be designed for loads resulting from—

(1) Positive and negative gusts of 30 feet per second nominal intensity at V_C, corresponding to the flight condition specified in § 23.251(a) with flaps retracted; and

(2) Positive and negative gusts of 15 feet per second nominal intensity at speed V_F, corresponding to the flight condition specified in § 23.265(a)(2) with flaps extended and at V_D corresponding with the flight conditions specified in § 23.251(a)(2) with flaps retracted.

(b) The average loadings in figures 3 and 4 of Appendix B and the distribution in figure 8 of Appendix B may be used instead of the requirements of subparagraph (a)(1).

(c) When determining the total load on the horizontal tail for the conditions specified in paragraph (a) of this section, the initial balancing tail loads for steady unaccelerated flight at the pertinent design speeds V_F, V_C, V_D must first be determined. The incremental tail load resulting from the gusts must be added to the initial balancing tail load to obtain the total tail load.

(d) The incremental tail load due to the gust may be computed by the following formula:

$$\Delta t = 0.1 K U V S_t a_t \left[\frac{1-36a_w}{R_w}\right]$$

where—

Δt = the limit gust load increment on the tail in pounds;
K = gust coefficient K derived from § 23.253;
U = nominal gust intensity in feet per second;
V = airplane speed in miles per hour;
S_t = tail surface area in square feet;
a_t = slope of lift curve of tail surface, C_L per degree, corrected for aspect ratio;
a_w = slope of lift curve of wing, C_L per degree; and
R_w = aspect ratio of the wing.

[Revision note: Based on § 3.217 (and the note following § 3.217(a))]

§ 23.321 Unsymmetrical loads.

The maximum horizontal tail surface loading (load per unit area), as determined in accordance with §§ 23.315 through 23.319, must be applied to the horizontal surfaces on one side of the plane of symmetry and the following percentage of that loading must be applied to the opposite side:

$\% = 100 - 10(n-1)$ where n is the specified positive maneuvering load factor.

This value may not be greater than 80 percent.

[Revision note: Based on § 3.218]

VERTICAL TAIL SURFACES

§ 23.331 Maneuvering loads.

(a) At all speeds up to V_A, the vertical tail surfaces must be designed to withstand the loads from—

(1) A sudden displacement of the rudder control (with the airplane in unaccelerated flight with zero yaw) to the maximum deflection allowed by the control stops or by pilot strength, whichever is critical;

(2) A yaw angle of 15 degrees with the rudder fully deflected (except as limited by pilot strength) in the direction tending to increase the slip; and

(3) A yaw angle of 15 degrees with the rudder control maintained in the neutral position (except as limited by pilot strength).

(b) The average loading of B23.11 and figure 1 of Appendix B and the distribution in figures 7, 6, and 8 of Appendix B may be used instead of the requirements of subparagraphs (a)(1), (a)(2), and (a)(3), respectively.

(c) The yaw angles specified in paragraph (a)(3) of this section may be reduced if the yaw angle chosen for a particular speed cannot be exceeded in—

(1) Steady slip conditions;

(2) Uncoordinated rolls from steep banks; and

(3) Sudden failure of the critical engine with delayed corrective action.

[Revision note: Based on § 3.219 and notes]

§ 23.333 Gust loads.

(a) Vertical tail surfaces must be designed to withstand, in unaccelerated flight at V_G, a gust of 30 feet per second nominal intensity normal to the plane of symmetry.

(b) The gust loading for that part of a vertical tail surface with a well defined leading edge must be computed by the following formula:

$$\bar{w} = \frac{KUVm}{575}$$

where—

$\bar{w}$ = average limit unit pressure in pounds per square foot;
$K = 1.33 - \frac{4.5}{(W/S_v)^{3/4}}$, except that K may not be less than 1.0.

However, a value of K obtained by rational determination may be used;

U = nominal gust intensity in feet per second;
$= u$ airplane speed in miles per hour;
V = slope of lift curve of vertical surface, C_L per radian, corrected for aspect ratio;
W = design weight in pounds; and
S_v = vertical surface area in square feet.

(c) The average loading in figure 5 and the distribution in figure 8 of Appendix B may be used instead of the requirements of this section.

[Revision note: Based on § 3.220]

§ 23.335 Outboard fins.

(a) If outboard fins are on the horizontal tail surface, the tail surfaces must be designed for the maximum horizontal surface load in combination with the corresponding loads induced on the vertical surfaces by endplate effects. These induced effects need not be combined with other vertical surface loads.

(b) If outboard fins extend above and below the horizontal surface, the critical vertical surface loading (the load per unit area as determined in accordance with §§ 23.331 and 23.333) must be applied to—

(1) The part of the vertical surfaces above the horizontal surface with 80 percent of that loading applied to the part below the horizontal surface; and

(2) The part of the vertical surfaces below the horizontal surface with 80 percent of that loading applied to the part above the horizontal surface.

[Revision note: Based on § 3.221]

AILERONS, WING FLAPS, TABS, ETC., AND SPECIAL DEVICES

§ 23.345 Ailerons.

(a) The ailerons must be designed for all loads that they are subjected to while in the neutral position during symmetrical flight conditions.

(b) The ailerons must be designed for all loads that they are subjected to by the following deflections (except as limited by pilot effort) during unsymmetrical flight conditions:

(1) Sudden maximum displacement of the aileron control at speed V_A. Suitable allowance may be made for control system deflections.

(2) Sufficient deflection at V_G, where V_G is greater than V_A, to produce a rate of roll not less than that obtained in subparagraph (1).

(3) Sufficient deflection at V_D to produce a rate of roll not less than one-third of that obtained in subparagraph (1).

(c) The average loading in § 23.11 and figure 1 of Appendix B and the distribution in figure 9 of Appendix B may be used instead of the requirements of this section.

[Revison note: Based on § 3.222 (less (c) and (d))]

§ 23.347 Wing flaps.

(a) The wing flaps, their operating mechanisms, and supporting structures must be designed for critical loads occurring in the flaps-extended flight conditions with the flaps in any position. However, if an automatic flap load limiting device is used, these components may be designed for the critical combinations of airspeed and flap position allowed by that device.

(b) The effects of propeller slipstream, corresponding to takeoff power, must be taken into account at an airplane speed of not less than 1.4 V_S, where V_S is the computed stalling speed with flaps fully retracted at the design weight. For the investigation of slipstream effects, the load factor may be assumed to be 1.0.

[Revision note: Based on § 3.223]

§ 23.349 Tabs.

Control surface tabs must be designed for the most severe combination of airspeed and tab deflection likely to be obtained within the limit V–n diagram for any usable loading condition of the airplane.

[Revision note: Based on § 3.224]

§ 23.351 Special devices.

The loading for special devices employing aerodynamic surfaces, such as slots and spoilers, must be determined from test data.

[Revision note: Based on § 3.225]

CONTROL SYSTEM LOADS

§ 23.357 Primary flight controls and systems.

(a) Each flight control system and its supporting structure must be designed for loads corresponding to at least 125 percent of the computed hinge moments of the movable control surface in the conditions prescribed in §§ 23.301 through 23.351. In addition, the following applies:

(1) The system limit loads need not exceed the greater of the loads which can be produced by the pilot and automatic devices operating the controls. However, autopilot loads need not be added to pilot loads. The system must be designed for the maximum effort of the pilot or autopilot, whichever is greater. In addition, if the pilot and the autopilot act in opposition, the part of the system between them may be designed for the maximum effort of the one that imposes the lesser load.

(2) The design must, in any case, provide a rugged system for service use, considering jamming, ground gusts, taxiing downwind, control inertia, and friction.

(b) A 125 percent factor on computed hinge moments must be used to design elevator, aileron, and rudder systems. A factor as low as 1.0 may be used if hinge moments are based on accurate flight test data. However, the exact re-

duction depends upon the accuracy and reliability of the data. Acceptable maximum and minimum pilot loads for elevator, aileron, and rudder controls are shown in § 23.303(b). These pilot loads are assumed to act at the appropriate control grips or pads as they would in flight, and to react at the attachments of the control system to the control surface horns.

[Revision note: Combines §§ 3.231, 3.231–1 (1st and 4th sentences), and 3.231–2]

§ 23.359 Dual controls.

If dual controls are installed, the systems must be designed for the pilots operating in opposition, using individual pilot loads equal to 75 percent of those obtained in accordance with § 23.357. Each pilot load may not, however, be less than the minimum load specified in § 23.303(b).

[Revision note: Based on § 3.232]

§ 23.361 Ground gust conditions.

(a) If pilot effort loads less than those specified in the minimum loads column of § 23.303(b) are used for design, the effects of surface loads due to ground gusts and taxiing downwind must be investigated for the entire control system according to the following formula:

$H = KcSq$

where—

H = limit hinge moment (foot-pounds);

c = mean chord of the control surface aft of the hinge line (feet);

S = area of control surface aft of the hinge line (square feet);

q = dynamic pressure (pounds per square foot) based on a design speed not less than $10\sqrt{W/S+10}$ miles per hour, except that the design speed need not exceed 60 miles per hour; and

K = factor as specified below. (In connection with ailerons and elevators, a positive value of K indicates a moment tending to depress the surface while a negative value of K indicates a moment tending to raise the surface.)

Surface	*K*
(1) Aileron. Control column locked or lashed in mid-position.	+0.75
(2) Aileron. Ailerons at full throw; +moment on one aileron, −moment on the other.	±0.50
(3)(4) Elevator. Elevator (3) full up (−), and (4) full down (+).	±0.75
(5)(6) Rudder. Rudder (5) in neutral, and (6) at full throw.	±0.75

(b) If an investigation of the control system for ground gust loads is not required by paragraph (a) of this section but the applicant elects to design a part of the control system for these loads, the ground gust loads need only be carried from control surface horns through the nearest stops or gust locks and their supporting structures.

[Revision note: Combines §§ 3.233 and 3.233–1]

§ 23.363 Secondary controls and systems.

Secondary controls, such as wheel brakes, spoilers, and tab controls, must be designed for the loads resulting from the maximum effort that a pilot is likely to apply to those controls.

[Revision note: Based on § 3.234]

GROUND LOADS

§ 23.369 Ground loads.

The loads specified in the following conditions are considered to be external loads and inertia forces that act upon an airplane structure. In each of the specified ground load conditions, the external reactions must be rationally or conservatively placed in equilibrium with the linear and angular inertia forces.

[Revision note: Based on § 3.241]

§ 23.371 Design landing weight.

(a) Except as provided in paragraphs (b) and (c) of this section, the design landing weight may not be less than the maximum weight for which the airplane is to be certificated.

(b) The design landing weight may be as low as 95 percent of the maximum certificated weight if—

(1) The structural limit load values at the maximum certificated weight are not exceeded when the airplane is operated at all speeds up to takeoff speed over terrain as rough as that expected in service;

(2) The minimum fuel capacity is not less than the sum of the capacities prescribed in § 23.841 plus the capacity equal to a fuel weight equal to the difference between the maximum certificated weight and the design landing weight; and

(3) The operating limitations limit the takeoff weight to assure that landing weights in normal operation do not exceed the design landing weight.

(c) The design landing weight of a multiengine airplane may be less than 95 percent of the maximum certificated weight if—

(1) The airplane meets the one-engine-inoperative climb requirements of § 23.73(c) or § 23.75 (b) and (c); and

(2) Instead of the corresponding requirements of this part, compliance is shown with the following requirements of Part 25 [New] (present Part 4b):

(i) The ground load requirements of § ——— (present § 4b.230).

(ii) The landing gear requirements of §§ ——— through ——— (present §§ 4b.331 through 4b.336).

(iii) The fuel jettisoning system requirements of § ——— (present § 4b.437).

(d) The design landing weight may be used only for structural design purposes.

[Revision note: Combines §§ 3.242 and 3.85–4 (last sentence)]

§ 23.373 Load factor for landing conditions.

The applicant must choose the limit vertical inertia load factor at the center of gravity of the airplane for the following landing conditions. However, it may not be less than the value that would be obtained when landing the airplane with a descent velocity (V), in feet per second, equal to 4.4 $(W/S)^{1/4}$, except that the descent velocity need not be more than 10 feet per second and may not be less than seven feet per second. Wing lift not exceeding two-thirds of the weight of the airplane may be assumed to exist throughout the landing impact and to act through the center of gravity. Under these assumptions, the ground reaction load factor may be taken to be equal to the inertia load factor minus the ratio of the above assumed wing lift to the airplane weight. The energy absorption tests (to determine the limit load factor corresponding to the required limit descent velocities) must be made in accordance with § 23.613. However, no inertia load factor used for design purposes may be less than 2.67, nor may the limit ground reaction load factor be less than 2.0, unless it is shown that the lower values of limit load factor will not be exceeded in taxiing the airplane at all speeds up to takeoff speed over terrain as rough as that expected in service.

[Revision note: Based on § 3.243]

LANDING CASES AND ATTITUDES

§ 23.383 General.

(a) For conventional arrangements of main and nose, or main and tail wheels, it is assumed that the airplane contacts the ground at the specified limit vertical velocity in the attitudes described in §§ 23.385 through 23.389.

(b) The conditions in Appendix C conform to §§ 23.385 through 23.389.

[Revision note: Based on § 3.244]

§ 23.385 Level landing.

(a) The airplane is assumed to be in the following attitudes:

(1) For tail wheel type airplanes, a normal level flight attitude.

(2) For nose wheel type airplanes, attitudes in which—

(i) The nose and main wheels contact the ground simultaneously; and

(ii) The main wheels contact the ground and the nose wheel is just clear of the ground. (The same angular attitude as was used in subdivision (i) of this subparagraph may be used in this analysis.)

(b) When investigating landing conditions, the drag components stimulating the forces required to accelerate the tires and wheels up to the landing speed must be properly combined with the corresponding instantaneous vertical ground reactions, assuming wing lift and a tire-sliding coefficient of friction of 0.8. However, the drag loads may not be less than 25 percent of the maximum vertical ground reactions (neglecting wing lift).

(c) In determining the wheel spin-up loads for landing conditions, the method set forth in Appendix D may be used if a more rational method than the use of the arbitrary drag components referred to in § 23.383(b) is desired. However, the 25 percent value for the minimum drag component must be used.

[Revision note: Combines §§ 3.245 and 3.245–1(b) (before equation)]

§ 23.387 Tail down landing.

(a) The airplane is assumed to be in the following attitudes:

(1) For tail wheel type airplanes, an attitude in which the main and tail

wheels contact the ground simultaneously.

(2) For nose wheel type airplanes, a stalling attitude, or at the maximum angle permitting all parts of the airplane to clear the ground, whichever is lesser.

(b) For both tail and nose wheel type airplanes, all ground reactions must be assumed to be vertical, with the wheels up to speed before the maximum vertical load is attained.

[Revision note: Based on § 3.246]

§ 23.389 One wheel landing.

One side of the main gear is assumed to contact the ground while the airplane is in a level attitude. The ground reactions must be the same as those obtained in accordance with § 23.385 on that side in the level attitude.

[Revision note: Based on § 3.247]

GROUND ROLL CONDITIONS

§ 23.399 Braked roll.

In the braked roll condition, the following applies:

(a) The limit vertical load factor must be 1.33.

(b) The attitudes and ground contacts must be those described in § 23.385 for level landings, with the shock absorbers and tires deflected to their static positions.

(c) A drag reaction equal to the vertical reaction at the wheel multiplied by a coefficient of friction of 0.8 must be applied at the ground contact point of each wheel having brakes, except that the drag reaction need not exceed the maximum value based on limiting brake torque.

[Revision note: Based on § 3.248]

§ 23.401 Side load.

In the side load condition, the following applies:

(a) The airplane must be in a level attitude with only the main wheels contacting the ground and with the shock absorbers and tires deflected to their static positions.

(b) The limit vertical load factor must be 1.33, with the vertical ground reaction divided equally between the main wheels.

(c) The limit side inertia factor must be 0.83, with the side ground reaction divided between the main wheels so that—

(1) $0.5(W)$ is acting inboard on one side; and

(2) $0.33(W)$ is acting outboard on the other side.

[Revision note: Based on § 3.249]

TAIL WHEELS

§ 23.411 Supplementary conditions for tail wheels.

In determining the ground loads on the tail wheel and affected supporting structures, the following conditions must be met:

(a) For the obstruction load, the limit ground reaction obtained in the tail down landing condition must be assumed to act up and aft through the axle at 45 degrees. The shock absorber and tire may be assumed to be deflected to their static positions.

(b) For the side load, a limit vertical ground reaction equal to the static load on the tail wheel, in combination with a side component of equal magnitude, must be assumed. If a swivel is used, the tail wheel must be assumed to be swiveled 90 degrees to the airplane longitudinal axis with the resultant ground load passing through the axle. If a lock steering device or shimmy damper is used, the tail wheel must also be assumed to be in the trailing position with the side load acting at the ground contact point. The shock absorber and tire must be assumed to be deflected to their static positions.

[Revision note: Combines §§ 3.250, 3.251, and 3.252]

NOSE WHEELS

§ 23.421 Supplementary conditions for nose wheels.

In determining the ground loads on nose wheels and affected supporting structures, and assuming that the shock absorbers and tires are deflected to their static positions, the following conditions must be met:

(a) For aft loads, the limit force components at the axle must be—

(1) A vertical component of 2.25 times the static load on the wheel; and

(2) A drag component of 0.8 times the vertical load.

(b) For forward loads, the limit force components at the axle must be—

(1) A vertical component of 2.25 times the static load on the wheel; and

(2) A forward component of 0.4 times the vertical load.

(c) For side loads, the limit force components at ground contact must be—

(1) A vertical component of 2.25 times the static load on the wheel; and

(2) A side component of 0.7 times the vertical load.

[Revision note: Combines §§ 3.253 through 3.256]

SKIPLANES

§ 23.431 Supplementary conditions for skiplanes.

In determining ground loads on skiplanes, and assuming that the airplane is resting on the ground with one main ski frozen at rest and the other main ski and the tail ski free to slide, a limit side force equal to $P/3$ must be applied at the most convenient point near the tail assembly with—

(a) P being the static ground reaction on the tail ski; and

(b) A factor of safety equal to 1.0.

[Revision note: Based on § 3.257]

WATER LOADS

§ 23.441 Water load conditions.

(a) The structure of boat and float type seaplanes must be designed for water loads developed during takeoff and landing with the seaplane in any attitude likely to occur in normal operation at appropriate forward and sinking velocities under the most severe sea conditions likely to be encountered. Unless the applicant makes a rational analysis of the water loads, §§ ———— through ———— (present §§ 4b.251 through 4b.258) apply.

(b) Floats certificated under Part 4a before November 9, 1945, may be installed on airplanes that are designed in accordance with this part.

(c) The requirements set forth in ANC–3 may be used instead of those of paragraph (a) of this section.

[Revision note: Combines §§ 3.265, 3.265–1 (a), and 3.265–2]

FATIGUE EVALUATION

§ 23.451 Pressurized cabins.

The strength, detail design, and fabrication of the pressure cabin structure must be evaluated in accordance with either of the following:

(a) Fatigue strength investigation, in which the structure is shown by analysis, tests, or both to be able to withstand the repeated loads of variable magnitude expected in service.

(b) Fail safe strength investigation, in which it is shown by analysis, tests, or both that catastrophic failure of the structure is not probable after fatigue failure or obvious partial failure of a principal structural element, and that the remaining structures are able to withstand a static ultimate load factor of 75 percent of the limit load factor at V_C, considering the combined effects of normal operating pressures, expected external aerodynamic pressures, and flight loads. These loads must be multiplied by a factor of 1.15 unless the dynamic effects of failure under static load are otherwise considered.

[Revision note: Based on § 3.270]

Subpart D—Design and Construction

§ 23.471 General.

The suitability of all questionable design details or parts that have an important bearing on safety in operations, must be established by tests.

[Revision note: Based on § 3.291]

§ 23.473 Materials and workmanship.

The suitability and durability of materials used in the airplane structure must be established on the basis of experience or tests. The materials used in the airplane structure must conform to approved specifications that insure that they have the strength and other properties assumed in the design data. Workmanship must be of a high standard.

[Revision note: Based on § 3.292]

§ 23.475 Fabrication methods.

The methods of fabrication used must produce consistently sound structures. If a fabrication process (such as gluing, spot welding, or heat-treating) requires close control to attain this objective, the process must be performed in accordance with an approved process specification.

[Revision note: Based on § 3.293]

§ 23.477 Standard fastenings.

Only approved bolts, pins, screws, and rivets may be used in the structure. Approved locking devices and methods must be used for all of those bolts, pins, and screws. No self-locking nuts may be

used on bolts subject to rotation during the operation of the airplane.

[Revision note: Based on § 3.294]

§ 23.479 Protection against deterioration.

Each member of the structure must be suitably protected against deterioration or loss of strength in service due to weathering, corrosion, abrasion, or other causes. In seaplanes, special precautions must be taken against corrosion from salt water, particularly where dissimilar metals are in close proximity. Adequate provisions for ventilation and drainage of all parts of the structure must be made.

[Revision note: Based on § 3.295]

§ 23.481 Inspection provisions.

There must be adequate means to permit the close examination of all parts requiring recurring inspection, adjustments for proper alignment and function, and lubrication.

[Revision note: Based on § 3.296]

STRUCTURAL PARTS

§ 23.491 Material strength properties and design values.

(a) Material strength properties must be based on the number of tests of material conforming to specifications necessary to establish design values on a statistical basis. The design values must be chosen so that the probability of any structure being understrength because of material variations is extremely remote.

(b) Values contained in MIL–HDBK–5, "Metallic Materials and Elements for Flight Vehicle Structure", MIL–HDBK–17, "Plastics for Flight Vehicles, Part I—Reinforced Plastics", ANC–17, "Plastics for Aircraft, Part II—Transparent Glazing Materials", ANC–18 "Design of Wood Aircraft Structures", MIL–HDBK–23, "Composite Construction for Flight Vehicles, Part I—Fabrication Inspection Durability and Repair", and ANC–23, "Sandwich Construction for Aircraft, Part II—Material Properties and Design Criteria" must be used unless they are shown to be inapplicable. These manuals may be obtained from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C., 20401.

[Revision Note: Based on § 3.301 and note]

§ 23.493 Design properties.

(a) Design properties outlined in chapter 3 of MIL–HDBK–5, may be used subject to the following conditions:

(1) Where applied loads are eventually distributed through single members within an assembly, the failure of which would result in the loss of the structural integrity of the component involved, the guaranteed minimum design mechanical properties listed in MIL–HDBK–5 must be met. Examples of these items are: wing lift struts; spars in two-spar wings; sparcaps in regions such as wing cutouts and wing center sections where loads are transmitted through caps only; and primary attachment fittings dependent on single bolts for load transfer.

(2) Redundant structures in which the partial failure of individual elements would result in applied loads being safely distributed to other load carrying members may be designed on the basis of the "90 percent probability" allowable. Examples of these items are sheet-stiffener combinations and multirivet or multiple bolt connections.

(b) Design values greater than the guaranteed minimums required by paragraph (a) of this section may be used if a "premium selection" of the material is made in which a specimen of each individual item is tested before its use, to determine that the actual strength properties of that particular item will equal or exceed those used in design.

(c) Material correction factors for structural items such as sheets, sheet-stringer combinations, and riveted joints, may be omitted if sufficient test data are obtained to allow a probability analysis showing that 90 percent or more of the elements will either equal or exceed selected design allowable values.

[Revision note: Based on § 3.301–1 (less (b) (1st sentence))]

§ 23.495 Interchangeability of seam-welded and seamless steel tubing.

Seam-welded and seamless steel tubing may be interchanged as follows:

(a) SAE 4130 welded tubing conforming to Specification MIL–T–6731 and SAE 4130 seamless tubing conforming to Specification MIL–T–6736.

(b) SAE 1025 welded tubing and SAE 1025 seamless tubing conforming to Specification MIL–T–5066.

(c) SAE 8630 welded tubing conforming to Specification MIL–T–6734 and SAE 8630 seamless tubing conforming to Specification MIL–T–6732.

[Revision note: Based on § 3.301–2]

§ 23.497 Special factors.

If there is uncertainty concerning the actual strength of a part of the structure, or if the strength is likely to deteriorate in service before normal replacement, increased factors of safety must be used to insure that the reliability of that part is not less than that of the rest of the structure as specified in §§ 23.499 through 23.505.

[Revision note: Based on § 3.302]

§ 23.499 Variability factor.

For parts whose strength is subject to appreciable variability due to uncertainties in manufacturing processes and inspection methods, the factor of safety must be increased so that the probability of any part being under-strength from these causes is extremely remote. Minimum variability factors are set forth in §§ 23.501 through 23.505. Only the highest pertinent variability factor need be considered.

[Revision note: Based on § 3.303]

§ 23.501 Casting factors.

(a) For structural castings, the factor of safety prescribed in § 23.219 must be multiplied by the casting factors specified in paragraphs (b) and (c) of this section. The prescribed tests and inspections are in addition to those necessary to establish foundry quality control. Castings must be inspected in accordance with approved specifications.

(b) Each casting whose failure would preclude continued safe flight and landof the airplane, or result in serious injury to occupants, must have a casting factor of at least 1.25 and must receive 100 percent inspection by visual, radiographic, and magnetic particle or penetrant inspection methods, or by approved equivalent nondestructive inspection methods. Where such castings have a casting factor less than 1.50, three sample castings must be static tested. The test castings must conform to the strength requirements of § 23.221 at an ultimate load corresponding to a casting factor of 1.25, and must conform to the deformation requirements at a load equal to 1.15 times the limit load. Examples of these castings are structural attachment fittings, parts of flight control systems, control surface hinges and balance weight attachments, seat, berth, safety belt, and fuel and oil tank supports and attachments, and cabin pressure valves.

(c) For structural castings other than those specified in paragraph (b) of this section, the casting factors and inspections must conform to the following table. However, the percentage of castings inspected by nonvisual methods may be reduced when an approved quality control procedure is established. A casting factor of 1.0 may be used for castings procured in accordance with a specification which guarantees the mechanical properties of the material in the castings and provides for demonstation of these properties by test of coupons cut from castings on a sampling basis. The inspection requirements for these castings must be in accordance with the requirements in the following table for casting factors of 1.25 to 1.50, and the testing requirements must be in accordance with paragraph (b) of this section.

Casting factor	*Inspections*
2.0 or greater	100 percent visual.
Less than 2.0 and greater than 1.5.	100 percent visual, magmagnetic particle or penetrant or equivalent nondestructive inspection methods.
1.25 to 1.50	100 percent visual, and netic particle or penetrant, and radiographic or approved equivalent nondestructive inspection methods.

(d) No casting factor need exceed 1.25 with regard to bearing stresses regardless of the method of inspection employed. No casting factor need be used with respect to the bearing surface of a part if the bearing factor used is greater than the casting factor.

(e) Unless they support airplane structural loads, this section does not apply to casting that are pressure tested as parts of a hydraulic or fluid system.

[Revision note: Based on § 3.304]

§ 23.503 Bearing factor.

(a) The factor of safety in bearings at bolted or pinned joints must be increased to provide for—

(1) Relative motion in operation; and

(2) Joints with clearance (free fit) subject to pounding or vibration.

(b) No bearing factor need be applied if other special factors apply.

[Revision note: Based on § 3.305]

§ 23.505 Fitting factor.

A multiplying factor of safety of at least 1.15 must be used in the analysis of all fittings, the strength of which is not proven by limit and ultimate load tests in which actual stress conditions are simulated in the fitting and the surrounding structures. This factor applies to all parts of the fitting, the means of attachment, and the bearing areas of the joined members. For integral fittings, the part must be treated as a fitting up to the point where the section properties become typical of the member. No fitting factor need be applied if a type of joint design, based on comprehensive test data, is used. Examples of these joints are continuous joints in metal plating, welded joints, and scarf joints in wood, all made in accordance with approved practices.

[Revision note: Based on § 3.306]

§ 23.507 Fatigue strength.

The structure must be designated, as far as practicable, to avoid points of stress concentration where variable stresses above the fatigue limit are likely to occur in normal service.

[Revision note: Based on § 3.307]

FLUTTER AND VIBRATION

§ 23.525 Flutter and vibration prevention measures.

(a) The wings, tail, and control surfaces, must be free from flutter, airfoil divergence, and control reversal from lack of rigidity, for all conditions of operation within the limit V–n envelope. In addition—

(1) Adequate wing tortional rigidity must be demonstrated by tests or other approved methods;

(2) The mass balance of surfaces must be designed to prevent flutter; and

(3) The natural frequencies of all main structural components must be determined by vibration tests or other approved methods.

(b) Flight flutter tests are acceptable as proof of freedom from flutter if it is shown by these tests that proper and adequate attempts to induce flutter have been made within the speed range up to V_D, and that the vibratory response of the structure during the test indicates freedom from flutter.

[Revision note: Combines §§ 3.311 and 3.311–2(a)]

WINGS

§ 23.535 Proof of strength.

The strength of stressed-skin wings must be proven by load tests or by combined structural analysis and load tests.

[Revision note: Based on § 3.317]

§ 23.537 Rib tests.

Rib tests must simulate the effects of—

(a) The tortional rigidity of spars;
(b) Fixity conditions;
(c) Lateral supports;
(d) Attachment to spars;
(e) Ailerons; and
(f) High lift devices.

[Revision note: Based on § 3.318]

CONTROL SURFACES (FIXED AND MOVABLE)

§ 23.547 Proof of strength.

Limit load tests of control surfaces are required. These tests must include the horn or fitting to which the control system is attached. Instructural analyses, rigging loads due to wire bracing must be accounted for in a rational or conservative manner.

[Revision note: Based on § 3.327]

§ 23.549 Installation.

Movable tail surfaces must be installed so that there is no interference between the surfaces or their bracing when each surface is held in its extreme position and all others are operated through their full angular movement. If an adjustable stabilizer is used, it must have stops that, in the event of failure of the adjusting mechanism, will limit its travel to a range permitting safe flight and landing.

[Revision note: Based on § 3.328]

§ 23.551 Hinges.

Each control surface hinge, except those incorporating ball and roller bearings, must have a factor of safety of not less than 6.67 with respect to the ultimate bearing strength of the softest material used as a bearing. For hinges incorporating ball or roller bearings, the approved rating of the bearing may not be exceeded. Hinges must have sufficient strength and rigidity for loads parallel to the hinge line.

[Revision note: Based on § 3.329]

§ 23.553 Mass balance weights.

The supporting structure and the attachment of concentrated mass balance weights used on control surfaces must be designed for the following limit acceleration: 24g normal to the plane of the control surface; 12g fore and aft; and 12g parallel to the hinge line.

[Revision note: Based on § 3.330]

CONTROL SYSTEMS

§ 23.563 General.

Each control must operate easily, smoothly, and positive enough to allow proper performance of its functions. Controls must be arranged and identified to provide for convenience in operation and to prevent the possibility of confusion and subsequent inadvertent operation.

[Revision note: Based on § 3.335]

§ 23.565 Primary flight controls.

(a) Primary flight controls are those used by the pilot for the immediate control of pitch, roll, and yaw.

(b) The design of two-control airplanes must minimize the likelihood of complete loss of lateral or directional control in the event of failure of any connecting or transmitting element in the control system.

[Revision note: Based on § 3.336]

§ 23.567 Trimming controls.

(a) Proper precautions must be taken to prevent inadvertent, improper, or abrupt trim tab operation. There must be means adjacent to the trim control to indicate to the pilot the direction of trim control movement relative to airplane motion. In addition, there must be means to indicate to the pilot the position of the trim device with respect to the range of adjustment. This latter means must be visible to the pilot and must be located and designed so as to prevent confusion.

(b) Trimming devices must be designed so that, when any one connecting or transmitting element in the primary flight control system fails, normal trimming operation may be continued with—

(1) For single-engine airplanes, the longitudinal trimming devices; or

(2) For multiengine airplanes, the longitudinal and directional trimming devices.

(c) Tab controls must be irreversible unless the tab is properly balanced and has no unsafe flutter characteristics. Irreversible tab systems must have adequate rigidity and reliability in the portion of the system from the tab to the attachment of the irreversible unit to the airplane structure.

[Revision note: Based on § 3.337]

§ 23.569 Wing flap controls.

Each control must be designed so that, when the flap has been placed in any position upon which compliance with the performance requirements of this part is based, the flap will not move from that position unless the control is adjusted or it is moved by the automatic operation of a flap load limiting device. There must be means to indicate the flap position to the pilot. If any flap position other than retracted or fully extended is used to show compliance with the performance requirements of this part, there must be means to indicate these positions. The rate of movement of the flaps in response to the operation of the pilot's control or automatic device may not result in unsatisfactory flight or performance characteristics under steady or changing conditions of airspeed, engine power, and attitude.

[Revision note: Based on § 3.338]

§ 23.571 Wing flap position indicators.

(a) For flap installations with only the retracted and fully extended positions, an indicator is required unless—

(1) A direct operating mechanism provides a sense of "feel" and position (such as when a mechanical linkage is employed); or

(2) The flap position is readily determined without seriously detracting from other piloting duties under all conditions of flight, either day or night.

(b) For flap installations with intermediate flap positions, an indicator is required unless the installation complies with paragraph (a) (1) of this section.

[Revision note: Based on § 3.338–1]

§ 23.573 Flap interconnection.

(a) The motion of flaps on opposite sides of the plane of symmetry must be synchronized by a mechanical interconnection, unless it is shown that the airplane has safe flight characteristics

while the flaps are retracted on one side and extended on the other.

(b) Where an interconnection is used in multiengine airplanes, it must be designed to account for the unsymmetrical loads resulting from flight with the engine or engines on one side of the plane of symmetry inoperative and the remaining engine or engines at takeoff power. For single-engine airplanes, it may be assumed that 100 percent of the critical air load acts on one side and 70 percent on the other.

[Revision note: Based on § 3.339]

§ 23.575 Stops.

Each control system must have stops that positively limit the range of motion of the control surfaces. Stops must be located in the system so that wear, slackness, or take-up adjustments will not appreciably affect the range of surface travel. The stops must be able to withstand the loads corresponding to the design conditions for the control system.

[Revision note: Based on § 3.340]

§ 23.577 Control system locks.

Any control system locking device must be installed to provide unmistakable warning to the pilot when it is engaged. There must be means to prevent locks from becoming engaged in flight.

[Revision note: Based on § 3.341]

§ 23.579 Proof of strength.

Compliance with limit load requirements must be proven by tests. The direction of test loads must produce the most severe loading of the control system structure. The testing must include all fittings, pulleys, and brackets used to attach the control system to the primary structure. Analyses or individual load tests must be made to show compliance with the multiplying factor of safety requirements specified for control system joints subjected to angular motion.

[Revision note: Based on § 3.342]

§ 23.581 Operation test.

Operation tests must be made by operating the controls from the pilot compartment with the entire system loaded in a manner corresponding to the limit air loads on the surface. For secondary control systems, including adjustable stabilizers, the system loading in the operation tests need not exceed that corresponding to the maximum pilot effort established in accordance with § 23.363. In this test there may be no jamming, excessive friction, or excessive deflection.

[Revision note: Based on § 3.343]

CONTROL SYSTEM DETAILS

§ 23.591 General.

Each control system and operating device must be designed and installed in a manner that will prevent jamming, chafing, or interference, resulting from inadequate clearances or from cargo, passengers, or loose objects. Special precautions must be taken in the cockpit to prevent foreign objects from jamming the controls. Provision must be made to prevent the slapping of cables or tubes against parts of the airplane. The elements of the flight control system must have design features or must be distinctively and permanently marked to minimize the possibility of incorrect assembly which could result in malfunctioning of the control system.

[Revision note: Based on § 3.344]

§ 23.593 Cable systems.

(a) Each cable, cable fitting, turnbuckle, splice, and pulley used in the airplane must conform to approved specifications. No cable smaller than ⅛-inch diameter may be used in primary control systems. Cable systems must be designed so that there will be no hazardous change in cable tension throughout the range of travel under operating conditions and temperature variations. Provision for visual inspection must be made at all fairleads, pulleys, terminals, and turnbuckles.

(b) Each pulley type and size must correspond to the cable with which it is used, as specified in the pulley specification. Each pulley must have satisfactory guards which are closely fitted to prevent the cable from becoming misplaced or fouled, even when slack. The pulley must lie in the plane passing through the cable so that the cable does not rub against the pulley flange.

(c) Fairleads must be installed so that they do not cause a change in cable direction of more than three degrees. Clevis pins subject to load or motion and retained only by cotter pins may not be used in the control system.

(d) Turnbuckles must be attached to parts with angular motion in a manner that will positively prevent binding throughout the range of travel.

(e) Tab control cables are not part of the primary control system. Therefore, the cable diameter requirement of paragraph (a) of this section does not apply to tab control cables with high strength margins. However, where the airplane would not be safely controllable in flight and landing with tabs in the most adverse positions required for the various critical trim, weight, and center of gravity conditions, the tab systems must be designed in a manner that will provide reliability equivalent to that required for primary systems.

[Revision note: Combines §§ 3.345 and 3.345–1]

§ 23.595 Joints.

Each control system joint that is subject to angular motion in push-pull systems, except a ball and roller bearing system, must incorporate a factor of safety of at least 3.33 with respect to the ultimate bearing strength of the softest material used as a bearing. This factor may be reduced to 2.0 for those joints in cable control systems. For ball or roller bearings, the approved rating of the bearing may not be exceeded.

[Revision note: Based on § 3.346]

§ 23.597 Spring devices.

The reliability of any spring device used in the control system must be established by tests simulating service conditions, unless it is shown that failure of the spring will not cause flutter or unsafe flight characteristics.

[Revision note: Based on § 3.347]

LANDING GEAR

SHOCK ABSORBERS

§ 23.607 Tests.

The shock absorbing elements in the main, nose, and tail wheel units of the airplane must be substantiated by the tests specified in § 23.609. The shock absorbing ability of the landing gear during taxiing must be shown in the operational tests required by § 23.185.

[Revision note: Based on § 3.351]

§ 23.609 Shock absorption tests.

(a) It must be shown by energy absorption tests that the limit load factors selected for design in accordance with § 23.373 will not be exceeded in landings with the limit descent velocity specified in that section.

(b) In addition, it must be shown that, when the descent velocity is at least 1.2 times the limit descent velocity, there is a reserve of energy absorption ability. In this test there may be no failure of the shock absorbing unit, although yielding of the unit is allowed. Wing lift equal to the weight of the airplane may be assumed.

[Revision note: Based on § 3.352]

§ 23.611 Limit drop tests.

(a) If compliance with § 23.609(a) is shown by free drop tests, these tests must be made on the complete airplane, or on units consisting of wheel, tire, and shock absorber, in their proper relation, from free drop heights not less than those determined by the following formula:

$$h \text{ (inches)} = 3.6\ (W/S)^{1/2}$$

However, the free drop height may not be less than 9.2 inches and need not be greater than 18.7 inches.

(b) In simulating the permissible wing lift in free drop tests, the landing gear unit must be dropped with an effective weight determined from the following formula:

$$W_e = W\left[\frac{h+(1-L)d}{h+d}\right]$$

where—

W_e = the effective weight to be used in the drop test;

h = specified height of drop in inches;

d = deflection under impact of the tire (at the approved inflation pressure) plus the vertical component of the axle travel relative to the drop mass. (The value of d used in the computation of W_e may not exceed the value actually obtained in the drop tests);

$W = W_M$ for main gear units, and must be equal to the static weight on the particular unit with the airplane in the level attitude (with the nose wheel clear, in the case of nose wheel type airplanes);

$W = W_T$ for tail gear units, and must be equal to the static weight on the tail unit with the airplane in the tail down attitude;

$W = W_N$ for nose wheel units, and must be equal to the static reaction which will exist at the nose wheel when the mass of the airplane is concentrated at the center of gravity and exerts a force of $1.0g$ downward and $0.33g$ forward; and

L = ratio of assumed wing lift to airplane weight, but may not be greater than 0.667.

(c) The attitude in which the landing gear unit is drop tested must simulate the airplane landing condition resulting in critical energy absorption for that unit.

[Revision note: Based on § 3.353]

§ 23.613 Limit load factor determination.

(a) The limit inertia load factor must be determined from the drop test specified in § 23.611 according to the following formula:

$$n = n_j \frac{W_e}{W} + L$$

where—

n_j = the load factor developed in the drop test (that is, the acceleration (dv/dt) in g's recorded in the drop test) plus 1.0.

(b) The value of n determined in accordance with paragraph (a) may not be greater than the limit inertia load factor used in the landing conditions in § 23.373.

[Revision note: Based on § 3.354]

§ 23.615 Reserve energy absorption drop tests.

If compliance with the reserve energy absorption condition under § 23.609(b) is shown by free drop tests, the drop height may not be less than 1.44 times the drop height specified in § 23.611. In simulating wing lift equal to the airplane weight, the units must be dropped with an effective weight equal to

$$W_e = W \frac{h}{h+d}$$

where the symbols and other details are the same as the corresponding ones in § 23.611.

[Revision note: Based on § 3.355]

RETRACTING MECHANISM

§ 23.625 General.

Each landing gear retracting mechanism and its supporting structure must be designed for maximum flight load factors with the gear retracted and must also be designed for the combination of friction, inertia, brake torque, and air loads, occuring during retraction at any airspeed up to 1.6 V_{S_1} with flaps retracted, and for any load factor up to those specified in § 23.265, for the flaps-extended condition. The landing gear and retracting mechanism, including the wheel well doors, must withstand flight loads with the landing gear extended at any speed up to at least 1.6 V_{S_1} with flaps retracted. There must be positive mechanical means to keep the wheels in the extended position.

[Revision note: Combines §§ 3.356 and 3.356-1(b) (last sentence)]

§ 23.627 Emergency operation.

Except for amphibians, an airplane not having manually operated landing gear must have an auxiliary means of extending that landing gear.

[Revision note: Based on § 3.357]

§ 23.629 Operation test.

The proper functioning of the landing gear retraction mechanism must be shown by operational tests.

[Revision note: Based on § 3.358]

§ 23.631 Position indicator and warning device.

If retractable landing wheels are used, there must be means to indicate to the pilot when the wheels are secured in the extreme positions. In addition, landplanes must have an aural or equally effective warning device which functions continuously, when one or more throttles are closed, until the gear is down and locked. A throttle stop is not an acceptable alternative to an aural landing gear warning device.

[Revision note: Based on § 3.359 and last sentence of note]

WHEELS AND TIRES

§ 23.643 Wheels.

Only approved main and nose wheels may be used. The maximum static load rating of each wheel may not be less than the corresponding static ground reaction under the design maximum weight and critical center of gravity. The maximum limit load rating of each wheel must be at least the maximum radial limit load determined from the applicable ground load requirements of this part.

[Revision note: Based on § 3.361]

§ 23.645 Tires.

(a) Landing gear wheels may be equipped with any tire that properly fits the rim of the wheel, if the tire rating (assigned by the Tire and Rim Association or the Administrator) is not exceeded—

(1) By a load on each main wheel tire equal to the corresponding static ground reaction under the design maximum weight and critical center of gravity; and

(2) By a load on nose wheel tires (to be compared with the dynamic rating established for such tires) equal to the reaction obtained at the nose wheel, assuming the mass of the airplane to be concentrated at the most critical center of gravity and exerting a force of 1.0g downward and 0.31g forward, with the reactions distributed to the nose and main wheels by the principles of statics, and with the drag reaction at the ground applied only at those wheels having brakes.

(b) If specially constructed tires are used, the wheels must be plainly and conspicuously marked to that effect. The markings must include the make, size, number of plies, and identification marking of the proper tire.

[Revision note: Combines §§ 3.362 and 3.362-1]

BRAKES

§ 23.655 Brakes.

The airplane must have brakes that are adequate to prevent the airplane from rolling on a paved runway while applying takeoff power to the critical engine, and of enough capacity to provide adequate speed control during taxiing without excessive pilot loads.

[Revision note: Based on § 3.363]

SKIS

§ 23.665 Skis.

Skis must be of an approved type. The maximum limit load rating of each ski may not be less than the maximum limit load determined in accordance with the applicable ground load requirements of this part.

[Revision note: Based on § 3.364]

HULLS AND FLOATS

§ 23.675 Seaplane main floats.

(a) Each seaplane main float must be of an approved type and must conform to the provisions of § 23.441. In addition, each seaplane main float must—

(1) Have a buoyancy of 80 percent in excess of that required to support the maximum weight of the seaplane in fresh water; and

(2) Have enough watertight compartments to provide reasonable assurance that the airplane will stay afloat if any two compartments of the main floats are flooded.

(b) Each main float must contain at least four watertight compartments of approximately equal volume.

[Revision note: Based on § 3.371]

§ 23.677 Hulls of boat type seaplanes and amphibians.

(a) The hull of a boat type seaplane (or amphibian) of 1,500 pounds or more maximum certificated weight must have watertight compartments designed and arranged so that the hull, auxiliary floats, and tires (if used), will keep the airplane (at the maximum certificated weight) afloat in fresh water when—

(1) In the case of an airplane of 5,000 lbs. or more maximum certificated weight, any two adjacent compartments are flooded; and

(2) In the case of an airplane of 1,500 pounds up to but not including 5,000 pounds maximum certificated weight, any one compartment is flooded.

(b) The hulls of boat type seaplanes (or amphibians) with less than 1,500 pounds maximum certificated weight need not be compartmented.

(c) Bulkheads (where used) may have watertight doors for communication between compartments.

[Revision note: Based on § 3.372]

§ 23.679 Auxiliary floats.

Auxiliary floats must be arranged so that, when completely submerged in fresh water, they will provide a righting moment that is at least 1.5 times the upsetting moment caused by the airplane being tilted.

[Revision note: Based on § 3.373]

FUSELAGE

PILOT COMPARTMENT

§ 23.689 General.

(a) Each pilot compartment and its equipment must provide a satisfactory

degree of safety and assurance that the pilot will be able to perform all his duties and operate the controls in the correct manner without unreasonable concentration or fatigue.

(b) The primary cockpit controls set forth in § 23.697(b), excluding cables and control rods, must be located with respect to the propellers so that no part of the pilot or the controls lies in the region between the plane of rotation of any inboard propeller and the surface generated by a line passing through the center of the propeller hub and making an angle of 5 degrees forward or aft of the plane of rotation of the propeller.

[Revision note: Based on § 3.381]

§ 23.693 Pilot vision and view.

(a) Each pilot compartment must be free from glare and reflections that could interfere with the pilot's vision, and must be designed so that—

(1) The pilot's view is sufficiently extensive, clear, and undistorted, for safe operation; and

(2) During moderate rain conditions, the pilot has an adequate view of the flight path in normal flight and while landing, and is sufficiently protected from the elements that his vision is not unduly impaired.

(b) For each airplane intended for night operation, compliance with paragraph (a) of this section must be shown in night flight tests.

[Revision note: Based on § 3.382]

§ 23.695 Windshields, windows, and canopies.

(a) Each internal glass pane must be of a nonsplintering, safety type.

(b) The design of windshields, windows, and canopies on pressurized airplanes must be based on factors peculiar to high altitude operation, including at least the effect of continuous and cyclic pressurization loadings, the inherent characteristics of the material used, and the effects of temperatures and temperature gradients.

(c) On pressurized airplanes, an inclosure canopy including a representative part of the installation must be subjected to special tests to account for the combined effects of continuous and cyclic pressurization loadings and flight loads.

(d) The windshield and side windows forward of the pilot's back when he is seated in the normal flight position, must have a luminous transmittance value of not less than 70 percent.

[Revision note: Based on § 3.383 (and note following § 3.383(b))]

§ 23.697 Cockpit controls.

(a) Each cockpit control must be located and (except where its function is obvious) identified to provide for convenience in operation, including provisions to prevent confusion and consequent inadvertent operation. The controls must be located and arranged so that the pilot, when seated, has full and unrestricted movement of each control without interference from either his clothing or the cockpit structure.

(b) Cockpit controls must be designed so that they operate in accordance with the following movement and actuation:

Controls	*Movement and actuation*
Primary:	
Aileron	Right (clockwise) for right wing down.
Elevator	Rearward for nose up.
Rudder	Right pedal forward for nose right.
Powerplant:	
Throttle	Forward to open.

(c) Identical powerplant controls for the engines of multiengine airplanes must be located to prevent confusion as to the engines they control.

(d) The wing flap and auxiliary lift device controls must be located centrally, or to the right of the pedestal or powerplant throttle control centerline, and must be sufficiently displaced from the landing gear control to avoid confusion.

(e) The landing gear control must be located to the left of the throttle centerline or pedestal centerline.

(f) Landing gear and wing flap control knobs must be shaped in accordance with the following figure:

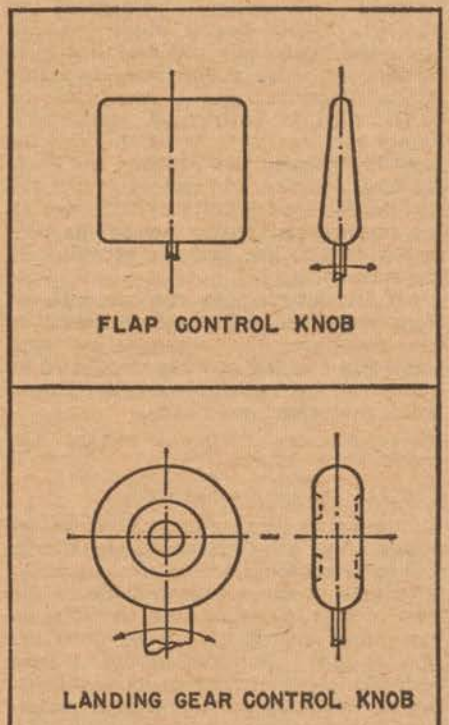


Illustration of control knob shapes. This figure indicates general shape only and is not intended to indicate the exact size or specific proportions of the control knobs.

[Revision note: Combines §§ 3.384 and figures 3–13 and 3–14]

§ 23.699 Instruments and markings.

Instruments must be arranged as prescribed in § 23.1139. Instruments and controls must have operational markings, instructions, and placards, as required by §§ 23.1483 through 23.1509.

[Revision note: Based on § 3.385]

EMERGENCY PROVISIONS

§ 23.709 Protection.

(a) The fuselage must be designed to give reasonable assurance that each occupant, if he makes proper use of belts or harnesses for which provision is made in the design, will not suffer serious injury during minor crash conditions as a result of any vulnerable part of his body contacting any penetrating or relatively solid object, although parts of the airplane may be damaged.

(b) The ultimate accelerations to which occupants are assumed to be subjected are shown on the following table:

ULTIMATE CRASH ACCELERATIONS

	Normal and utility categories	Acrobatic category
Upward	3.0*g*	4.5*g*
Forward	9.0*g*	9.0*g*
Sideward	1.5*g*	1.5*g*

(c) For airplanes with retractable landing gear, the fuselage, in combination with other portions of the structure, must be designed to afford protection to the occupants in a wheels-up landing with moderate descent velocity, assuming a vertical ultimate acceleration of 3*g*'s and a friction coefficient of 0.5 at the ground.

(d) If the characteristics of an airplane make a turnover reasonably probable, the fuselage, in combination with other parts of the structure, must be designed to afford protection to the occupants in a complete turnover, assuming a vertical ultimate acceleration of 3*g*'s and a friction coefficient of 0.5 at the ground.

(e) Except as provided in § 23.727, the means for preventing the breakaway of all items of mass which could injure the occupants if they came loose in a minor crash, and their supporting structures, must be designed for the crash loads specified in paragraph (b) of this section.

[Revision note: Based on § 3.386]

§ 23.711 Emergency exits.

(a) *Number and location.* Emergency exits must be located to allow escape without crowding in all probable crash attitudes. The airplane must have at least the following emergency exits:

(1) For an airplane with a seating capacity of more than five occupants, but less than 16, at least one emergency exit on the opposite side of the cabin from the main door specified in § 23.723.

(2) For an airplane with a seating capacity of more than 15 occupants, the emergency exit specified in subparagraph (1) of this paragraph, and, in addition, an emergency exit in the top or side of the cabin for each seven occupants, or fraction thereof, above 15. However, no more than four exits are required if their arrangement and size allows the quick evacuation of all occupants.

(3) If the pilot compartment is separated from the cabin by a door which is likely to block the pilot's escape in a

minor crash, there must be an exit in the pilot's compartment. The number of exits required by subparagraphs (1) and (2) of this paragraph must then be separately determined for the passenger compartment using the seating capacity of that compartment.

(b) *Type and operation.* Emergency exits must be movable windows, panels, or external doors, that provide a clear and unobstructed opening of a size and shape in which at least a 19-by-26-inch ellipse can be inscribed. In addition, each emergency exit must—

(1) Be readily accessible, requiring no exceptional agility to be used in emergencies;

(2) Have a method of opening that is simple and obvious;

(3) Be arranged and marked for easy location and operation, even in darkness;

(4) Have reasonable provisions against jamming by fuselage deformation; and

(5) In the case of acrobatic category airplanes, allow all occupants to bail out quickly with parachutes at any speed between V_{S_0} and V_D.

(e) *Tests.* The proper functioning of each emergency exit must be demonstrated by tests.

[Revision note: Based on § 3.387]

§ 23.713 Fire precautions.

(a) *Cabin interiors.* Only materials that are flash resistant may be used in cabin interiors. In compartments where smoking is to be permitted, the wall and ceiling linings, covering of all upholstery, floors, and furnishings, must be flame resistant. These compartments must have an adequate number of self-contained ash trays. The other compartments must be placarded against smoking.

(b) *Combustion heaters.* Only approved combustion heaters may be installed. The installation must meet applicable powerplant installation requirements covering fire hazards and precautions. Each applicable requirement concerning fuel tanks, lines, and exhaust systems, must be considered. Each combustion heater must have means to automatically shut off and hold off its ignition and fuel supply when the heat exchanger temperature or ventilating air temperature exceed safe limits or when either the combustion airflow or the ventilating airflow become inadequate for safe operation. This automatic device must be remote from the heater and must be independent of the components provided for the normal continuous control of air temperature, airflow, and fuel flow.

[Revision note: Based on § 3.388]

PERSONNEL AND CARGO ACCOMMODATIONS

§ 23.723 Doors.

Each enclosed cabin with passenger accommodations must have at least one adequate and easily accessible external door. No passenger door may be located with respect to the propeller discs so as to endanger persons using the door.

[Revision note: Based on § 3.389]

§ 23.725 Seats and berths.

Each seat and berth must be of an approved type. Each seat, berth, and its supporting structure, must be designed for occupants weighing at least 170 pounds (or 190 pounds with parachute for seats in airplanes intended for the acrobatic and utility categories), and for the maximum load factors corresponding to all specified flight and ground load conditions including the emergency landing conditions prescribed in § 23.709. In addition, the following requirements must be met:

(a) Each pilot seat must be designed for the reactions resulting from the application of pilot forces to the primary flight controls, as prescribed in § 23.357.

(b) Each seat in utility and acrobatic category airplanes must be designed to accommodate passengers wearing parachutes, unless otherwise placarded.

(c) Each berth installed parallel to the longitudinal axis of an airplane must be designed so that the forward part has a padded end board, canvas diaphragm, or equal means capable of withstanding the static load reaction of the occupant when the occupant is subjected to the forward accelerations prescribed in § 23.709. These berths must have an approved safety belt and may not have corners or other parts likely to cause serious injury to a person occupying the berth during emergency conditions. Safety belt attachments for these berths must be designed to withstand the critical loads resulting from all relevant flight and ground load conditions and from all the emergency landing conditions prescribed in § 23.709, with the exception of the forward load.

(d) In determining the strength of the attachment of the seat and berth to the structure, the accelerations prescribed in § 23.709 must be multiplied by a factor of 1.33 rather than by the fitting factor prescribed in § 23.505.

[Revision note: Combines §§ 3.390 and 3.390–1]

§ 23.727 Cargo compartments.

Each cargo compartment must be designed for the placarded maximum weight of contents and critical load distributions at the appropriate maximum load factors corresponding to all specified flight and ground load conditions of this part. Suitable provision must be made to prevent the dangerous shifting of the contents of cargo compartments, and adequate to protect the passengers from injury by the contents of any cargo compartment under any forward acting accelerating force up to 4.5 *g*'s.

[Revision note: Based on § 3.392]

§ 23.729 Ventilation.

Each passenger and crew compartment must be suitably ventilated. Carbon monoxide concentration may not exceed 1 part in 20,000 parts of air.

[Revision note: Based on § 3.393]

PRESSURIZED CABINS

§ 23.739 Pressure control.

For a pressurized cabin, at least the following valves, controls, and indicators for controlling cabin pressure must be provided:

(a) Two pressure relief valves (at least one of which is the normal regulating valve) to automatically limit the positive pressure differential to a predetermined value at the maximum rate of flow delivered by the pressure source. The pressure differential is considered to be positive when the internal pressure is greater than the external pressure. The combined capacity of the relief valves must be large enough so that the failure of any one valve will not cause an appreciable rise in the pressure differential.

(b) Two reverse pressure differential relief valves (or their equivalents) to automatically prevent a negative pressure differential from damaging the structure. However, one valve is enough if it is of a design which reasonably prevents malfunctioning.

(c) A means by which the pressure differential can be rapidly eliminated.

(d) An automatic or manual regulator for controlling the intake or exhaust airflow, or both, allowing the required internal pressures and airflow rates to be maintained.

(e) Instruments so show the pilot the pressure differential, the absolute pressure in the cabin, and the rate of change of the absolute pressure.

(f) A warning device to show the pilot when the safe or preset pressure differential and absolute cabin pressure limits are exceeded.

(g) A warning placard for the pilot if the structure is not designed for pressure differentials up to the maximum relief valve setting in combination with landing loads.

(h) A means to stop rotation of the compressor or to divert airflow from the cabin if continued rotation of an engine-driven cabin compressor or continued flow of any compressor bleed air will create a hazard if a malfunction occurs.

[Revision note: Based on § 3.395]

§ 23.741 Pressurization tests.

(a) *Strength test.* The complete pressurized cabin, including its doors, windows, canopy, and valves, must be tested as a pressure vessel for the pressure differential specified in § 23.291(c).

(b) *Functional tests.* The following functional tests must be performed:

(1) Tests of the functioning and capacity of the positive and negative pressure differential valves and of the emergency release valve, to simulate the effects of closed regulator valves.

(2) Tests of each part of the pressurization system to show proper functioning under all possible conditions of pressure, temperature, and moisture, up to the maximum altitude selected for certification.

(3) Flight tests to demonstrate the performance of the pressure supply, pressure and flow regulators, indicators, and warning signals, in steady and stepped climbs and descents at rates corresponding to the maximum attainable within the operating limitations of the airplane up to the maximum altitude selected for certification.

(4) Tests of each door or emergency exit to show that it operates properly

after being subjected to the flight tests prescribed in subparagraph (3) of his paragraph.

[Revision note: Based on § 3.396]

MISCELLANEOUS

§ 23.751 Leveling marks.

The airplane must have leveling marks for the purpose of leveling the airplane on the ground.

[Revision note: Based on § 3.401]

Subpart E—Powerplant

GENERAL

§ 23.771 Components.

(a) The powerplant installation of an airplane includes all components that are necessary for propulsion and all components that affect the safe operation and control of the major propulsive units. "Components" of a powerplant installation means the elements of that installation that are furnished by the airplane, engine, or propeller manufacturer, including components of the fuel system that are integral parts of the type certificated engine.

(b) Each powerplant installation must be designed and built to assure the safe operation of the airplane.

(c) Each powerplant installation must be accessible for all necessary inspections and maintenance.

[Revision note: Combines §§ 3.411 and 3.411–1]

ENGINES AND PROPELLERS

Each engine must have been certificated under Part 33 [New] (present Part 13) of this subchapter.

[Revision note: Based on § 3.415]

§ 23.783 Propellers.

(a) Each propeller must have been certificated under Part 35 [New] (present Part 14) of this subchapter.

(b) Engine power and propeller shaft rotational speed allowed for use in the airplane may not exceed the limits for which the propeller has been certificated.

(c) Each propeller that may be feathered in flight must have a means to unfeather it in flight.

[Revision note: Based on § 3.416]

§ 23.785 Propeller vibration.

(a) Each propeller with metal blades, or highly stressed metal components, must be shown to have vibration stresses in all normal operating conditions that do not exceed those that have been shown by the propeller manufacturer to be safe for continuous operation. This must be shown by actual measurement of stresses through direct testing of the propeller, or by comparison with similar installations that have been so tested. The Administrator may accept other test methods or service experience, that prove the safety of the installation.

(b) The Administrator may require proof of safe vibration characteristics for any type of propeller, except for conventional, fixed-pitch, wood propellers.

[Revision note: Based on § 3.417]

§ 23.787 Propeller pitch and speed limitations.

The propeller pitch and speed must be limited to values that will assure safe operation under all normal conditions of operation.

[Revision note: Based on § 3.418]

§ 23.789 Speed limitations for propellers that cannot be controlled in flight.

(a) During takeoff and initial climb at best rate of climb speed, each propeller, the pitch of which cannot be controlled in flight, must have a means to limit the engine r.p.m., at full throttle or at maximum allowable takeoff manifold pressure, to a speed not greater than the maximum allowable takeoff r.p.m.

(b) During a closed throttle glide at the placarded "never-exceed speed", the propeller may not cause the engine to rotate at a speed in excess of 110 percent of its maximum allowable continuous speed.

(c) Except as provided in § 23.73(b), each airplane of more than 6,000 lbs. maximum weight may not use a propeller pitch setting less than that allowed by paragraph (a) of this section to obtain takeoff r.p.m. at the best angle of climb speed to show compliance with paragraphs (a) and (d) of § 23.73.

[Revision note: Combines §§ 3.419 and 3.419–1(a) (2d sentence)]

§ 23.791 Speed and pitch limitations for controllable pitch propellers without constant speed controls.

Each propeller that can be controlled in flight, but that does not have constant speed controls, must have a means to limit the pitch range so that—

(a) The lowest possible pitch allows compliance with § 23.789(a); and

(b) The highest possible pitch allows compliance with § 23.789(b).

[Revision note: Based on § 3.420]

§ 23.793 Variable pitch propellers with constant speed controls.

Each variable pitch propeller with constant speed controls must have—

(a) With the governor in operation, a means at the governor to limit the maximum engine speed to the maximum permissible takeoff r.p.m.; and

(b) With the governor inoperative, a means to limit the maximum engine speed to 103 percent of the maximum permissible takeoff r.p.m. with the propeller blades at the lowest possible pitch and with takeoff manifold pressure, the airplane stationary, and no wind.

[Revision note: Based on § 3.421]

§ 23.795 Propeller clearance.

Unless smaller clearances are properly substantiated, propeller clearances with the airplane at maximum certificated weight, with the most adverse center of gravity, and with the propeller in the most adverse pitch position, may not be less than the following:

(a) *Ground clearance.* There must be a clearance of at least seven inches (for each airplane with nose wheel type landing gear) or nine inches (for each airplane with tail wheel type landing gear) with the landing gear statically deflected and the airplane in the level, normal takeoff, or taxiing attitude, whichever is most critical. In addition, for each airplane with conventional landing gear struts using fluid or mechanical means for absorbing landing shocks, there must be positive clearance between the propeller and the ground when the airplane is in the level takeoff attitude, the critical tire completely deflated, and the corresponding landing gear strut bottomed.

(b) *Water clearance.* There must be a clearance of at least 18 inches between each propeller and the water, unless compliance with § 23.187 can be demonstrated with a lesser clearance.

(c) *Structural clearance.*

(1) There must be at least one inch radial clearance between the blade tips and the airplane structure, or whatever additional radial clearance is necessary to prevent harmful vibration.

(2) There must be a minimum clearance of one-half inch longitudinal clearance between the propeller blades or cuffs and stationary parts of the airplane. There must be adequate clearance between other rotating parts of the propeller or spinner and stationary parts of the airplane.

[Revision note: Combines §§ 3.422 and 3.422–2 (1st sentence)]

FUEL SYSTEM

§ 23.805 General.

The fuel system must be constructed and arranged so that fuel flows to each engine at a rate and pressure adequate for proper engine functioning under all normal conditions of operation.

[Revision note: Based on § 3.429]

ARRANGEMENT

§ 23.807 Fuel system arrangement.

Each fuel system must be arranged to permit a fuel pump to draw fuel from only one tank at a time. Each gravity feed system may not supply fuel to an engine from more than one tank at a time, unless the tank air spaces are interconnected so that all interconnected tanks will feed equally.

[Revision note: Based on § 3.430]

§ 23.809 Multiengine fuel system arrangement.

(a) Each fuel system of a multiengine airplane must be arranged so that, in at least one system configuration, the failure of any one component (other than a fuel tank) will not result in the loss of power of more than one engine nor require immediate action by the pilot to prevent the loss of power of more than one engine.

(b) Each multiengine airplane using a single fuel tank, or series of fuel tanks interconnected to function as a single fuel tank, must have independent tank outlets to each engine. Each outlet must incorporate a shutoff valve at the tank. This valve may also serve as the firewall

shutoff valve required by § 23.879 if the line between the valve and the engine compartment does not contain a hazardous amount of fuel than can drain into the engine compartment. In addition, there must be—

(1) At least two vents arranged to minimize the possibility of both vents becoming obstructed simultaneously;

(2) Filler cap(s) designed to minimize the possibility of incorrect installation or loss in flight; and

(3) A fuel system in which each part supplying fuel from the tank outlet to any one engine is entirely independent of each part of the system supplying fuel to any other engine(s).

[Revision note: Based on § 3.431]

OPERATION

§ 23.819 Fuel flow rate.

(a) The ability of the fuel system to provide fuel at the rates specified in §§ 23.821 through 23.827 and at a pressure sufficient for proper carburetor operation must be demonstrated with the airplane in the attitudes which are most critical with respect to fuel feed and quantity of usable fuel. These conditions may be simulated in a suitable mockup.

(b) The amount of fuel in the tank being tested may not exceed the unusable fuel supply for that tank, as determined under § 23.827, plus the additional fuel necessary to conduct the flow test. If there is a fuel flowmeter in the system, it must be blocked during the flow test and the fuel must flow through the meter bypass.

[Revision note: Based on § 3.433]

§ 23.821 Fuel flow rate for gravity systems.

Fuel flow rate for gravity systems (main and reserve supply) must be 150 percent of the actual takeoff fuel consumption of the engine.

[Revision note: Based on § 3.434]

§ 23.823 Fuel flow rate for pump systems.

The fuel flow rate for each pump system (main and reserve supply) must be 0.9 pound per hour for each takeoff horsepower or 125 percent of the actual takeoff fuel consumption of the engine, whichever is greater. This flow rate is required for each primary engine-driven pump and each emergency pump, and must be available when the pump is running as it would during takeoff. For each hand-operated pump, this rate must occur at not more than 60 complete cycles (120 single strokes) per minute.

[Revision note: Based on § 3.435]

§ 23.825 Fuel flow rate for auxiliary fuel systems and fuel transfer systems.

Sections 23.821 and 23.823 apply to each auxiliary and transfer system, except that the required fuel flow rate must be established upon the basis of maximum continuous power and engine rotational speed, instead of takeoff power and fuel consumption. A lesser flow rate may be used for a small auxiliary tank feeding into a large main tank, if there is a suitable placard stating that the auxiliary tank is not to be opened to the main tank unless a predetermined satisfactory amount of fuel remains in the main tank.

[Revision note: Based on § 3.436]

§ 23.827 Determination of unusable fuel supply and fuel system operation on low fuel.

(a) The unusable fuel supply for each tank is the amount at which the first evidence of malfunctioning occurs under the conditions specified in this section. If more than one fuel tank is involved, any tank that is not needed to feed the engine under all conditions specified in this section need be investigated only for the flight conditions in which it is to be used. In such a case, the unusable fuel supply for that tank is based on the most critical applicable conditions. Information regarding the conditions under which the full amount of usable fuel in each tank can safely be used must be made available to the operating personnel by a suitable placard or by instructions in the airplane flight manual.

(b) For test purposes, the amount of fuel to be used to show compliance with this section must be chosen by the applicant. In addition, when establishing the unusable fuel supply, the following conditions must be arranged in order, from the most to the least critical:

(1) Level flight at maximum continuous power, or at the power required for level flight at V_C, whichever is lower.

(2) Climb at maximum continuous power at the calculated best angle of climb at minimum weight.

(3) Rapid application of power and subsequent transition to best rate of climb following a power-off glide at 1.3 V_{S_0}.

(4) Slips and skids in level flight, climb, and glide, under the applicable conditions specified in subparagraphs (1), (2), and (3) of this paragraph, of the greatest severity likely to be encountered in normal service or turbulent air.

(c) For each acrobatic and utility category airplane, there may be no evidence of malfunctioning during all maneuvers in the airplane flight manual. During this test the amount of fuel in each tank may not exceed the unusable fuel supply established in accordance with paragraph (b) of this section, plus 0.03 gallon for each maximum continuous horsepower for which certification is requested.

(d) There may be no evidence of malfunctioning during takeoff and one minute of climb at the calculated attitude of best angle of climb at takeoff power and minimum weight where the takeoff is begun with the amount of fuel in each tank specified in paragraph (c) of this section.

(e) If an engine can be supplied with fuel from more than one tank, it must be possible, in level flight, to regain full power and fuel pressure to that engine in not more than 10 seconds (for single-engine airplanes) or 20 seconds (for multiengine airplanes) after switching to any full tank after engine malfunctioning due to fuel depletion becomes apparent while the engine is being supplied from any other tank.

[Revision note: Based on § 3.437]

§ 23.829 Fuel system hot weather operation.

Each fuel system conducive to vapor formation must be shown to be free from vapor lock when using fuel at a temperature of 110° F. under critical operating conditions.

[Revision note: Based on § 3.438]

§ 23.831 Flow between interconnected tanks.

It may not be possible in a gravity feed system with interconnected tank outlets, for enough fuel to flow between the tanks to cause an overflow of fuel from any tank vent when the airplane is operated under the conditions in § 23.827(b)(1), (2), (3), and (4), except with full tanks.

[Revision note: Based on § 3.439]

FUEL TANKS

§ 23.841 General.

Each fuel tank must be able to withstand any vibration, inertia, and fluid and structural load to which it may be subject in operation. Each flexible fuel tank liner must be of an approved type. Each integral fuel tank must have adequate facilities for interior inspection and repair. The total usable capacity of the fuel tank must be enough for at least one-half hour of operation at rated maximum continuous power. The unusable capacity is considered to be the minimum amount of fuel that allows compliance with § 23.827 Each fuel quantity indicator must be adjusted, as specified in § 23.793, to account for the unusable fuel supply. If the unusable fuel supply in any tank exceeds five percent of the tank capacity, or one gallon, whichever is greater, there must be a placard and a suitable notation in the airplane flight manual to show flight personnel that the fuel remaining in the tank when the quantity indicator reads "zero" cannot be used safely in flight. The weight of the unusable fuel supply must be included in the empty weight of the airplane.

[Revision note: Based on § 3.440]

§ 23.843 Fuel tank tests.

(a) Each fuel tank must be able to withstand the following pressure tests without failure or leakage:

(1) For each conventional metal tank and nonmetallic tank with walls not supported by the airplane structure, a pressure of 3.5 p.s.i., or that pressure developed during the maximum ultimate acceleration of the airplane with a full tank, whichever is greater.

(2) For each integral tank, the pressure developed during the maximum limit acceleration of the airplane with a full tank, with simultaneous application of the critical limit structural loads.

(3) For each nonmetallic tank with walls that are supported by the airplane structure and constructed of an acceptable basic tank material and type of construction, and with actual or simu-

lated support conditions, a pressure of 2 p.s.i. for the first tank of a specific design. The supporting structure must be designed for the critical loads occurring in the flight or landing strength conditions combined with the fuel pressure loads resulting from the corresponding accelerations.

(b) Each fuel tank with large, unsupported, or unstiffened flat areas, must be able to withstand the following tests without leakage or failure:

(1) Each complete tank assembly and its supports must be vibration tested while mounted to simulate the actual installation. The tank assembly must be vibrated for 25 hours at a total amplitude of not less than 1/32 of an inch while ⅔ filled with water. The frequency of vibration must be 90 percent of the maximum continuous rated speed of the engine unless some other frequency within the normal operating range of speeds of the engine is more critical. If another frequency within the normal operating range of speeds is more critical, it must be used, and the time of test must be adjusted to accomplish the same number of vibration cycles as would be accomplished during 25 hours at a frequency of 90 percent of the maximum continuous rated r.p.m.

(2) In conjunction with the vibration test, a sloshing test must be made in which the tank assembly is rocked through an angle of 15 degrees on either side of the horizontal (30 degrees total), about an axis parallel to the axis of the fuselage, at 16 to 20 complete cycles per minute.

(c) Each integral tank using methods of construction and sealing not previously proven to be adequate by test data or service experience must be able to withstand the vibration test specified in subparagraph (1) of paragraph (b) of this section.

(d) Each tank with a nonmetallic liner must be subjected to the sloshing test outlined in subparagraph (2) of paragraph (b) of this section, with the fuel at room temperature. In addition, a specimen liner of the same basic construction as that to be used in the airplane must, when installed in a suitable test tank, satisfactorily withstand the sloshing test with fuel at a temperature of 110° F.

[Revision note: Based on § 3.441]

§ 23.845 Fuel tank installation.

(a) Each fuel tank must be supported so that tank loads are not concentrated. There must be pads to prevent chafing between the tank and its supports. Materials used for padding must be nonabsorbent or must be treated to prevent the absorption of fuel. If a flexible tank liner is used, it must be of an approved type and must be supported so that it is not required to withstand fluid loads. Interior surfaces adjacent to the liner must be smooth and free from projections that might cause wear, unless there are provisions to protect the liner at these points or unless the construction of the liner itself provides this protection. A positive pressure must be maintained within the vapor space of each bladder cell under all conditions of operation, including the critical conditions of low airspeed and rate of descent likely to be encountered.

(b) Each tank compartment must be ventilated and drained to prevent the accumulation of flammable fluids or vapors. Each compartment adjacent to a tank that is an integral part of the airplane structure must also be ventilated and drained.

(c) No fuel tank may be on the engine side of the firewall. There must be at least one-half inch of clearance between the fuel tank and the firewall. No part of the engine nacelle skin that lies immediately behind a major air opening from the engine compartment may act as the wall of an integral tank.

(d) No fuel tank may be in the personnel compartment of a multiengine airplane. If a fuel tank is in the personnel compartment of a single engine airplane, it must—

(1) If no larger than 25 gallons total capacity, be properly drained and ventilated; and

(2) If larger than 25 gallons total capacity—

(i) (For a conventional fuel tank) be isolated from the personnel compartment by fume and fuel proof enclosures; or

(ii) (For a bladder type fuel cell) have a retaining shell that is at least equivalent to a metal fuel tank in structural integrity and in fume and fuel tightness, and that is drained to the exterior of the airplane.

[Revision note: Combines §§ 3.442 and 3.442–1]

§ 23.847 Fuel tank expansion space.

Each fuel tank must have an expansion space of at least two percent of the tank capacity, unless the tank vent discharges clear of the aircraft (in which case no expansion space is required). It may not be possible to inadvertently fill the fuel tank expansion space when the airplane is in the normal ground attitude.

[Revision note: Based on § 3.443]

§ 23.849 Fuel tank sump.

Each fuel tank must have a drainable sump with an effective capacity, in all normal ground and flight attitudes, of 0.25 percent of the tank capacity, or 1/16 gallon, whichever is greater, unless—

(a) The fuel system has a sediment bowl or chamber that is accessible for drainage and has a capacity of 1 ounce for every 20 gallons of fuel tank capacity; and

(b) Each fuel tank outlet is located so that, in the normal ground attitude, water will drain from all parts of the tank to the sediment bowl or chamber.

[Revision note: Based on § 3.444]

§ 23.851 Fuel tank filler connection.

(a) Each fuel tank filler connection must be marked as specified in § 23.1521.

(b) Spilled fuel must be prevented from entering the fuel tank compartment or any part of the airplane other than the tank itself. The filler cap must provide a fuel-tight seal for the main filler opening. However, there may be small openings in the fuel tank cap for venting purposes or for the purpose of allowing passage of a fuel gauge through the cap.

[Revision note: Based on § 3.445]

§ 23.853 Fuel tank vents and carburetor vapor vents.

(a) Each fuel tank must be vented from the top part of the expansion space. Each vent outlet must be located and constructed in a manner that minimizes the possibility of its being obstructed by ice or other foreign matter. In addition, it must be constructed in a manner that prevents siphoning of fuel during normal operation. The vent must be large enough to allow the rapid relief of excessive differences of pressure between the interior and exterior of the tank. Airspaces of tanks with interconnected outlets must also be interconnected. There may be no undrainable points in the vent line where moisture is apt to accumulate with the airplane in either the ground or level flight attitudes. No vent may terminate at a point where the discharge of fuel from the vent outlet will constitute a fire hazard or from which fumes may enter personnel compartments.

(b) Each carburetor with vapor elimination connections must have a vent line that leads vapors back to one of the airplane fuel tanks. If there is more than one fuel tank, and if it is necessary to use these tanks in a definite sequence for any reason, the vapor vent return line must lead back to the fuel tank to be used first, unless the relative capacities of the tanks are such that return to another tank is preferable.

[Revision note: Based on § 3.446]

§ 23.855 Fuel tank vents for acrobatic category airplanes.

Excessive loss of fuel during acrobatic maneuvers, including short periods of inverted flight, must be prevented. It may not be possible for fuel to siphon from the vent when normal flight has been resumed after having executed any acrobatic maneuver for which the airplane is intended.

[Revision note: Based on § 3.447–A]

§ 23.857 Fuel tank outlet.

Each fuel tank outlet must have a screen of from 8 to 16 meshes per inch. If a finger strainer is used, the length of the strainer may not be less than four times the outlet diameter. The diameter of the strainer may not be less than the diameter of the fuel tank outlet. Each finger strainer must be accessible for inspection and cleaning.

[Revision note: Based on § 3.448]

FUEL PUMPS

§ 23.867 Fuel pump and pump installation.

(a) If there are fuel pumps to maintain a supply of fuel to the engine, at least one pump for each engine must be directly driven by the engine. The fuel pump or pumps must be adequate to meet the flow requirements of the applicable parts of §§ 23.819 through 23.825.

(b) There must be enough emergency fuel pumps to supply each engine with

fuel if any engine-driven pump fails. However, if an engine fuel injection pump (that is, a pump that supplies proper flow and pressure for fuel injection when the injection is not accomplished in a carburetor) that is certificated as an integral part of the engine is used, an emergency pump is not required. Enough emergency fuel pumps must be available for immediate use if any other pump fails. If both the normal pump and emergency pump operate continuously, there must be a means to indicate to the crew a malfunction of either pump.

[Revision note: Combines §§ 3.449 and 3.449–1]

LINES, FITTINGS, AND ACCESSORIES

§ 23.877 Fuel system lines and fittings.

(a) Each fuel line must be installed and supported in a manner that prevents excessive vibration and so that it withstands loads due to fuel pressure and accelerated flight conditions.

(b) Each fuel line that is connected to components of the airplane between which relative motion could exist must have provisions for flexibility.

(c) The provisions for flexibility in each fuel line that may be under pressure and subjected to axial loading must incorporate flexible hose assemblies, not hose-clamp connections.

(d) Each flexible hose must be of an approved type, or must be shown to be suitable for the particular application.

(e) Each flexible hose that might be adversely affected by exposure to high temperatures may not be used in locations where excessive temperatures will exist during operation or after engine shutdown.

[Revision note: Based on § 3.550]

§ 23.879 Fuel valves.

(a) There must be a means to allow the flight personnel to rapidly shut off, in flight, the flow of fuel to each engine individually. Valves for this purpose must be on the side of the firewall most remote from the engine.

(b) There must be a means to guard against inadvertent operation of each shutoff valve and to allow flight personnel to reopen each valve rapidly after it has been closed.

(c) Each valve must have either positive stops or "feel" in the "on" and "off" positions, and must be supported so that loads resulting from its operation or from accelerated flight conditions are not transmitted to the lines connected to the valve. Each valve must be installed so that the effect of gravity and vibration will tend to turn its handle to the open or "on" position, not the closed or "off" position.

(d) Each fuel valve handle and its connections to the valve mechanism must have design features that minimize the possibility of incorrect installation.

[Revision note: Based on § 3.551]

§ 23.881 Fuel strainer.

The airplane must have a fuel strainer between the fuel tank outlet and the carburetor inlet. If there is an engine-driven fuel pump, the strainer must be the tank outlet and the engine-driven pump inlet. The strainer must be accessible for drainage and cleaning, and the strainer screen must be removable.

[Revision note: Based on § 3.552]

DRAINS

§ 23.891 Fuel system drains.

The airplane must have drains to permit safe drainage of the entire fuel system. Each drain must have a means to lock it in the closed position, and must be effective in the normal ground attitude.

[Revision note: Based on § 3.553]

OIL SYSTEM

§ 23.903 Oil system.

(a) Each engine must have an independent oil system that is able to supply the engine with an ample amount of oil at a temperature not exceeding the maximum which has been established as safe for continuous operation. The usable oil tank capacity may not be less than the product of the endurance of the airplane under critical operating conditions and the maximum oil consumption of the engine under the same conditions, plus a suitable margin to assure adequate system circulation and cooling.

(b) For a conventional oil system (that is, an oil system without an oil transfer system), only the usable oil tank capacity may be considered. The amount of oil in the engine oil lines, the oil radiator, and the feathering reserve, may not be considered. If an oil transfer system is used, and the transfer pump can pump some of the oil in the transfer lines into the main engine oil tanks, the amount of oil in these lines that can be pumped by the transfer pump may be included in the oil capacity.

[Revision note: Combines §§ 3.561 and 3.561–1(b).]

OIL TANKS

§ 23.915 Oil tanks.

Each oil tank must be able to withstand all vibration, inertia, and fluid, loads to which it might be subjected in operation. Each flexible oil tank liner must be of an acceptable type.

[Revision note: Based on § 3.563]

§ 23.917 Oil tank tests.

Each oil tank must be tested in accordance with, and meet the same test requirements as, a fuel tank except that—

(a) The applied pressure must be five p.s.i. for all tank construction instead of the pressures specified in § 23.843(a); and

(b) For a tank with a nonmetallic liner the test fluid must be oil rather than fuel as specified in § 23.843(d), and the slosh test on a specimen liner must be conducted with the oil at a temperature of 250° F.

[Revision note: Based on § 3.564]

§ 23.919 Oil tank installation.

Each oil tank installation must conform to § 23.845 (a) and (b).

[Revision note: Based on § 3.565]

§ 23.921 Oil tank expansion space.

Each oil tank must have an expansion space of at least 10 percent of the tank capacity, or ½ gallon, whichever is greater. It must not be possible to inadvertently fill the oil tank expansion space when the airplane is in the normal ground attitude.

[Revision note: Based on § 3.566]

§ 23.923 Oil tank filler connection.

Each oil tank filler connection must be marked as specified in § 23.1521.

[Revision note: Based on § 3.567]

§ 23.925 Oil tank vent.

(a) Each oil tank must be vented to the engine crankcase from the top of the expansion space so that the vent connection is not covered by oil under any normal flight conditions. Each oil tank vent must be arranged so that condensed water vapor which might freeze and obstruct the line cannot accumulate at any point.

(b) For acrobatic category airplanes, there must be provisions to prevent hazardous loss of oil during acrobatic maneuvers, including short periods of inverted flight.

[Revision note: Based on § 3.568]

§ 23.927 Oil tank outlet.

No oil tank outlet may be enclosed or covered by any screen or other guard that might impede the flow of oil. No oil tank outlet diameter may be less than the diameter of the engine oil pump inlet.

[Revision note: Based on § 3.569]

LINES, FITTINGS, AND ACCESSORIES

§ 23.937 Oil system lines, fittings, and accessories.

Each oil line must conform to § 23.877, except that the inside diameter of the engine oil inlet and outlet lines may not be less than the diameter of the corresponding engine oil pump inlet and outlet.

[Revision note: Based on § 3.570]

§ 23.941 Oil radiators.

Each oil radiator and its supporting structures must be able to withstand any vibration, inertia, and oil pressure load to which it might normally be subjected.

[Revision note: Based on § 3.572]

§ 23.943 Oil filters.

If the powerplant installation has an oil filter (strainer), the filter must be constructed and installed so that oil continues to flow at the normal rate through the remainder of the system when the flow of oil through the filter element is completely blocked.

[Revision note: Based on § 3.573]

§ 23.945 Oil system drains.

The airplane must have drains to permit safe drainage of the entire oil system. Each drain must have a means to positively lock it in the closed position.

[Revision note: Based on § 3.574]

§ 23.947 Engine breather lines.

(a) Each engine breather line must be arranged so that condensed water vapor

that might freeze and obstruct the line cannot accumulate at any point. A breather may not discharge in a location where the discharge will constitute a fire hazard if foaming occurs or where the oil emitted from the line will impinge upon the pilot's windshield. A breather may not discharge into the engine air induction system.

(b) For acrobatic category airplanes, there may be no excessive loss of oil from the breather during acrobatic maneuvers, including short periods of inverted flight.

[Revision note: Based on § 3.575]

§ 23.951 Propeller feathering system.

If the propeller feathering system depends on using engine oil supply, there must be provisions to trap an amount of oil in the tank if the supply becomes depleted due to failure of any part of the lubricating system, other than the tank itself. The amount of oil trapped must be enough to accomplish the feathering operation and must be available only to the feathering pump. The ability of the system to accomplish feathering when the supply of oil has fallen to the above level must be shown.

[Revision note: Based on § 3.577]

COOLING

§ 23.961 General.

The powerplant cooling provisions must be able to maintain the temperatures of all powerplant components and fluids within the established limits during ground and flight operation.

[Revision note: Based on § 3.581]

TESTS

§ 23.971 Cooling tests.

(a) Compliance with § 23.961 must be shown under critical ground, water, and flight operating conditions in accordance with the test procedures set forth in §§ 23.975 and 23.977.

(b) If the tests are conducted under conditions that deviate from the highest anticipated summer air temperature, the recorded powerplant temperatures must be corrected in accordance with paragraphs (c) and (d) of § 23.973. The corrected temperatures determined in this manner may not exceed the established safe values.

(c) The fuel used during the cooling tests must be the minimum grade approved for the engines involved, and the mixture settings must be the settings appropriate to the operating conditions.

(d) Water taxiing tests must be conducted on each flying boat that may reasonably be expected to be taxied for extended periods.

[Revision note: Combines §§ 3.582 (less last sentence) and 3.582–1]

§ 23.973 Temperature corrections and assumptions.

The following temperature corrections and assumptions must be used to determine compliance with the cooling test requirements:

(a) The maximum anticipated summer air temperature is considered to be 100° F. at sea level and to decrease from this value at the rate of 3.6° F. per thousand feet of altitude above sea level.

(b) Cooling test results for winterization installations may be corrected to any temperature desired by the applicant rather than the conventional 100° F. hot day.

(c) Cylinder head, oil inlet, carburetor air, and engine coolant inlet temperatures must be corrected by adding to them the difference between the maximum anticipated summer air temperature and the temperature of the ambient air at the time of the first occurrence of maximum head, air, oil, or coolant temperature recorded during the cooling test.

(d) Cylinder barrel temperatures must be corrected by adding to them 0.7 of the difference between the maximum anticipated summer air temperature and the temperature of the ambient air at the time of the first occurrence of the maximum cylinder barrel temperature recorded during the cooling test.

[Revision note: Combines §§ 3.583, 3.583–1 (1st sentence), 3.584, and 3.585]

§ 23.975 Cooling test procedures for single-engine airplanes.

(a) Engine cooling tests for each single-engine airplane must be conducted in the following manner:

(1) Stabilize the engine temperatures in flight with the engine operating at not less than 75 percent of the maximum continuous power rating.

(2) After engine temperatures have stabilized, start a climb at the lowest practicable altitude and continue the climb for one minute with the engine operating at the takeoff rating.

(3) At the end of one minute, continue the climb at maximum continuous power for at least five minutes after the occurrence of the highest temperature recorded.

(b) The climb required in paragraph (a) of this section must be conducted at a speed not more than the best rate-of-climb speed with maximum continuous power unless—

(1) The slope of the flight path at the speed chosen for the cooling test is equal to or greater than the minimum required angle of climb; and

(2) The airplane has a cylinder head temperature indicator as specified in § 23.1183.

(c) The stabilizing and climb parts of the test must be conducted with cowl flap settings selected by the applicant.

[Revision note: Based on § 3.586]

§ 23.977 Cooling test procedures for multiengine airplanes.

(a) Engine cooling tests for each multiengine airplane that meets the minimum one-engine-inoperative climb performance specified in § 23.73(c) or § 23.75(b) must be conducted in the following manner:

(1) The airplane must be in the configuration specified in § 23.73(c) or § 23.75(b), except that, when above the critical altitude, the operating engines must be operated at maximum continuous power or at full throttle.

(2) The stabilizing and climb parts of the test must be conducted with cowl flap settings selected by the applicant.

(3) The temperatures of the operating engines must be stabilized in flight, with the engines operating at not less than 75 percent of the maximum continuous power rating.

(4) After engine temperatures have stabilized, a climb must be started 1,000 feet below the engine critical altitude (or, if this is impracticable, at the lowest altitude which the terrain will allow) or 1,000 feet below the altitude at which the single-engine-inoperative rate of climb is $0.02\ V_{S_0}{}^2$, whichever is lower, and continue the climb for at least five minutes after the highest temperature has been recorded.

(5) The climb must be conducted at a speed not greater than the highest speed at which compliance with the climb requirement of § 23.73(c) or § 23.75(b) can be shown. If the speed used exceeds the speed for best rate of climb with one engine inoperative, the airplane must have a cylinder head temperature indicator as specified in § 23.1183.

(b) Engine cooling tests for each multiengine airplane which cannot meet the minimum one-engine-inoperative climb performance specified in § 23.73 (c) or § 23.75(b) must be conducted in the manner prescribed in paragraph (a) of this section, except that, after stabilizing temperatures in flight, the climb (or descent, for airplanes with zero or negative one-engine-inoperative rate of climb) must be commenced at as near sea level as is practicable and must be conducted at the best rate-of-climb speed (or the speed of minimum rate of descent, for airplanes with zero or negative one-engine-inoperative rate of climb).

[Revision note: Based on § 3.587]

LIQUID COOLING SYSTEMS

§ 23.985 Independent systems.

Each liquid-cooled engine must have an independent cooling system. The cooling system must be arranged so that no air or vapor can be trapped in any part of the system, except the expansion tank, during filling or during operation.

[Revision note: Based on § 3.588]

§ 23.987 Coolant tank.

The airplane must have a coolant tank. The tank capacity may not be less than one gallon, plus 10 percent of the cooling system capacity. Each coolant tank must be able to withstand all vibration, inertia, and fluid loads to which it may be subjected in operation. Each coolant tank must have an expansion space of at least 10 percent of the total cooling system capacity. It may not be possible to inadvertently fill the expansion space with the airplane in the normal ground attitude.

[Revision note: Based on § 3.589]

§ 23.989 Coolant tank tests.

Each coolant tank must be tested in accordance with the tests for, and meet the same requirements as, a fuel tank except that—

(a) The test required by § 23.843(a)(1) must be replaced with a similar test using the sum of the pressure developed during the maximum ultimate accelera-

tion with a full tank or a pressure of 3.5 pounds per square inch, whichever is greater, plus the maximum working pressure of the system; and

(b) For a tank with a nonmetallic liner, the test fluid must be coolant rather than fuel as specified in § 23.843 (d), and the slosh test on a specimen liner must be conducted with the coolant at operating temperature.

[Revision note: Based on § 3.590]

§ 23.991 Coolant tank installation.

Each coolant tank must be supported so that tank loads are distributed over a large part of the tank surface. There must be pads between the tank and its supports to prevent chafing. Material used for padding must be nonabsorbent or must be treated to prevent the absorption of flammable fluids.

[Revision note: Based on § 3.591]

§ 23.993 Coolant tank filler connection.

(a) Each coolant tank filler connection must be marked as specified in § 23.1521.

(b) Spilled coolant must be prevented from entering the coolant tank compartment or any part of the airplane other than the tank itself. Each recessed coolant filler connection must have a drain or drains that discharge clear of all parts of the airplane.

[Revision note: Based on § 3.592]

§ 23.995 Coolant system lines and fittings.

Each coolant system line and fitting must conform to § 23.877, except that the inside diameter of the engine coolant inlet and outlet lines may not be less than the diameter of the corresponding engine inlet and outlet connections.

[Revision note: Based on § 3.593]

§ 23.997 Coolant radiators.

Each coolant radiator must be able to withstand any vibration, inertia, and coolant pressure load to which it may normally be subjected. Each radiator must be supported in a manner that allows expansion due to operating temperatures and prevents the transmittal of harmful vibration to the radiator. If flammable coolant is used, the air intake duct to the coolant radiator must be located so that (in case of fire) flames issuing from the nacelle cannot strike the radiator.

[Revision note: Based on § 3.594]

§ 23.999 Cooling system drains.

Each airplane must have at least one drain to permit drainage of the entire cooling system (including the coolant tank, radiator, and the engine) when the airplane is in the normal ground attitude. Each drain must discharge clear of all parts of the airplane and must have means to positively lock it in the closed position. Each cooling system drain must be accessible.

[Revision note: Based on § 3.595]

INDUCTION SYSTEM

§ 23.1011 General.

(a) Each engine air induction system must supply an adequate amount of air to the engine under all operating conditions.

(b) Each engine must have at least two separate air intake sources, except that an engine equipped with a fuel injector must have only one air intake source if the air intake, opening, or passage, is not obstructed by a screen, filter, or other part on which ice might form and restrict the airflow so as to adversely affect engine operation. Primary air intakes may open within the cowling if that part of the cowling is isolated from the engine accessory section by a fireresistant diaphragm or if provision is made to prevent the emergence of backfire flames. Each alternate air intake must be located in a sheltered position and may not open within the cowling unless it is located so that the emergence of backfire flames will not result in a hazard. The supplying of air to the engine through the alternate air intake system of the carburetor air preheater may not result in a loss of excessive power in addition to the power lost due to the rise in the temperature of the air.

[Revision note: Based on § 3.605]

§ 23.1013 Induction system deicing and anti-icing provisions.

Each engine air induction system must have a means to prevent and eliminate ice accumulations, and must conform to the requirements of this section when the airplane is operating in air that is at a temperature of 30° F. and free of visible moisture.

(a) Each airplane with a sea level engine using a conventional venturi carburetor must have a preheater capable of providing a heat rise of 90° F. when the engine is operating at 75 percent of its maximum continuous power.

(b) Each airplane with an altitude engine using a conventional venturi carburetor must have a preheater capable of providing a heat rise of 120° F. when the engine is operating at 75 percent of its maximum continuous power.

(c) Each airplane with an altitude engine using a carburetor which has features tending to reduce the possibility of ice formation must have a preheater capable of providing a heat rise of 100° F. when the engine is operating at 60 percent of its maximum continuous power. However, the preheater need not provide a heat rise in excess of 40° F. if a fluid deicing system conforming to the requirements of §§ 23.1015 through 23.1019 is also installed.

(d) Each single-engine airplane with a sea level engine using a carburetor which has features tending to reduce the possibility of ice formation must have a sheltered alternate source of air. The preheat supplied to this alternate air intake may not be less than that provided by the engine cooling air downstream of the cylinders.

(e) Each multiengine airplane with a sea level engine using a carburetor which has features tending to reduce the possibility of ice formation must have a preheater capable of providing a heat rise of 90° F. when the engine is operating at 75 percent of its maximum continuous power.

[Revision note: Based on § 3.606]

§ 23.1015 Carburetor deicing fluid flow rate.

If a carburetor deicing fluid system is used, it must be able to supply each engine with a rate of fluid flow, expressed in pounds per hour, of not less than 2.5 multiplied by the square root of the maximum continuous power of the engine. This flow must be available to all engines simultaneously. The fluid must be introduced into the air induction system at a point close to, and upstream of, the carburetor. The fluid must be introduced in a manner that will assure that it is equally distributed over the entire cross section of the induction system air passages.

[Revision note: Based on § 3.607]

§ 23.1017 Carburetor deicing fluid system capacity.

Each carburetor deicing fluid system capacity may not be less than that required to provide fluid at the rate specified in § 23.1015 for a time equal to three percent of the maximum endurance of the airplane. However, the capacity need not exceed that required for two hours of operation, nor may it be less than that required for 20 minutes of operation, at the above flow rate. If the available preheat exceeds 50° F. but is less than 100° F., the capacity of the system may be decreased in proportion to the heat rise available in excess of 50° F.

[Revision note: Based on § 3.608]

§ 23.1019 Carburetor deicing fluid system detail design.

Each carburetor deicing fluid system must conform to the provisions for the design of a fuel system, except as specified in §§ 23.1015 and 23.1017 and except if the provisions are clearly inapplicable.

[Revision note: Based on § 3.609]

§ 23.1021 Carburetor air preheater design.

There must be means to assure adequate ventilation of the carburetor air preheater when the engine is operated in cold air. Each preheater must be constructed so that the exhaust manifold parts that it surrounds and critical parts of the preheater itself may be inspected.

[Revision note: Based on § 3.610]

§ 23.1023 Induction system ducts.

Each induction system duct must have a drain or drains that prevents the accumulation of fuel or moisture while in all normal ground and flight attitudes. No open drain may be on the pressure side of turbosupercharger installations. No drain may discharge in a location that will constitute a fire hazard. Each duct that is connected to a component of the airplane between which relative motion may exist must have provision for flexibility.

§ 23.1025 Induction system screens.

[Revision note: Based on § 3.611]

If an induction system screen is used, it must be upstream of the carburetor. It may not be possible for fuel to strike the screen. No screen may be in any part of the induction system that is the only passage through which air can

reach the engine, unless the available preheat is 100° F. or over and the screen can be deiced by the application of the heated air. No induction system screen may be deiced by means of alcohol instead of heated air.

[Revision note: Based on § 3.612]

EXHAUST SYSTEM

§ 23.1035 General.

(a) Each exhaust system must assure the safe disposal of exhaust gases without creating a fire hazard and without allowing carbon monoxide contamination of the air in personnel compartments.

(b) Unless suitable precautions are taken, no exhaust system part may be in close proximity to parts of any system carrying flammable fluids or vapors, or under parts of such a system that may be subject to leakage. Each exhaust system component must be separated by means of fireproof shields from adjacent flammable parts of the airplane which are outside the engine compartment. No exhaust gases may be discharged where they will cause a glare that seriously affects pilot visibility at night, nor may they be discharged within dangerous proximity of any fuel or oil system drains. Each exhaust system component must be ventilated to prevent points of excessively high temperature.

[Revision note: Based on § 3.615]

§ 23.1037 Exhaust manifolds.

Each exhaust manifold must be made of fireproof, corrosion-resistant materials, and must have provisions to prevent failure due to expansion when heated to operating temperatures. Each exhaust manifold must be supported so that it will withstand all vibration and inertia loads to which it may be subjected in operation. Parts of the manifold that are connected to components between which relative motion might exist must have provisions for flexibility.

[Revision note: Based on § 3.616]

§ 23.1039 Exhaust heat exchangers.

(a) Each exhaust heat exchanger must be constructed and installed in a manner that assures its ability to withstand all vibration, inertia, and other loads to which it may normally be subjected. The heat exchanger must be constructed of materials that are suitable for continued operation at high temperatures and that are adequately resistant to corrosion due to products contained in exhaust gases.

(b) There must be provisions to allow inspection of all critical parts of exhaust heat exchangers, particularly if welded construction is used. Each heat exchanger must be ventilated where it is subject to contact with exhaust gases.

[Revision note: Based on § 3.617]

§ 23.1041 Exhaust heat exchangers used in ventilating air heating systems.

Each heat exchanger used in ventilating air heating systems must be constructed so that exhaust gases may not enter the ventilating air.

[Revision note: Based on § 3.618]

FIREWALL AND COWLING

§ 23.1051 Firewalls.

Each engine, auxiliary power unit, fuel burning heater, and each other unit of combustion equipment that is to be operated in flight, must be isolated from the remainder of the airplane by firewalls, shrouds, or equivalent means.

[Revision note: Based on § 3.623]

§ 23.1055 Firewall construction.

(a) Each firewall or shroud must be constructed so that no hazardous amount of liquid, gas, or flame can pass from the engine compartment to other parts of the airplane. Each opening in the firewall or shroud must be sealed tight with fireproof grommets, bushings, or firewall fittings. Seals made of fire-resistant materials may be used on single-engine airplanes and multiengine airplanes that are not required to conform to the provisions of § 23.73(c) or § 23.75 (b) or (c) if—

(1) The airplane has an engine (or engines) with a volumetric displacement of 1,000 cubic inches or less; and

(2) Each opening in the firewall or shroud will not allow the passage of a hazardous amount of flame without seals.

(b) Each firewall or shroud must be constructed of fireproof material and must be protected against corrosion. The following test procedures for demonstrating compliance with the criteria for fireproof material must be used:

(1) The flame to which the materials are subjected must be 2,000±50° F.

(2) Sheet materials approximately 10 inches square must be subjected to the flame from a suitable burner.

(3) The flame must be large enough to maintain the required test temperature over an area approximately five inches square.

(c) Firewall materials and fittings must resist flame penetration for 15 minutes.

(d) The following materials are satisfactory for use in firewalls or shrouds without being tested as required by this section:

(1) Stainless steel sheet, 0.015 inch thick.

(2) Mild steel sheet (coated with aluminum or otherwise protected against corrosion) 0.018 inch thick.

(3) Terne plate, 0.018 inch thick.

(4) Monel metal, 0.018 inch thick.

(5) Steel or copper base alloy firewall fittings.

[Revision note: Combines §§ 3.623–1 and 3.624]

§ 23.1057 Cowling.

(a) Each cowling must be made and suported so that it can resist all vibration, inerta, and air loads to which it may normally be subjected. There must must be provisions for rapid and complete drainage of all parts of the cowling in all normal ground and flight attitudes. No drain may discharge where the discharge will cause a fire hazard.

(b) Cowling must be constructed of fire-resistant material. Each part of the airplane behind an opening in the engine compartment cowling must be made of fire-resistant material for a distance of at least 24 inches aft of the opening. Each part of the cowling that is subjected to high temperatures due to proximity to exhaust system ports or exhaust gas impingement, must be made of fireproof material.

[Revision note: Based on § 3.625]

POWERPLANT CONTROLS AND ACCESSORIES

CONTROLS

§ 23.1067 Powerplant controls.

Each powerplant control must conform to §§ 23.697 and 23.1503. Each control must maintain any necessary position without constant attention by the flight personnel and may not have a tendency to creep due to control loads or vibration. Each flexible control must be of an acceptable type. Each control must have adequate strength and rigidity to withstand operating loads without failure or excessive deflection.

[Revision note: Based on § 3.627]

§ 23.1069 Throttle controls.

The airplane must have a throttle control to give independent control for each engine. Each throttle control must give a positive and immediately responsive means of controlling the engine. Throttle controls must be grouped and arranged so that separate control of each engine and simultaneous control of all engines is possible.

[Revision note: Based on § 3.628]

§ 23.1071 Ignition switches.

Each ignition switch must provide control for each ignition circuit on each engine. It must be possible to quickly shut off all ignition on multiengine airplanes, either by grouping of the individual switches or by providing a master ignition control. If the system has a master control, there must be means to prevent its inadvertent operation.

[Revision note: Based on § 3.629]

§ 23.1073 Mixture controls.

If the airplane has mixture controls, each engine must have a separate control. The mixture controls must be grouped and arranged so that separate control of each engine and simultaneous control of all engines is possible.

[Revision note: Based on § 3.630]

§ 23.1075 Propeller speed and pitch controls.

If the airplane has propeller speed or pitch controls, the controls must be grouped and arranged so that separate control of each engine and simultaneous control of all propellers is possible. The controls must permit ready synchronization of all propellers on multiengine airplanes.

[Revision note: Based on § 3.631]

§ 23.1077 Propeller feathering controls.

If the airplane has propeller feathering controls, each propeller must have a separate control. Propeller feathering controls must have means to prevent inadvertent operation.

[Revision note: Based on § 3.632]

§ 23.1079 Fuel system controls.

Each fuel system control must conform to § 23.879(c).

[Revision note: Based on § 3.633]

§ 23.1081 Carburetor air preheat controls.

The airplane must have separate controls to regulate the temperature of the carburetor air for each engine.

[Revision note: Based on § 3.634]

ACCESSORIES

§ 23.1091 Powerplant accessories.

Each engine-driven accessory must be of a type satisfactory for installation on the engine involved, and must use the provisions made on the engine to mount the unit. Electrical equipment subject to arcing or sparking must be installed in a manner that minimizes the possibility of contact with any flammable fluids or vapors that might be present in a free state.

[Revision note: Based on § 3.635]

§ 23.1093 Engine battery ignition systems.

(a) Each battery ignition system must be supplemented with a generator that is automatically made available as an alternate source of electrical energy, allowing continued engine operation in the event of the depletion of any battery.

(b) The capacity of batteries and generators must be enough to meet the simultaneous demands of the engine ignition system and the greatest demands of other electrical system components that draw electrical energy from the same source. The condition of an inoperative generator, and the condition of a completely depleted battery when the generator is running at its normal operating speed, must be considered. If there is only one battery, the condition in which the battery is completely depleted and the generator is operating at idling speed must be considered.

(c) The airplane must have a means to warn the appropriate flight personnel if malfunctioning of any part of the electrical system is causing the continuous discharging of a battery used for engine ignition.

[Revision note: Based on § 3.636]

POWERPLANT FIRE PROTECTION

§ 23.1103 Flammable fluids; shutoff means for multiengine aircraft which must conform to the provisions of § 23.73(c) or § 23.75(b).

(a) Each engine must have a means to shut off or otherwise prevent hazardous quantities of fuel, oil, deicing fluid, and other flammable fluids from flowing into, within, or through the engine compartment, except in lines forming an integral part of an engine. The closing of the fuel shutoff valve for any engine may not make any of the fuel supply unavailable to the remaining engines.

(b) Operation of the shutoff means may not interfere with the subsequent emergency operation of other equipment such as propeller feathering devices.

(c) Each shutoff must be outside of the engine compartment unless an equally high degree of safety is provided with the shutoff inside the engine compartment. It must be shown that no hazardous amount of flammable fluid could drain into the engine compartment after shutoff has been accomplished.

(d) The airplane must have a means to guard against inadvertent operation of the shutoff, and to make it possible for the crew to reopen the shutoff in flight after it has been closed.

[Revision note: Based on § 3.637]

§ 23.1105 Lines and fittings.

(a) Each line or fitting carrying a flammable fluid in the engine compartment must be fire resistant except—

(1) A line or fitting that forms an integral part of the engine; and

(2) A vent, drain line, or its fittings, the failure of which will not result in, or add to, a fire hazard.

(b) If flexible hose is used, the assembly of hose and end fittings must be of an approved type.

[Revision note: Based on § 3.638]

Subpart F—Equipment

§ 23.1125 General.

(a) The equipment specified in § 23.1129 must be used to show compliance with this part.

(b) Unless otherwise provided, additional equipment specified in other parts of this chapter for special types of operation is not required in order to show compliance with this part.

[Revision note: Based on § 3.651]

§ 23.1127 Functional and installation requirements.

(a) Each item of equipment that is essential to the safe operation of the airplane, including radio communication and navigation equipment installed on the airplane, must be found by the Administrator to adequately perform the functions for which it is to be used, must function properly when installed, and, where appropriate, must be adequately labeled as to its identification, function, and operating limitations.

(b) The installation of radio equipment must conform to § 23.1359.

[Revision note: Combines §§ 3.652 and 3.652-1]

BASIC EQUIPMENT

§ 23.1129 Required basic equipment.

The required basic equipment items are as follows:

(a) Flight and navigational instruments:

(1) Airspeed indicator.

(2) Altimeter.

(3) Magnetic direction indicator.

(b) Powerplant instruments for each engine or tank (if required):

(1) Fuel quantity indicator.

(2) Oil pressure indicator.

(3) Oil temperature indicator.

(4) Tachometer.

(5) Cylinder head temperature indicator.

(6) Fuel pressure indicator (if pump-fed engines are used).

(7) Manifold pressure indicator (if altitude engines are used).

(8) Oil quantity indicator.

(c) Electrical equipment (if required)

(1) Master switch arrangement.

(2) Adequate source(s) of electrical energy.

(3) Electrical protective devices.

(d) Miscellaneous equipment:

(1) Approved safety belts for all occupants.

(2) Airplane flight manual (if required by § 23.1541).

[Revision note: Based on § 3.655]

INSTRUMENTS; INSTALLATION

GENERAL

§ 23.1139 Arrangement and visibility of instrument installations.

(a) Each flight, navigation, and powerplant instrument must be easily visible to each pilot for whom its use is intended.

(b) For each multiengine airplane, identical powerplant instruments for the engines must be located in a manner that prevents confusion as to which engine the instruments relate.

[Revision note: Based on § 3.661]

§ 23.1141 Instrument panel vibration characteristics.

Vibration characteristics of the instrument panel may not impair the accuracy of any instrument or cause damage to it.

[Revision note: Based on § 3.662]

FLIGHT AND NAVIGATIONAL INSTRUMENTS

§ 23.1151 Airspeed indicating system.

(a) Except for an allowable installational error of plus or minus three percent of the calibrated airspeed, or five miles per hour, whichever is greater, each airspeed indicating system must indicate true airspeed at sea level under standard conditions—

(1) At all speeds from V_0 to 1.3 V_{S_1}, with flaps up; and

(2) At 1.3 V_{S_1}, with flaps extended.

(b) Calibration of each airspeed indicating system must be made in flight.

[Revision note: Based on § 3.663]

§ 23.1153 Airspeed indicator marking.

Each airspeed indicator must be marked in accordance with the requirements of § 23.1485.

[Revision note: Based on § 3.664]

§ 23.1155 Static air vent system.

Each instrument with static air case connections must be vented so that the influence of airplane speed, the opening and closing of windows, airflow variation, and moisture or other foreign matter does not seriously affect its accuracy.

[Revision note: Based on § 3.665]

§ 23.1157 Magnetic direction indicator.

Each magnetic direction indicator must be installed so that its accuracy is not excessively affected by the airplane's vibration or magnetic fields. In addition, the magnetic direction indicator must be installed so that, after it has been compensated, the deviation in level flight does not exceed ten degrees on any heading.

[Revision note: Based on § 3.666]

§ 23.1159 Automatic pilot system.

If an automatic pilot system is installed, the following requirements apply:

(a) The system must be designed so that the automatic pilot can either be quickly and positively disengaged by the human pilot to prevent it from interfering with the control of the airplane, or be overpowered by the human pilot to enable him to control the airplane.

(b) Unless there is automatic synchronization, each system must have a means to readily indicate to the pilot the alignment of the actuating device in relation to the control system it operates.

(c) Each manually operated control for the system's operation must be readily accessible to the pilot. Each control must operate in the same plane and sense of motion as specified in § 23.697 for cockpit controls. The direction of motion must be plainly indicated on, or adjacent to, each control.

(d) Each automatic pilot system must be designed and adjusted so that, within the range of adjustment available to the human pilot, it cannot produce hazardous loads on the airplane or create hazardous deviations in the flight path under any conditions of flight appropriate to its use, either during normal operation or in the event of a malfunction, assuming that corrective action is initiated within a reasonable period of time.

(e) Each system must be designed so that a single malfunction will not produce a hardover signal in more than one control axis. If the automatic pilot integrates signals from auxiliary controls or furnishes signals for operation of other equipment, positive interlocks and sequencing of engagement to preclude improper operation are required. Protection against adverse interaction of integrated components, resulting from a malfunction, is also required.

[Revision note: Based on § 3.667]

§ 23.1161 Gyroscopic instruments.

Each gyroscopic instrument installed in airplanes must derive its energy from power sources of sufficient capacity to maintain its required accuracy at all airplane speeds above the best rate-of-climb speed. It must be installed in a manner that prevents malfunctioning due to rain, oil, and other detrimental elements. There must be a means to indicate the adequacy of the power being supplied to the instruments. In addition, the following applies to multi-engine airplanes:

(a) There must be at least two independent sources of power (not driven by the same engine), a manual or an automatic means for selecting the power source, and a means for indicating the adequacy of the power being supplied by each source.

(b) The installation and power supply systems must be designed so that—

(1) The failure of one instrument will not interfere with the proper supply of energy to the remaining instruments; and

(2) The failure of the energy supply from one source will not interfere with the proper supply of energy from any other source.

[Revision note: Based on § 3.668]

§ 23.1163 Flight director instrument.

If the airplane has a flight director instrument, the installation may not affect the performance and accuracy of the required instruments. There must be a means for disconnecting the flight director instrument from the required instruments or their installations.

[Revision note: Based on § 3.669]

POWERPLANT INSTRUMENTS

§ 23.1173 Operational markings.

Instruments must be marked as specified in § 23.1489.

[Revision note: Based on § 3.670]

§ 23.1175 Instrument lines.

Each powerplant instrument line must conform to § 23.877. In addition, an instrument line carrying inflammable fluids or gasses under pressure must have restricted orifices or other safety devices at the source of the pressure to prevent escape of excessive fluid or gas if the line fails.

[Revision note: Based on § 3.671]

§ 23.1177 Fuel quantity indicator.

(a) Each airplane must have a means to indicate to the flight personnel the quantity of fuel in each tank during flight. Tanks with interconnected outlets and airspaces may be considered as one tank and need not have separate indicators. Each exposed sight guage must be installed and guarded in a manner that precludes the possibility of breakage or damage. A sight gauge that forms a trap in which water can collect and freeze must have means to permit drainage on the ground. Each fuel quantity gauge must be calibrated to read "zero" during level flight when the amount of fuel remaining in the tank is equal to the unusable fuel supply determined under § 23.827.

(b) No fuel gauge is required for a small auxiliary tank that is used only to transfer fuel to other tanks if the relative size of the tank, the rate of fuel transfer, and operating instructions are adequate to—

(1) Guard against overflow; and

(2) Give the crew prompt warning if transfer is not proceeding as planned.

(c) A fuel tank gauge calibrated to read in either gallons or pounds, and clearly marked to indicate which scale is being used, may be used.

[Revision note: Combines §§ 3.672 and 3.672–1]

§ 23.1179 Fuel flowmeter system.

If there is a fuel flowmeter system in the fuel line, the metering component must have a suitable means for the purpose of bypassing the fuel supply in the event that a malfunction of the metering component severely restricts fuel flow.

[Revision note: Based on § 3.673]

§ 23.1181 Oil quantity indicator.

The airplane must have a ground means (such as a stick gauge) to indicate the quantity of oil in each tank. If there is an oil transfer system or a reserve oil supply system, there must be means to indicate the quantity of oil in each tank to the flight personnel, during flight.

[Revision note: Based on § 3.674]

§ 23.1183 Cylinder head temperature indicating system for air-cooled engines.

Each air-cooled engine on airplanes equipped with cowl flaps must have a cylinder head temperature indicator. An airplane that does not have cowl flaps must have an indicator if compliance with § 23.961 is shown at a speed in excess of the speed of best rate of climb.

[Revision note: Based on § 3.675]

ELECTRICAL SYSTEMS AND EQUIPMENT

§ 23.1193 Installation.

Each electrical system must be of a type and design that is adequate for the intended use. In addition, when installed, it must be—

(a) Free from hazards in itself, in its method of operation, and in its effects on other parts of the airplane; and

(b) Suitably protected from fuel, oil, water, other detrimental substances, and mechanical damage.

[Revision note: Based on § 3.681]

ELECTRIC POWER SOURCES

§ 23.1203 Electric power sources.

(a) Each electric power source, its transmission cables, and its associated control and protective devices, must have enough capacity to furnish the required power at the proper voltage to all load circuits essential to the safe operation of the airplane.

(b) Compliance with paragraph (a) of this section must be shown by means of an electrical load analysis, or by electrical measurements, that take into account all electrical loads applied to the electrical system in probable combinations and for probable durations.

(c) There must be at least one generator if the electrical system supplies power to load circuits that are essential to the safe operation of the airplane.

(d) Electric power sources must function properly independently and when connected in combination. The failure or malfunction of any electric power source may not impair the ability of any remaining source to supply load circuits which are essential to the safe operation of the airplane.

(e) Each electric power source control must permit independent operation of each source.

[Revision note: Based on § 3.682]

§ 23.1205 Storage battery design and installation.

Unless operating experience with similar battery designs and installations shows that no temperature or pressure problems will arise with a particular battery design and installation, it must

be shown for each battery design and installation that the following conditions are met:

(a) Safe cell temperatures and pressures will be maintained during all probable charging or discharging conditions.

(b) No uncontrolled increase in cell temperature will result when the storage battery is recharged (after previous complete discharge) at the maximum regulated voltage, during a flight of maximum duration, under the most adverse cooling conditions likely to occur in service.

(c) Explosive or toxic gases emitted by the storage battery in normal operation, or as a result of any probable malfunction in the charging system or battery installation, will not accumulate in hazardous quantities within the airplane.

(d) Corrosive fluids or gases which may be emitted or spilled from the storage battery will not damage surrounding airplane structures or adjacent essential equipment.

[Revision note: Based on § 3.683]

§ 23.1207 Generator.

Each generator must be able to deliver its continuous rated power.

[Revision note: Based on § 3.685]

§ 23.1209 Generator controls.

(a) Generator voltage control equipment must be able to dependably regulate the generator output within rated limits.

(b) Each generator reverse current cutout must be designed and installed so that the generator is disconnected from the battery and other generators when the generator is developing a voltage of such a value that enough current to cause malfunctioning can flow into the generator.

[Revision note: Based on § 3.686]

INSTRUMENTS

§ 23.1219 Electric power system instruments.

(a) The airplane must have a means to indicate to appropriate crewmembers those electric power system quantities that are essential for the safe operation of the system.

(b) For direct current systems, an ammeter which can be switched into each generator feeder may be used. If there is only one generator, the ammeter may be in the battery feeder.

[Revision note: Based on § 3.687 and the note following]

MASTER SWITCH

§ 23.1221 Arrangement.

The airplane must have a master switch arrangement to allow expeditious disconnection of all electric power sources from the main bus. The point of disconnection must be adjacent to the power sources. Load circuits may be connected so that they remain energized after the master switch is opened if they are protected by circuit protective devices, rated at five amperes or less located next to the electric power source.

[Revision note: Based on § 3.688]

§ 23.1223 Master switch installation.

Each master switch or its controls must be installed so that it is easily discernible and accessible to a member of the crew in flight.

[Revision note: Based on § 3.689]

PROTECTIVE DEVICES

§ 23.1233 Fuses or circuit breakers.

Protective devices (fuses or circuit breakers) must be installed in the circuits of all electrical equipment except the main circuits of starter motors or other circuits where no hazard is presented by their omission. Not more than one circuit that is essential to safety in flight may be protected by a single protective device. Each resettable type circuit protective device must be designed so that a manual operation is required to restore service after tripping, and so that, when an overload or circuit fault exists, it will open the circuit irrespective of the position of the operating control.

[Revision note: Based on § 3.690]

§ 23.1235 Protective devices installation.

If the ability to reset a circuit breaker or to replace a fuse is essential to safety in flight, the circuit breaker or fuse must be in a position and identified so that it can be readily reset or replaced in flight.

[Revision note: Based on § 3.691]

§ 23.1237 Spare fuses.

If fuses are used, there must be one spare of each rating, or 50 percent spare fuses of each rating, whichever is greater.

[Revision note: Based on § 3.692]

ELECTRIC CABLES

§ 23.1247 Electric cables.

Each electric connecting cable must be of adequate capacity. A cable that would overheat in the event of circuit overload or fault must be flame resistant and may not emit dangerous quantities of toxic fumes.

[Revision note: Based on § 3.693]

SWITCHES

§ 23.1249 Switches.

Each switch must be able to carry its rated current and must be constructed with sufficient distance or insulating material between current carrying parts and the housing so that vibration in flight will not cause shorting.

[Revision note: Based on § 3.694]

§ 23.1251 Switch installation.

Each switch must be installed so that it is readily accessible to the appropriate crewmember. Each switch must be suitably labeled as to operation and the circuit controlled.

[Revision note: Based on § 3.695]

INSTRUMENT LIGHTS

§ 23.1261 Instrument lights.

If there are instrument lights, they must be constructed with sufficient distance or insulating material between current carrying parts and the housing so that vibration in flight will not cause shorting. They must provide sufficient illumination to make all instruments and controls easily readable and discernible. A cabin dome light is not an instrument light.

[Revision note: Combines §§ 3.696 and 3.696–1]

§ 23.1263 Instrument light installation.

Instrument lights must be installed so that their direct rays, and rays reflected from the windshield or other surface, are shielded from the pilot's eyes.

[Revision note: Based on § 3.697]

LANDING LIGHTS

§ 23.1273 Landing lights.

If there are landing lights, they must be of acceptable types.

[Revision note: Based on § 3.698]

§ 23.1275 Landing light installation.

Landing lights must be installed so that no dangerous glare is visible to the pilot and so that the pilot is not seriously affected by halation. In addition, they must provide adequate illumination for night landing.

[Revision note: Based on § 3.699]

POSITION LIGHTS

§ 23.1285 Position light system installation.

(a) Each position light system must consist of the following lights:

(1) Forward position lights consisting of a red and a green light, spaced laterally as far apart as practicable, and installed in a forward location on the airplane so that, with the airplane in normal flying position, the red light is displayed on the left side and the green light is displayed on the right side. The individual lights must be of approved types.

(2) A rear position white light, mounted as far aft as practicable. The light must be of an approved type.

(b) The two forward position lights and the rear position light must make a single circuit.

(c) The light covers or color filters used must be made of flame-resistant material and must be constructed so that they will not change color or shape, or suffer any appreciable loss of light transmission, during normal use.

[Revision note: Based on § 3.700]

§ 23.1287 Position light system dihedral angles.

The forward and rear position lights, when installed on the airplane, must show unbroken light within the dihedral angles specified in this section.

(a) Dihedral angle *L* (left) is formed by two intersecting vertical planes, one parallel to the longitudinal axis of the airplane and the other at 110 degrees to the left of the first, when looking forward along the longitudinal axis.

(b) Dihedral angle *R* (right) is formed by two intersecting vertical planes, one parallel to the longitudinal axis of the

airplane and the other 110 degrees to the right of the first, when looking forward along the longitudinal axis.

(c) Dihedral angle *A* (aft) is formed by two intersecting vertical planes making angles of 70 degrees to the right and 70 degrees to the left, respectively, looking aft along the longitudinal axis, to a vertical plane passing through the longitudinal axis.

[Revision note: Based on § 3.701]

§ 23.1289 Position light distribution and intensities.

(a) *General.* The intensities prescribed in this section are for new equipment with all light covers and color filters in place. Intensities must be determined with the light source operating at a steady value equal to the average luminous output of the light source at the normal operating voltage of the airplane. The light distribution and intensities of position lights must conform to the provisions of this section.

(b) *Forward and rear position lights.* The light distribution and intensities of forward and rear position lights are expressed in terms of minimum intensities in the horizontal plane, minimum intensities in any vertical plane, and maximum intensities in overlapping beams within dihedral angles *L*, *R*, and *A*. They must conform to the following requirements:

(1) *Intensities in horizontal plane.* The intensities in the horizontal plane may not be less than the values in § 23.1291. (The horizontal plane is the plane containing the longitudinal axis of the airplane and is perpendicular to the plane of symmetry of the airplane.)

(2) *Intensities above and below horizontal.* The intensities in any vertical plane may not be less than the appropriate value in § 23.1293 where I is the minimum intensity prescribed in § 23.1291 for the corresponding angles in the horizontal plane. (Vertical planes are planes perpendicular to the horizontal plane).

(3) *Overlaps between adjacent signals.* The intensities in overlaps between adjacent signals may not exceed the values in § 23.1295. However, higher intensities in the overlaps may be used with main beam intensities substantially greater than the minima specified in §§ 23.1291 and 23.1293 if the overlap intensities in relation to the main beam intensities do not adversely affect signal clarity. If the peak intensity of the forward position lights is greater than 100 candles, the maximum overlap intensities between them may exceed the values in § 23.1295 if the overlap intensity in Area *A* is not more than 10 percent of peak position light intensity, and the overlap intensity in Area *B* is not more than 2.5 percent of peak position light intensity.

(c) *Rear position light installation.* A single rear position light may be installed in a position displaced laterally from the plane of symmetry of an airplane if the axis of the maximum cone of illumination is parallel to the flight path in level flight, and if there is no obstruction aft of the light and between planes 70 degrees to the right and left of the axis of maximum illumination.

[Revision note: Combines §§ 3.702, 3.702–1, and 3.702–2]

§ 23.1291 Minimum intensities in the horizontal plane of forward and rear position lights.

Dihedral angle (light involved)	Angle from right or left of longitudinal axis, measured from dead ahead	Intensity (candles)
L and *R* (forward red and green).	0° to 10°	40
	10° to 20°	30
	20° to 110°	5
A (rear white)	110° to 180°	20

[Revision note: Based on figure 3–15]

§ 23.1293 Minimum intensities in any vertical plane of forward and rear position lights.

Angle above or below horizontal	Intensity
0°	1.00 *I*.
0° to 5°	0.90 *I*.
5° to 10°	0.80 *I*.
10° to 15°	0.70 *I*.
15° to 20°	0.50 *I*.
20° to 30°	0.30 *I*.
30° to 40°	0.10 *I*.
40° to 90°	0.05 *I*.

[Revision note: Based on figure 3–16]

§ 23.1295 Maximum intensities in overlapping beams of forward and rear position lights.

Overlaps	Maximum intensity	
	Area A (candles)	Area B (candles)
Green in dihedral angle *L*	10	1
Red in dihedral angle *R*	10	1
Green in dihedral angle *A*	5	1
Red in dihedral angle *A*	5	1
Rear white in dihedral angle *L*	5	1
Rear white in dihedral angle *R*	5	1

Area A includes all directions in the adjacent dihedral angle which pass through the light source and which intersect the common boundary plane at more than 10 degrees but less than 20 degrees. Area B includes all directions in the adjacent dihedral angle which pass through the light source and which intersect the common boundary plane at more than 20 degrees.

[Revision note: Based on figure 3–17]

§ 23.1297 Color specifications.

Position light colors must conform to the following chromaticity coordinates of the International Commission on Illumination:

(a) *Aviation red.*

y is not greater than 0.335,
z is not greater than 0.002.

(b) *Aviation green.*

x is not greater than $0.440-0.320y$,
x is not greater than $y-0.170$,
y is not less than $0.390-0.170x$

(c) *Aviation white.*

x is not less than 0.350
x is not greater than 0.540,
$y-y_0$ is not numerically greater than 0.01, y_0 being the y coordinate of the Planckian radiator for which $x_0=x$.

[Revision note: Based on § 3.703]

RIDING LIGHT (SEAPLANES)

§ 23.1305 Riding light.

(a) If a riding (anchor) light is required for a seaplane, flying boat, or amphibian, it must be able to show a white light for at least two miles at night under clear atmospheric conditions.

(b) Each riding light must be installed so that it shows the maximum unbroken light practicable when the airplane is moored or drifting on the water. Externally hung lights may be used.

[Revision note: Based on § 3.704]

ANTICOLLISION LIGHT SYSTEM

§ 23.1315 Anticollision light system for air planes for which an application for a type certificate was made after March 31, 1957.

To be eligible for certification for use in night operations, airplanes for which application for type certification was made after March 31, 1957, must have an anticollision light system. The system must consist of one or more approved anticollision lights, located where the emitted light will not impair the crew's vision and will not detract from the conspicuity of the position lights. The system must conform to the following requirements:

(a) *Field of coverage.* The system must consist of a light or lights that cover all vital areas around the airplane considering the physical configuration and the flight characteristics of the airplane. The field of coverage must extend in all directions within 30 degrees above and 30 degrees below the horizontal plane of the airplane, except that a solid angle or angles of obstructed visibility totaling not more than 0.5 steradians is allowable.

(b) *Flashing characteristics.* Each system (including the number of light sources, beam width, speed of rotation, and similar characteristics) must be arranged to give an effective flash frequency of not less than 40 nor more than 100 cycles per minute. The effective flash frequency is the frequency at which the airplane's complete anticollision light system is observed from a distance, and applies to all sectors of light including the overlaps which might exist when the system consists of more than one light source. In overlaps, flash frequencies above 100 cycles per minute, but not more than 180 cycles per minute, are allowed.

(c) *Color.* The color of the anticollision lights must be aviation red, in accordance with the specifications of § 23.1297(a).

(d) *Light intensity.* The minimum light intensity in all vertical planes, measured with the red filter and expressed in "effective intensities", is as follows:

(1)

Angle above or below horizontal plane	Effective intensity (candles)
0° to 5°	100
5° to 10°	60
10° to 20°	20
20° to 30°	10

(2) The following relation is assumed:

$$I_e = \frac{\int_{t_1}^{t_2} I(t)\,dt}{0.2 + (t_2 - t_1)};$$

where—

(i) I_e = effective intensity (candles);

(ii) $I(t)$ = instantaneous intensity as a function of time; and

(iii) $t_2 - t_1$ = flash time interval (seconds).

[Revision note: Combines §§ 3.705, figure 3-18, and 3.705-1 (1st sentence)]

§ 23.1317 Anticollision light system for airplanes for which an application for a type certificate was made before April 1, 1957.

(a) Airplanes for which application for a type certificate was made before April 1, 1957, may be certificated for night operation without an anticollision light system. If there is an anticollision light system, it must conform either to § 23.1315 or paragraphs (b) through (d) of this section.

(b) The anticollision light system must be of the rotating beacon type. It must be installed on top of the fuselage or the tail in a location where the light will not impair the flight crew's vision and will not detract from the conspicuity of the position lights. If there is no acceptable location on top of the fuselage or tail, a bottom fuselage installation may be used.

(c) The color of the anticollision light must be aviation red, in accordance with the specifications of § 23.1297(a).

(d) The arrangement of the anticollision light (the number of light sources, beam width, speed of rotation, and similar items), must provide an effective flash frequency of not less than 40 nor more than 100 cycles per minute, with an on-off ratio not less than 1: 75.

[Revision note: Based on § 3.705-1 (less 1st sentence)]

SAFETY EQUIPMENT: INSTALLATION

§ 23.1327 Marking.

Required safety equipment which the crew is expected to operate in an emergency (such as flares and automatic life raft releases) must be readily accessible and plainly marked as to method of operation. If this equipment is carried in lockers, compartments, or other storage places, the storage places must be marked for the benefit of passengers and crew.

[Revision note: Based on § 3.711]

§ 23.1329 Deicers.

If there are pneumatic deicers, the installation must be made in accordance with approved data. There must be a positive means to deflate the pneumatic boots.

[Revision note: Based on § 3.712]

§ 23.1335 Safety belts.

Each safety belt must be of an approved type. The rated strength of the safety belt may not be less than that required to withstand the ultimate load factors specified in § 23.709(b), considering the dimensional characteristics of the safety belt installation for the specific seat or berth arrangement. Each safety belt must be attached so that no part of the anchorage will fail at a load lower than that which would result from the application of ultimate load factors equal to those specified in § 23.709(b) multiplied by a factor of 1.33. This factor must be used in place of the fitting factor prescribed in § 23.505. For safety belts for berths parallel to the longitudinal axis of the airplane, the forward load factor need not be applied.

[Revision note: Based on § 3.715]

EMERGENCY FLOTATION AND SIGNALING EQUIPMENT

§ 23.1345 Rafts and life preservers.

Each raft and life preserver must be of an approved type.

[Revision note: Based on § 3.716]

§ 23.1347 Installation.

If emergency flotation and signaling equipment is required, it must be installed so that it is readily available to the crew and passengers. Each raft released automatically or by the pilot must be attached to the airplane by means of a line to keep it adjacent to the airplane. This line must be weak enough to break before submerging the empty raft.

[Revision note: Based on § 3.717]

§ 23.1349 Signaling device.

If a signaling device is required by other parts in this chapter, it must be accessible and function satisfactorily and must be free of any hazard in its operation.

[Revision note: Based on § 3.718]

RADIO EQUIPMENT: INSTALLATION

§ 23.1359 General.

Radio equipment and installations in the airplane must be free of hazards in themselves, in their method of operation, and in their effects on other components of the airplane.

[Revision note: Based on § 3.721]

MISCELLANEOUS EQUIPMENT: INSTALLATION

§ 23.1369 Accessories for multiengine airplanes.

Engine-driven accessories essential to the safe operation of the airplane must be distributed among two or more engines so that the failure of any one engine will not impair the safe operation of the airplane through the malfunctioning of these accessories.

[Revision note: Based on § 3.725]

HYDRAULIC SYSTEMS

§ 23.1379 General.

Each hydraulic system and element of the system must be designed to withstand, without exceeding the yield point, all structural loads in addition to the hydraulic loads that might be imposed.

[Revision note: Based on § 3.726]

§ 23.1381 Tests.

Each hydraulic system must be substantiated by proof pressure tests. When proof tested, no part of the hydraulic system may fail, malfunction, or experience a permanent set. The proof load of any system must be 1.5 times the maximum operating pressure of that system.

[Revision note: Based on § 3.727]

§ 23.1383 Accumulators.

No hydraulic accumulator or pressurized reservoir may be installed on the engine side of the firewall unless it is an integral part of the engine or propeller.

[Revision note: Based on § 3.728]

Subpart G—Operating Limitations and Information

§ 23.1403 General.

There must be a means to adequately inform the pilot and other appropriate crewmembers of the operating limitations upon which the type design is based. Any other information (concerning the airplane) found by the Administrator to be necessary for safety during its operation must also be made available to the crew.

[Revision note: Based on § 3.735]

LIMITATIONS

§ 23.1413 Limitations; general.

The operating limitations specified in §§ 23.1423 through 23.1463, and any similar limitations, must be established for each airplane to be certificated and made available to the operator in the manner prescribed in §§ 23.1473 through 23.1547, unless those limitations are unnecessary for safe operation because of the design of the airplane.

[Revision note: Based on § 3.737]

AIRSPEED

§ 23.1423 Airspeed limitations.

The airspeed limitations must be establish in accordance with the following:

(a) *Never-exceed speed* V_{NE}. No never-exceed speed may exceed the lesser of—

(1) 0.9 V_D chosen in accordance with § 23.245; or

(2) 0.9 times the maximum speed demonstrated in accordance with § 23.197 but not less than 0.9 times the minimum value of V_D permitted by § 23.245.

(b) *Maximum structural cruising speed* V_{NO}. No maximum structural cruising speed may be—

(1) Greater than V_C chosen in accordance with § 23.245;

(2) Greater than 0.89 times V_{NE} established under paragraph (a) of this section; and

(3) Less than the minimum V_C permitted in § 23.245.

(c) *Maneuvering speed* V_A. The maneuvering speed must be determined in accordance with § 23.245.

(d) *Flaps-extended speed* V_{FE}:

(1) No flaps-extended speed V_{FE} may be less than the minimum value of design flap speed in §§ 23.265 and 23.347, nor more than the lesser of—

(i) The design flap speed, V_F, chosen in accordance with § 23.265; or

(ii) The design flap speed chosen in accordance with § 23.247.

(2) Additional combinations of flap setting, airspeed, and engine power may be established if the structure has been proven for the corresponding design conditions.

(e) *Minimum control speed* V_{MC}. The minimum control speed must be determined in accordance with § 23.117.

[Revision note: Combines §§ 3.738 through 3.743]

POWERPLANT

§ 23.1433 Powerplant limitations.

(a) The following powerplant limitations must be established:

(1) For takeoff operation—

(i) The maximum rotational speed (r.p.m.);

(ii) The maximum allowable manifold pressure;

(iii) The maximum allowable gas temperature;

(iv) The time limit for use of the power or thrust which corresponds to the values established in subdivisions (i) through (iii) of this subparagraph; and

(v) The maximum allowable cylinder head, oil, and liquid coolant temperatures, if the time limit established in subdivision (iv) of this subparagraph exceeds two minutes.

(2) For maximum continuous operation—

(i) The maximum rotational speed (r.p.m.);

(ii) The maximum allowable manifold pressure;

(iii) The maximum allowable gas temperature; and

(iv) The maximum allowable cylinder head, oil, and liquid coolant temperatures.

(3) For takeoff and maximum continuous operation—

(i) The minimum fuel grade for reciprocating engines; or

(ii) The fuel designation for turbine engines.

(b) No powerplant limitation established under this section may exceed any corresponding limit established as part of the type certification of the engine or propeller used.

[Revision note: Based on § 3.744]

AIRPLANE WEIGHT

§ 23.1443 Airplane weight.

The airplane weight and center of gravity limitations must be determined in accordance with § 23.31.

[Revision note: Based on § 3.748]

MINIMUM FLIGHT CREW

§ 23.1453 Minimum flight crew.

The minimum flight crew must be determined as that number of persons required for the safe operation of the airplane during flight under VFR, determined by the availability and satisfactory operation of all necessary controls by each operator concerned.

[Revision note: Based on § 3.749]

KINDS OF OPERATION

§ 23.1463 Kinds of operation.

The kind of operation to which the airplane is limited is established by the category in which it is found eligible for certification and by the equipment installed.

[Revision note: Based on § 3.750]

MARKINGS AND PLACARDS

§ 23.1473 Markings and placards.

(a) Except as provided in § 23.1529 (b), all specified markings and placards are required for all airplanes certificated in the normal, utility, and acrobatic categories. Placards must be displayed in a conspicuous place. No placard or marking may be easily erased, disfigured, or obscured. Additional informational placards and instrument markings with a direct and important bearing on safe operation may be required by the Administrator because of unusual design, operating, or handling characteristics.

(b) If an airplane is to be certificated in more than one category, the applicant must select one category on which the placards and markings on the airplane are to be based. The placard and marking information for the other categories in which the airplane is to be certificated must be recorded in the airplane flight manual. A reference to this information must be on a placard which must also indicate the category on which the airplane placards and markings are based.

[Revision note: Based on § 3.755]

INSTRUMENT MARKINGS

§ 23.1483 Instrument markings.

Each instrument must be marked in accordance with §§ 23.1485 through 23.1493. If these markings are on the cover glass of the instrument, there must be adequate provisions to maintain the correct alignment of the glass cover with the face of the dial. Each arc and line must be wide enough to be clearly and easily visible to the pilot.

[Revision note: Based on § 3.756]

§ 23.1485 Airspeed indicator.

(a) Calibrated airspeed must be used. The following markings must be made:

(1) For the never-exceed speed V_{NE}, a radial red line.

(2) For the caution range, a yellow arc extending from the red line specified in subparagraph (1) to the upper limit of the green arc specified in subparagraph (3) of this paragraph.

(3) For the normal operating range, a green arc with the lower limit at V_{S_1} with maximum weight and with landing gear and wing flaps retracted, and the upper limit at the maximum structural cruising speed V_{NO} established in accordance with § 23.1423(b).

(4) For the flap operating range, a white arc with the lower limit at V_{S_0} at the maximum weight, and the upper limit at the flaps-extended speed V_{FE} established in accordance with § 23.1423 (d).

(b) If the never-exceed and maximum structural cruising speeds vary with altitude, there must be means to indicate to the pilot the appropriate limitations throughout the operating altitude range.

[Revision note: Based on § 3.757]

§ 23.1487 Magnetic direction indicator.

A placard that contains the calibration of the instrument in a level flight attitude with engine(s) operating and radio receiver(s) on or off (state which), must be installed on or in close proximity to the magnetic direction indicator. The calibrated readings must be to known magnetic headings in not greater than 30° increments.

[Revision note: Based on § 3.758]

§ 23.1489 Powerplant instruments.

Each required powerplant instrument must be marked with a red radial line at the maximum and minimum (if applicable) indications for safe operation. The normal operating ranges must be marked with a green arc that may not extend beyond the maximum and minimum limits for continuous operation. Takeoff and precautionary ranges must be marked with a yellow arc. Ranges of engine speed that are restricted because of excessive engine or propeller vibration must be marked with a red arc.

[Revision note: Based on § 3.759]

§ 23.1491 Oil quantity indicators.

Each oil quantity indicator must be suitably marked with such a number of increments that the indicator readily and accurately indicates the quantity of oil.

[Revision not: Based on § 3.760]

§ 23.1493 Fuel quantity indicator.

If the unusable fuel supply for any tank exceeds one gallon or five percent of the tank capacity, whichever is greater, there must be a red band on the fuel quantity indicator, extending from the calibrated zero reading to the lowest reading obtainable in the level flight attitude. There must be a suitable notation in the airplane flight manual to indicate to the flight personnel that the fuel remaining in the tank when the quantity indicator reads "zero" cannot be used safely in flight.

[Revision note: Based on § 3.761]

CONTROL MARKINGS

§ 23.1503 General.

Each cockpit control, except the primary flight controls and simple push button type starter switches, must be plainly marked as to its function and method of operation.

[Revision note: Combines §§ 3.762 and 3.762–1]

§ 23.1505 Aerodynamic controls.

Each secondary control must be suitably marked.

[Revision note: Based on § 3.763]

§ 23.1507 Powerplant fuel controls.

(a) Each fuel tank selector valve control must be marked to indicate the position corresponding to each tank and to all existing cross feed positions.

(b) If there is more than one fuel tank, and, if safe operation depends upon the use of tanks in a specific sequence, the fuel tank selector controls must be marked (adjacent to or on the control) to indicate to the flight personnel the order in which the tanks must be used.

(c) On each multiengine airplane, controls for engine valves must be

marked to indicate the position corresponding to each engine.

(d) The usable capacity of each tank must be indicated adjacent to or on the fuel tank selector control.

[Revision note: Based on § 3.764]

§ 23.1509 Accessory and auxiliary controls.

(a) If retractable landing gear is used, the indicator required by § 23.631 must be marked so that the pilot can ascertain at all times that the wheels are secured in the extreme positions.

(b) Each emergency control must be colored red and clearly marked as to its method of operation.

[Revision note: Based on § 3.765]

MISCELLANEOUS

§ 23.1519 Baggage compartments, ballast location, and special seat loading limitations.

(a) Each baggage, cargo, and ballast location must bear a placard that states the maximum allowable weight for that location and, if applicable, special limitations on contents due to loading requirements.

(b) If the maximum allowable weight to be carried in a seat is less than 170 pounds, there must be a placard permanently attached to the seat structure that states the maximum allowable weight to be carried in that seat.

[Revision note: Based on § 3.766]

§ 23.1521 Fuel, oil, and coolant filler openings.

The following information must be marked on or adjacent to the filler cover:

(a) For each fuel tank, the word "fuel", the minimum allowable fuel grade or designation for the engines installed, and the usable fuel tank capacity.

(b) For each oil tank, the word "oil" and the oil tank capacity.

(c) For each coolant tank, the name of the proper coolant fluid and the capacity of the coolant system.

[Revision note: Based on § 3.767]

§ 23.1523 Emergency exit placards.

Each emergency exit placard and operating control must be colored red. There must be a placard adjacent to the control that clearly indicates the exit to be an emergency exit and describes the method of operation of the control.

[Revision note: Based on § 3.768]

§ 23.1525 Approved flight maneuvers.

(a) For normal category airplanes, there must be a placard in front of and in clear view of the pilot stating: "No acrobatic maneuvers, including spins, approved."

(b) For utility category airplanes, there must be a placard in clear view of the pilot stating: "Acrobatic maneuvers are limited to the following _____" (list approved maneuvers).

(c) For acrobatic category airplanes, there must be a placard in clear view of the pilot listing the approved acrobatic maneuvers and the recommended entry airspeed for each. If inverted flight maneuvers are not approved, the placard must bear a notation to this effect.

[Revision note: Based on § 3.769]

§ 23.1527 Operating limitations placard.

There must be a placard in clear view of the pilot stating: "This airplane must be operated as a _____ or _____ category airplane in compliance with the operating limitations stated in the form of placards, markings, and manuals" (insert correct categories).

[Revision note: Based on § 3.770]

§ 23.1529 Airspeed placards.

(a) *For all airplanes.* There must be an airspeed placard in clear view of the pilot and as close as practicable to the airspeed indicator. This placard must list:

(1) The maximum speed for landing gear operation and the maximum speed with landing gear extended, if the airplane is equipped with retractable landing gear;

(2) The design maneuvering speed V_A;

(3) The minimum control speed V_{MC}; and

(4) The demonstrated crosswind velocity.

(b) *For airplanes of more than 6,000 pounds.* The placard required by paragraph (a) of this section must also include—

(1) The recommended climb speed;

(2) The best angle of climb speed;

(3) The engine - inoperative - climb speed; and

(4) The demonstrated crosswind speeds.

[Revision note: Based on § 3.771]

§ 23.1531 Kinds-of-operation placard.

There must be a placard in clear view of the pilot that specifies the kind of operations (such as VFR, IFR, day, or night) and the meteorological conditions (such as icing conditions) to which the operation of the airplane is limited, or from which it is prohibited, by the equipment installed.

[Revision note: Based on § 3.772]

AIRPLANE FLIGHT MANUAL

§ 23.1541 Airplane flight manual.

(a) There must be an airplane flight manual for each airplane of more than 6,000 pounds maximum certificated weight. The parts of this document listed below must be verified and approved by the Administrator, and must be segregated, identified, and clearly distinguished from parts not so approved. Additional items of information with a direct and important bearing on safe operation may be required by the Administrator when unusual design, operating, or handling characteristics so warrant.

(b) For airplanes with a maximum certificated weight of 6,000 pounds or less, an airplane flight manual is not required. However, the information prescribed in this part for inclusion in the airplane flight manual must be made available to the operator in the form of clearly stated placards, markings, or manuals.

[Revision note: Based on § 3.777]

§ 23.1543 Operating limitations.

(a) *Airspeed limitations.* Each airplane flight manual must include enough information to allow proper marking of the airspeed limitations on the indicator, as required in § 23.1485. It must also include the design maneuvering speed and the maximum safe airspeed at which the landing gear can be safely lowered. In addition, the significance of the airspeed limitations and of the color coding used must be explained.

(b) *Powerplant limitations.* Each airplane flight manual must include enough information to outline and explain all powerplant limitations and to allow marking the instruments as required by § 23.1489.

(c) *Weight.* The airplane flight manual must include—

(1) The maximum certificated weight;

(2) The empty weight and center of gravity location;

(3) The useful load; and

(4) The composition of the useful load, including the total weight of fuel and oil with tanks full.

(d) *Load distribution.* Each airplane flight manual must include all authorized center of gravity limits. If the available space for loading the airplane is adequately placarded or arranged so that any reasonable distribution of the useful load listed in weight above will not result in a center of gravity outside of the stated limits, the manual need not include any information other than the statement of center of gravity limits. In each other case, the manual must include adequate information to indicate satisfactory loading combinations that will assure maintaining the center of gravity within approved limits.

(e) *Maneuvers.* The airplane flight manual must include the authorized maneuvers, their appropriate airspeed limitations, and the unauthorized maneuvers, in accordance with the following:

(1) *Normal category airplanes.* Acrobatic maneuvers, including spins, are unauthorized. If the airplane has been demonstrated to be "characteristically incapable of spinning" in accordance with § 23.171(d), a statement to this effect must be entered.

(2) *Utility category airplanes.* Authorized maneuvers demonstrated in the type flight tests must be listed, together with recommended entry speeds. Other maneuvers are not authorized. If the airplane has been demonstrated to be "characteristically incapable of spinning" in accordance with § 23.171(d), a statement to this effect must be entered.

(3) *Acrobatic category airplanes.* The approved flight maneuvers demonstrated in the type flight tests must be included, together with recommended entry speeds.

(f) *Flight load factor.* Each airplane flight manual must include the positive limit load factors made good by the airplane's structure, in terms of acceleration in *g*'s.

(g) *Flight crew.* If a flight crew of more than one is required to operate the airplane safely, each airplane flight manual must include the number and functions of the minimum flight crew.

(h) *Kinds of operation.* Each airplane flight manual must include the kind of operations (such as VFR, IFR, day, or night) in which the airplane may or may not be used and the meteorological conditions under which it may or may not be used. Any installed equipment that affects the operating limitations of the airplane must be listed and identified as to operational function.

[Revision note: Based on § 3.778]

§ 23.1545 Operating procedures.

Each airplane flight manual must include information concerning normal and emergency procedures and other pertinent information necessary to safe operation. Procedures and pertinent information relating to the use of the airspeeds prescribed in § 23.1529(b) for airplanes of more than 6,000 pounds must be included.

[Revision note: Based on § 3.779]

§ 23.1547 Performance information for airplanes with a maximum certificated weight of more than 6,000 pounds.

(a) Each airplane flight manual must include the following information:

(1) The stalling speed, V_{S_0} at maximum weight.

(2) The stalling speed, V_{S_1} at maximum weight and with landing gear and wing flaps retracted, and the effect upon this stalling speed of angles of bank up to 60 degrees.

(3) The takeoff distance determined in accordance with § 23.61, the airspeed at the 50-foot height, and, if pertinent, the airplane configuration.

(4) The landing distance determined in accordance with § 23.85, and, if pertinent, the airplane configuration.

(5) The steady rate of climb, determined in accordance with paragraphs (a), (b) (if appropriate), and (c) of § 23.73, the airspeed, power, and, if pertinent, the airplane configuration.

(b) Each airplane flight manual must contain the calculated approximate effect on takeoff distance (paragraph (a) (3) of this section), landing distance (paragraph (a) (4) of this section), and steady rate of climb (paragraph (a) (5) of this section), of variations in—

(1) Altitude from sea level to 8,000 feet; and

(2) Temperature at these altitudes from minus 60 degrees F. below standard to plus 40 degrees F. above standard.

(c) Each airplane flight manual must include the best climb speed or the minimum descent speed for multiengine airplanes with one engine inoperative.

(d) If landplane takeoff and landing distances are included in the airplane flight manual, it is not necessary, in complying with paragraph (a) (3) and (4) of this section, to make takeoff and landing distance tests for skiplane installations. A statement in the airplane flight manual of the approximate reduction in climb performance may be used instead of including complete new data for the skiplane configuration if—

(1) The landing gear is fixed in both landplane and skiplane configurations;

(2) The climb requirements are not critical; and

(3) The climb reduction in the skiplane configurations is small (30 to 50 feet per minute).

[Revision note: Combines §§ 3.780, 3.780–3(a) (1st sentence), and 3.780–3(b) (1st sentence)]

APPENDIX A—SIMPLIFIED DESIGN LOAD CRITERIA FOR CONVENTIONAL, SINGLE-ENGINE AIRPLANES OF 6,000 POUNDS OR LESS MAXIMUM WEIGHT

A23.1 *General.*

(a) The design load criteria in this Appendix are an approved equivalent of those in §§ 23.233 through 23.359 of this subchapter for the certification of conventional, single-engine airplanes of 6,000 pounds or less maximum weight.

(b) Unless otherwise stated, the nomenclature and symbols in this Appendix are the same as the corresponding nomenclature and symbols in Part 23.

[Revision note: Combines §§ 1.1 (less last sentence) and 3.1 (introductory paragraph)]

A23.3 *Special symbols used in this Appendix.*

n_1 = Airplane Positive Maneuvering Limit Load Factor.

n_2 = Airplane Negative Maneuvering Limit Load Factor.

n_3 = Airplane Positive 30 fps Gust Limit Load Factor at V_C.

n_4 = Airplane Negative 30 fps Gust Limit Load Factor at V_C.

n_{flap} = Airplane Positive Limit Load Factor With Flaps Fully Extended at V_F.

*$V_{F\,min}$ = Minimum Design Flap Speed = $12.5\sqrt{n_1 W/S}$

*$V_{A\,min}$ = Minimum Design Maneuvering Speed = $17.0\sqrt{n_1 W/S}$

*$V_{C\,min}$ = Minimum Design Cruising Speed = $19.5\sqrt{n_1 W/S}$

*$V_{D\,min}$ = Minimum Design Dive Speed = $27.3\sqrt{n_1 W/S}$

*Also see paragraph A23.7(e)(2) of this Appendix.

[Revision note: Based on § 3.1 (less introductory paragraph)]

A23.5 *Certification in more than one category.*

The criteria in this Appendix may be used for certification in the normal, utility, and acrobatic categories, or in any combination of these categories. If certification in more than one category is desired, the design category weights must be selected to make the term "n_1W" constant for all categories or greater for one desired category than for others. The wings and control surfaces (including wing flaps and tabs) need only be investigated for the maximum value of "n_1W", or for the category corresponding to the maximum design weight, where "n_1W" is constant. If the acrobatic category is selected, a special unsymmetrical flight load investigation in accordance with subparagraphs A23.9(c)(2) and A23.11(c)(2) of this Appendix must be completed. The wing, wing carrythrough, and the horizontal tail structures must be checked for this condition. The basic fuselage structure need only be investigated for the highest load factor design category selected. The local supporting structure for dead weight items need only be designed for the highest load factor imposed when the particular items are installed in the airplane. The engine mount, however, must be designed for a higher side load factor, if certification in the acrobatic category is desired, than that required for certification in the normal and utility categories. When designing for landing loads, the landing gear and the airplane as a whole need only be investigated for the category corresponding to the maximum design weight. These simplifications apply to single-engine aircraft of conventional types for which experience is available, and the Administrator may require additional investigations for aircraft with unusual design features.

[Revision note: Based on § 4.0]

A23.7 *Flight loads.*

(a) Each flight load may be considered independent of altitude and, except for the local supporting structure for dead weight items, only the maximum design weight conditions must be investigated.

(b) Table 1 and figures 3 and 4 of this Appendix must be used to determine values of n_1, n_2, n_3, and n_4, corresponding to the maximum design weights in the desired categories.

(c) Figures 1 and 2 of this Appendix must be used to determine values of n_3 and n_4 corresponding to the minimum flying weights in the desired categories, and, if these load factors are greater than the load factors at the design weight, the supporting structure for dead weight items must be substantiated for the resulting higher load factors.

(d) Each specified wing and tail loading is independent of the center of gravity range. The applicant, however, must select a c.g. range, and the basic fuselage structure must be investigated for the most adverse dead weight loading conditions for the c.g. range selected.

(e) The following loads and loading conditions are the minimums for which strength must be provided in the structure:

(1) *Airplane equilibrium.* Vertical wing loads may be found directly from vertical airplane loads by multiplying the airplane loads (as determined from paragraphs A23.9 (b) and (c) of this Appendix) by a factor of 1.05 for the positive flight conditions and 1.0 for the negative. The vertical wing load is the wing load vertical to the relative wind. All chordwise components of the vertical wing load must be taken into consideration.

(2) *Minimum design airspeeds.* The minimum design airspeeds may be chosen by the applicant except that they may not be less than the minimum speeds found by using figure 3 of this Appendix. In addition, $V_{C\,min}$ need not exceed values of $0.9v_H$ actually obtained at sea level for the lowest design weight category for which certification is desired. In computing these minimum design airspeeds, n_1 may not be less than 3.8

(3) *Flight load factor.* The limit flight load factors specified in Table 1 of this Appendix represent the acceleration component in terms of the gravitational constant, g, normal to the assumed longitudinal axis of the airplane, and equal in magnitude and opposite in direction to the airplane inertia load factor at the center of gravity.

[Revision note: Based on § 5.0 (less 3d sentence of paragraph 5.2)]

A23.9 *Flight conditions.*

(a) *General.* Each design condition in paragraphs (b) and (c) of this section must be used to assure sufficient strength for each condition of speed and load factor on or within the boundary of a V–n diagram for the airplane similar to the diagram in figure 4 of this Appendix. This diagram must also be used to determine the airplane structural operating limitations as specified in §§ 23.1403 through 23.1423 and 23.1443.

(b) *Symmetrical flight conditions.* The airplane must be designed for symmetrical flight conditions as follows:

(1) The airplane must be designed for at least the four basic flight conditions, "A",

"D", "E", and "G" as noted on the flight envelope of figure 4 of this Appendix. In addition, the following requirements apply:

(i) The design limit flight load factors corresponding to conditions "D" and "E" of figure 4 must be at least as great as those specified in Table 1 and figure 4 of this Appendix, and the design speed for these conditions must be at least equal to the value of V_D found from figure 3 of this Appendix.

(ii) For conditions "A" and "G" of figure 4, the load factors must correspond to those specified in Table 1 of this Appendix, and the design speeds must be computed using these load factors with the maximum static lift coefficient C_{N_A} determined by the applicant. However, in the absence of more precise computations, these latter conditions may be based on a value of $C_{N_A}=\pm 1.35$ and the design speed for condition "A" may be less than $V_{A\ min}$.

(iii) Conditions "C" and "F" of figure 4 need only be investigated when n_3W/S or n_4W/S are greater than n_1W/S or n_2W/S of this Appendix respectively.

(2) If flaps or other high lift devices intended for use at the relatively low airspeed of approach, landing, and takeoff, are installed, the airplane must be designed for the two flight conditions corresponding to the values of limit flap-down factors specified in Table 1 of this Appendix with the flaps fully extended at not less than the design flap speed $V_{F\ min}$ from figure 3 of this Appendix.

(c) *Unsymmetrical flight conditions.* Each affected structure must be designed for unsymmetrical loadings as follows:

(1) The aft fuselage-to-wing attachment must be designed for the critical vertical surface load determined in accordance with subparagraphs A23.11(c) (1) and (2) of this Appendix.

(2) The wing and wing carry-through structures must be designed for 100 percent of condition "A" loading on one side of the plane of symmetry and 70 percent on the opposite side for certification in the normal and utility categories, or 60 percent on the opposite side for certification in the acrobatic category.

(3) The wing and wing carry-through structures must be designed for the loads resulting from a combination of 75 percent of the positive maneuvering wing loading on both sides of the plane of symmetry and the maximum wing torsion resulting from aileron displacement. The effect of aileron displacement on wing torsion at V_C or V_A using the basic airfoil moment coefficient modified over the aileron portion of the span, must be computed as follows:

(i) $C_m=C_m+0.1\delta_u$ (up aileron side) wing basic airfoil.

(ii) $C_m=C_m-0.1\delta_d$ (down aileron side) wing basic airfoil, where δ_u is the up aileron deflection and δ_d is the down aileron deflection.

(4) Δ critical, which is the sum of $\delta_u+\delta_d$, must be computed as follows:

(i) Compute Δ_a and Δ_b from the formulas:

$$\Delta_a=\frac{V_A}{V_C}\times\Delta_a \text{ and}$$

$$\Delta_b=0.5\frac{V_A}{V_D}\times\Delta_a$$

where Δ_a=the maximum total deflection (sum of both aileron deflections) at V_A with V_A, V_C, and V_D described in subparagraph (2) of § 23.7(e) of this Appendix.

(ii) Compute K from the formula:

$$K=\frac{(C_m-0.01\delta_b)V_D^2}{(C_m-0.01\delta_a)V_C^2}$$

where δ_a is the down aileron deflection corresponding to Δ_a, and δ_b is the down aileron deflection corresponding to Δ_b as computed in step (i).

(iii) If K is less than 1.0, Δ_a is Δ critical and must be used to determine δ_u and δ_d. In this case, V_C is the critical speed which must be used in computing the wing torsion loads over the aileron span.

(iv) If K is equal to or greater than 1.0, Δ_b is Δ critical and must be used to determine δ_u and δ_d. In this case, V_D is the critical speed which must be used in computing the wing torsion loads over the aileron span.

(d) *Supplementary conditions; rear lift truss; engine torque; side load on engine mount.* Each of the following supplementary conditions must be investigated:

(1) In designing the rear lift truss, the special condition specified in § 23.285 may be investigated instead of condition "G" of figure 4 of this Appendix. If this is done, and if certification in more than one category is desired, the value of W/S used in the formula appearing in § 23.285 must be that for the category corresponding to the maximum gross weight.

(2) Each engine mount and its supporting structures must be designed for the maximum limit torque corresponding to METO power and propeller speed acting simultaneously with the limit loads resulting from the maximum positive maneuvering flight load factor n_1. The limit torque must be obtained by multiplying the mean torque by a factor of 1.33 for engines with five or more cylinders. For 4, 3, and 2 cylinder engines, the factor must be 2, 3, and 4, respectively.

(3) Each engine mount and its supporting structure must be designed for the loads resulting from a lateral limit load factor of not less than 1.47 for the normal and utility categories, or 2.0 for the acrobatic category.

[Revision note: Based on § 6.0]

A23.11 *Control surface loads.*

(a) *General.* Each control surface load must be determined using the criteria of paragraph (b) of this section and must lie within the simplified loadings of paragraph (c) of this section.

(b) *Pilot effort.* In each control surface loading condition described in paragraphs (c) through (e) of this section, the airloads on the movable surfaces and the corresponding deflections need not exceed those which could be obtained in flight by employing the maximum pilot control forces specified in the table in § 23.303. If the surface loads are limited by maximum pilot effort, the tabs must either be considered to be deflected to their maximum travel in the direction which would assist the pilot or the deflection must correspond to the maximum degree of "out of trim" expected at the speed for the condition under consideration. The tab load, however, need not exceed the value specified in Table 2 of this Appendix.

(c) *Surface loading conditions.* Each surface loading condition must be investigated as follows:

(1) Simplified limit surface loadings and distributions for the horizontal tail, vertical tail, aileron, wing flaps, and trim tabs are specified in Table 2 and figures 5 and 6 of this Appendix. If more than one distribution is given, each distribution must be investigated.

(2) If certification in the acrobatic category is desired, the horizontal tail must be investigated for an unsymmetrical load of 100 percent W on one side of the airplane centerline and 50 percent on the other side of the airplane centerline.

(d) *Outboard fins.* Outboard fins must conform to the requirements of § 23.335.

(e) *Special devices.* Special devices must conform to the requirements of § 23.351.

[Revision note: Based on § 7.0]

A23.13 *Control system loads.*

(a) *Primary flight controls and systems.* Each primary flight control and system must be designed as follows:

(1) The flight control system and its supporting structure must be designed for loads corresponding to 125 percent of the computed hinge moments of the movable control surface in the conditions prescribed in A23.11 of this Appendix. In addition—

(i) The system limit loads need not exceed those that could be produced by the pilot and automatic devices operating the controls; and

(ii) The design must provide a rugged system for service use, including jamming, ground gusts, taxiing downwind, control inertia, and friction.

(2) Acceptable maximum and minimum pilot loads for elevator, aileron, and rudder controls are shown in the table in § 23.303. These pilots loads must be assumed to act at the appropriate control grips or pads as they would under flight conditions, and to be reacted at the attachments of the control system to the control surface horn.

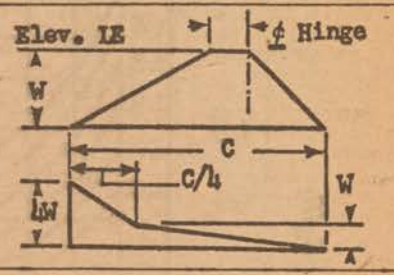
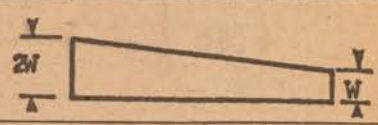
(b) *Dual controls.* If there are dual controls, the systems must be designed for pilots operating in opposition, using individual pilot loads equal to 75 percent of those obtained in accordance with paragraph (a) of this section, except that individual pilot loads may not be less than the minimum loads shown in the table in § 23.303.

TABLE 1—LIMIT FLIGHT LOAD FACTORS

LIMIT FLIGHT LOAD FACTORS			Normal category	Utility category	Acrobatic category
FLIGHT Load Factors	Flaps Up	n_1	3.8	4.4	6.0
		n_2	$-0.5n_1$		
		n_3	Find n_3 from Fig. 1		
		n_4	Find n_4 from Fig. 2		
	Flaps Down	n_{flap}	$0.5n_1$		
		n_{flap}	Zero*		

*Vertical wing load may be assumed equal to zero and only the flap part of the wing need be checked for this condition.

TABLE 2—AVERAGE LIMIT CONTROL SURFACE LOADING

AVERAGE LIMIT CONTROL SURFACE LOADING			
SURFACE	DIRECTION OF LOADING	MAGNITUDE OF LOADING	CHORDWISE DISTRIBUTION
HORIZONTAL TAIL I	a) Up and Down	Figure 5 Curve (2)	
	b) Unsymmetrical loading (Up and Down)	100% $\overline{w}$ on one side airplane ℄. 65% $\overline{w}$ on other side of airplane ℄ for the normal and utility categories. For the acrobatic category see A23.11(c).	
VERTICAL TAIL II	a) Right and Left	Figure 5 Curve (1)	Same as (A) above
	b) Right and Left	Figure 5 Curve (1)	Same as (B) above
AILERON III	a) Up and Down	Figure 6 Curve (5)	
WING FLAP IV	a) Up	Figure 6 Curve (4)	
	b) Down	.25 x Up Load (a)	
TRIM TAB V	a) Up and Down	Figure 6 Curve (3)	Same as (D) above

The surface loadings I, II, III, and V above are based on speeds $V_{A\ min}$ and $V_{C\ min}$. The loading of IV is based on $V_{f\ min}$. If values of speeds greater than these minimums are selected for design the appropriate surface loadings must be multiplied by the ratio $\left[\frac{V_{sel}}{V_{min}}\right]^2$.

For conditions I, II, III and V the multiplying factor used must be the higher of $\left[\frac{V_{A\ sel}}{V_{A\ min}}\right]^2$ or $\left[\frac{V_{C\ sel}}{V_{C\ min}}\right]^2$.

FIGURE 1 – CHART FOR FINDING n_3 FACTOR AT SPEED V_C

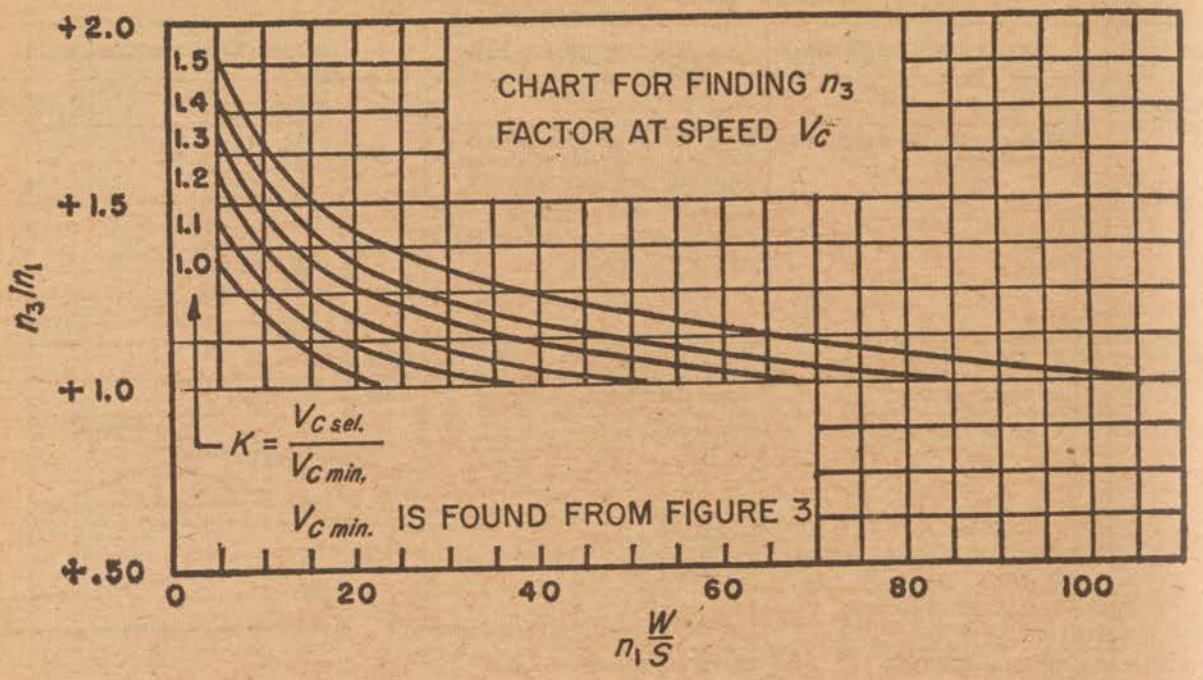


FIGURE 2 – CHART FOR FINDING n_4 FACTOR AT SPEED V_C

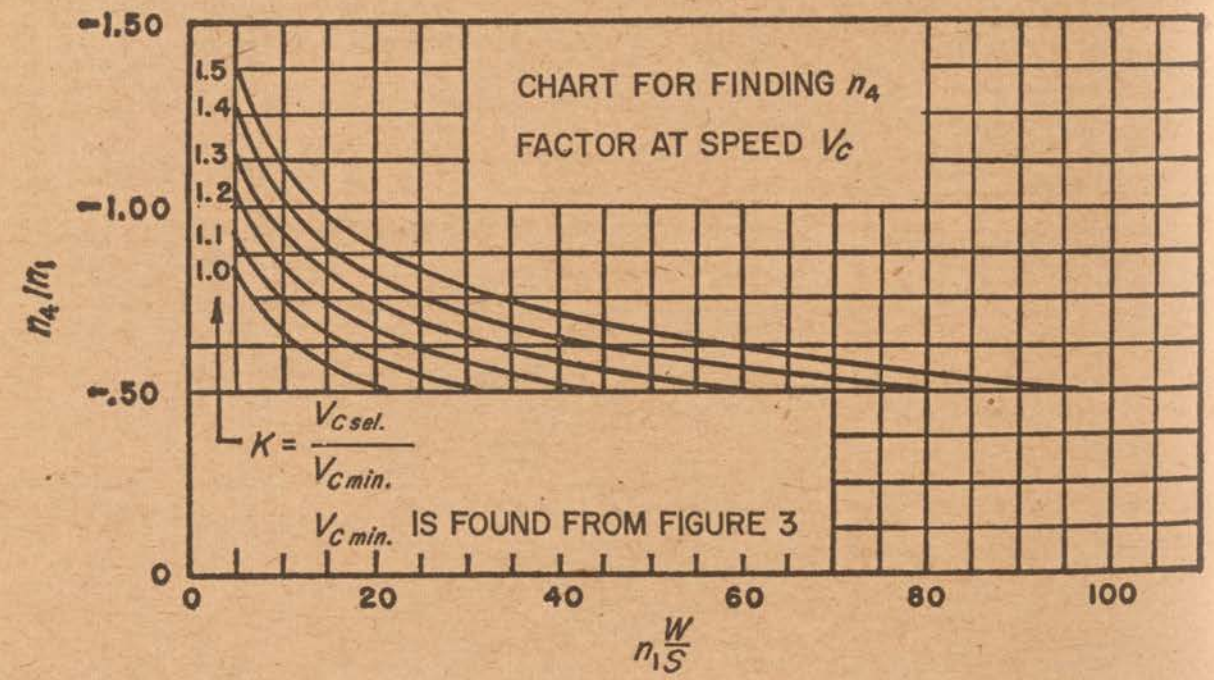


FIGURE 3 - MINIMUM DESIGN AIRSPEEDS

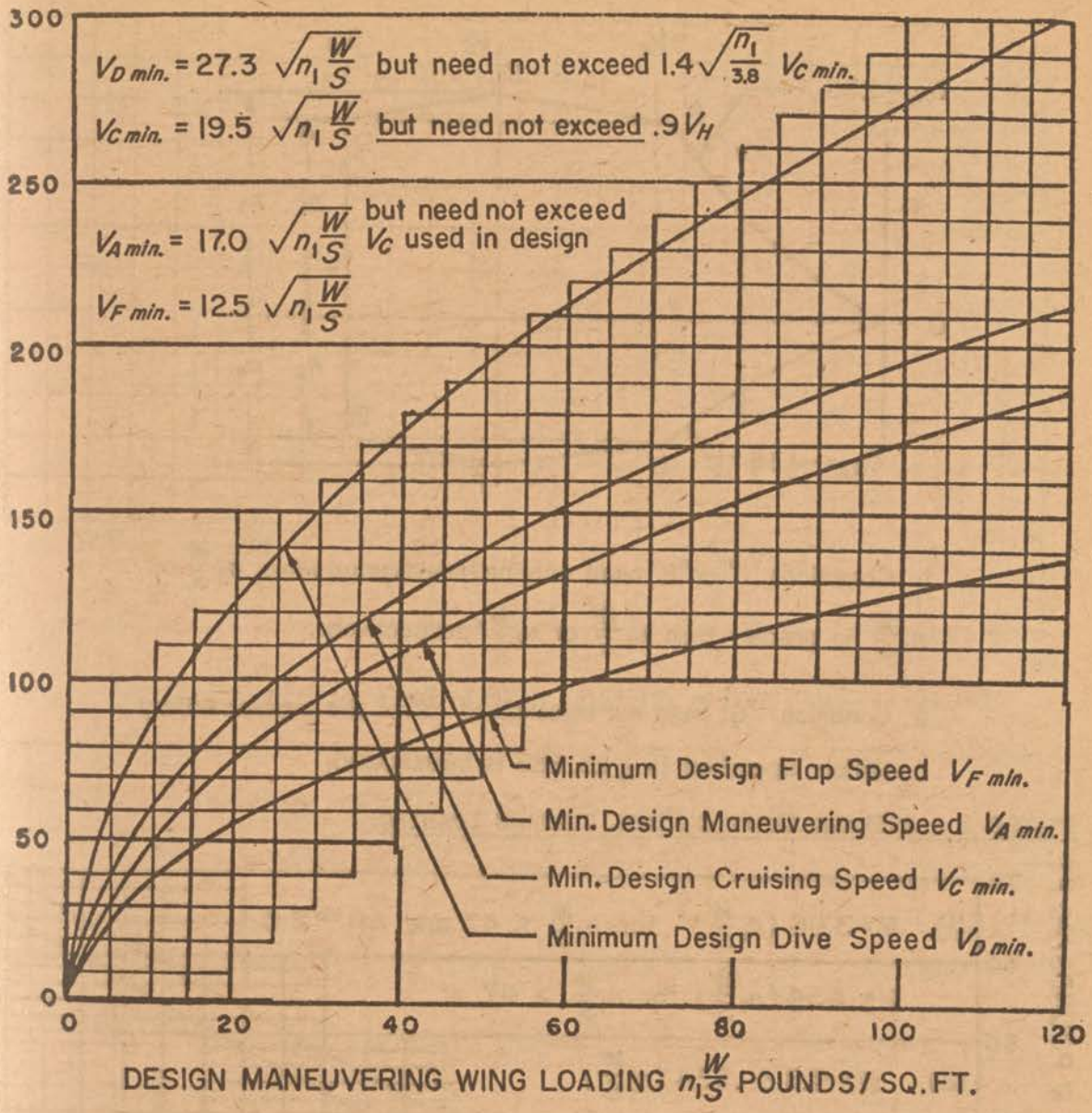
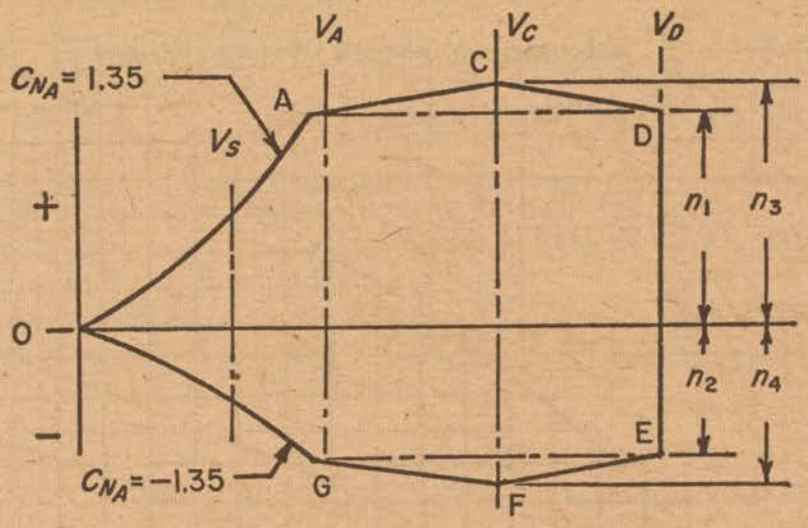


FIGURE 4 – *V–n* DIAGRAM (FLIGHT ENVELOPE)



1. Conditions "C" or "F" need only be investigated when $n_3\frac{W}{S}$ or $n_4\frac{W}{S}$ is greater than $n_1\frac{W}{S}$ or $n_2\frac{W}{S}$, respectively.

2. Condition "G" need not investigated when the supplementary condition specified in § 23.285 is investigated.

FIGURE 5 - AVERAGE LIMIT CONTROL SURFACE LOADING

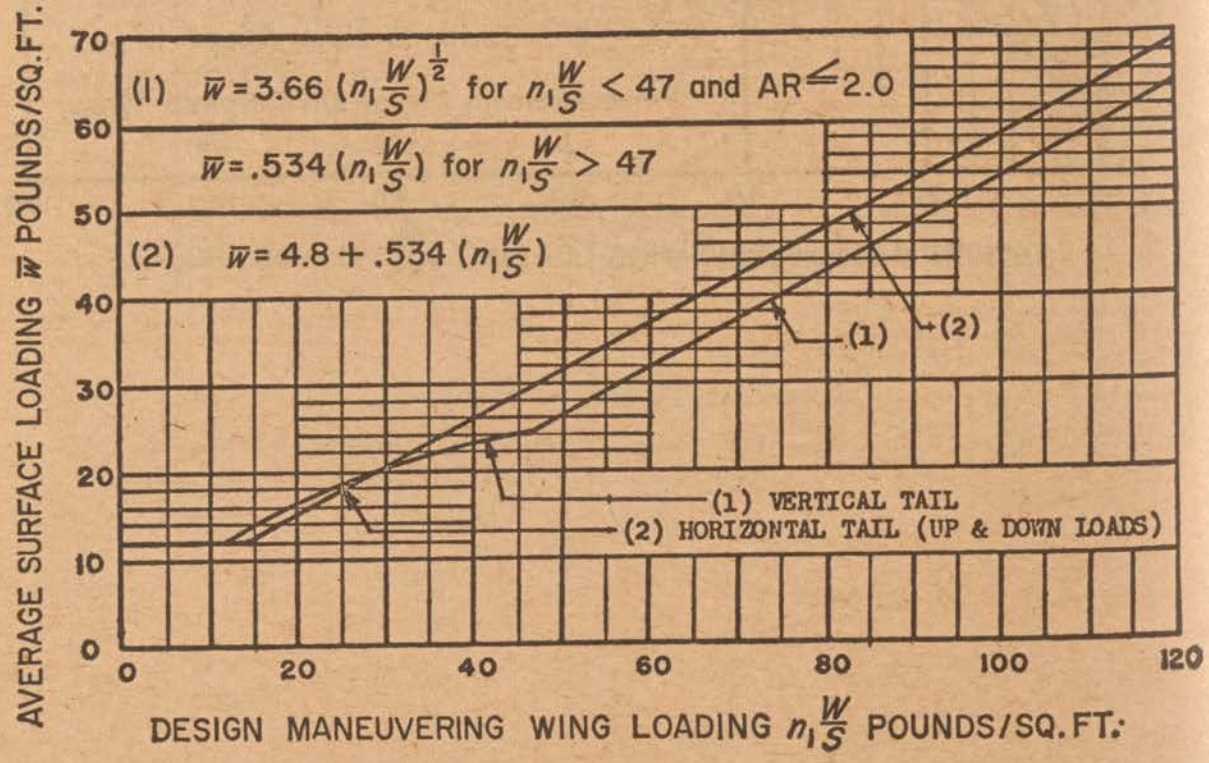
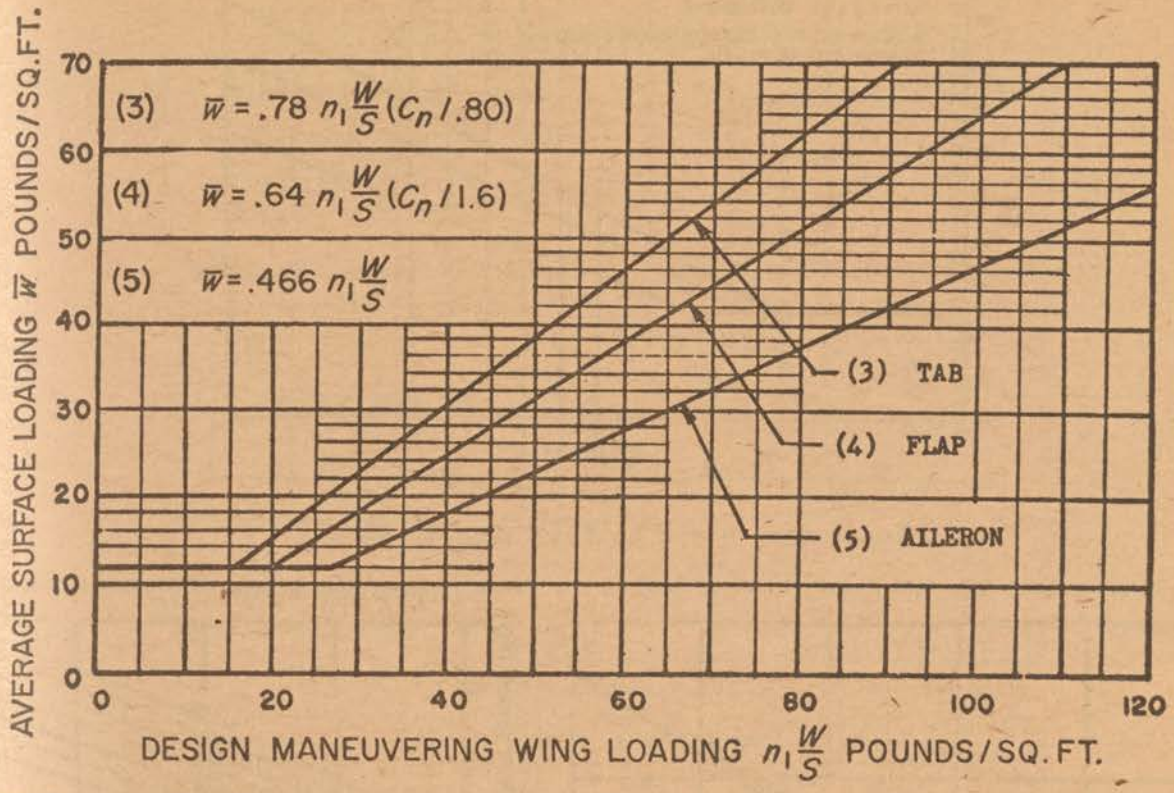


FIGURE 6 - AVERAGE LIMIT CONTROL SURFACE LOADING



APPENDIX B—CONTROL SURFACE LOADINGS

B23.1 *General.*

(a) If allowed by the specific requirements in this part, the values of control surface loading in this appendix may be used to determine the detailed rational requirements of §§ 23.303 through 23.351 unless the Administrator finds that these values result in unrealistic loads.

(b) For a seaplane version of a landplane, the landplane wing loadings may be used to determine the limit maneuvering control surface loadings (in accordance with B23.11 and figure 1 of Appendix B) if—

(1) The power of the seaplane engine(s) does not exceed the power of the landplane engine(s);

(2) The placard maneuver speed of the seaplane does not exceed the placard maneuver speed of the landplane;

(3) The maximum certificated weight of the seaplane does not exceed the maximum certificated weight of the landplane by more than 10 percent;

(4) The landplane service experience does not show any serious control-surface load problem; and

(5) The landplane service experience is of sufficient scope to ascertain with reasonable accuracy that no serious control-surface load problem will develop on the seaplane.

B23.11 *Control surface loads.*

Acceptable values of limit average maneuvering control-surface loadings may be obtained from figure 1 of this Appendix in accordance with the following:

(a) For horizontal tail surfaces—

(1) With the conditions in § 23.317(a), obtain W as a function of W/S and surface deflection, using—

(i) Curve C of figure 1 for a deflection of 10° or less;

(ii) Curve B of figure 1 for a deflection or 20°;

(iii) Curve A for a deflection of 30° or more;

(iv) Interpolation for all other deflections; and

(v) The distribution of figure 7; and

(2) With the conditions in § 23.317(b), obtain W from curve B of figure (1) using the distribution of figure 7. (b) For vertical tail surfaces—

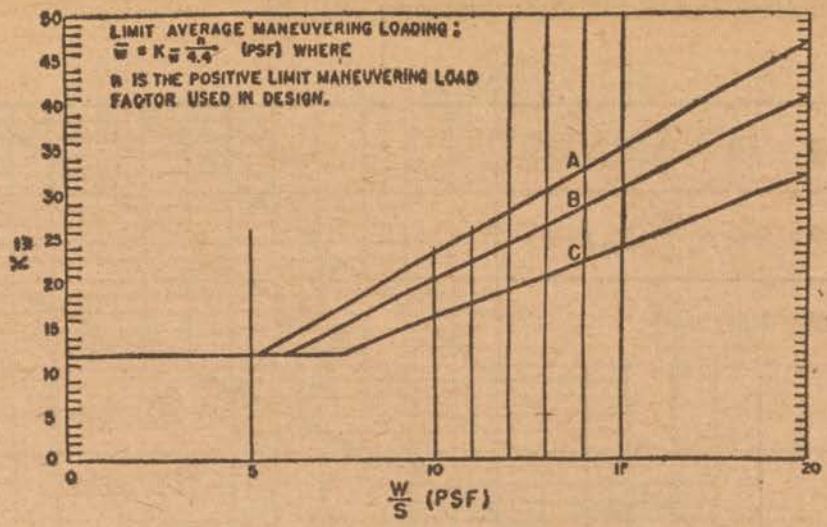
(i) With the conditions in § 23.331(a)(1), obtain W as a function of W/S and surface deflection using the same requirements as used in subdivisions (a)(1)(i) through (a)(1)(v);

(ii) With the conditions in § 23.331(a)(2), obtain W from Curve C, using the distribution of figure 6; and

(iii) With the conditions in § 23.331(a)(3), obtain W from Curve A, using the distribution of figure 8.

(c) For ailerons, obtain W from Curve B, acting in both the up and down directions, using the distribution of figure 9.

FIGURE 1—LIMIT AVERAGE MANEUVERING CONTROL SURFACE LOADING



Note: In no case may $\bar{w}$ be less than 12 psf.

FIGURE 2—MANEUVERING TAIL LOAD INCREMENT (UP OR DOWN)

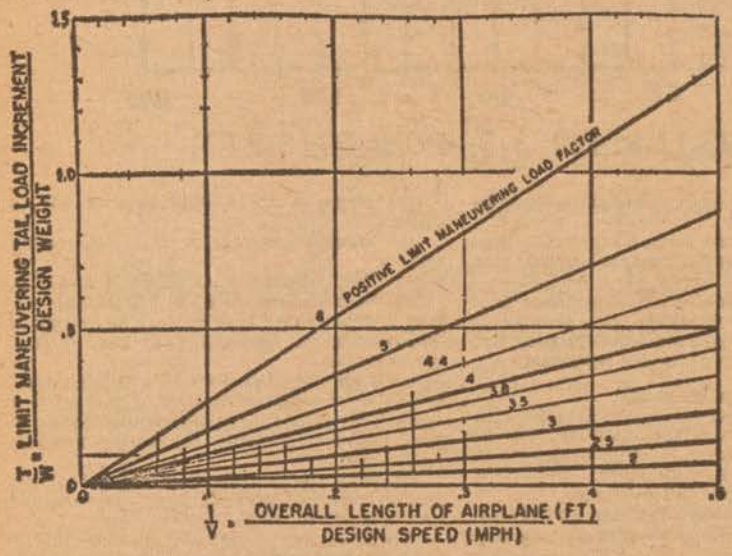


FIGURE 3—DOWN GUST LOADING ON HORIZONTAL TAIL SURFACE

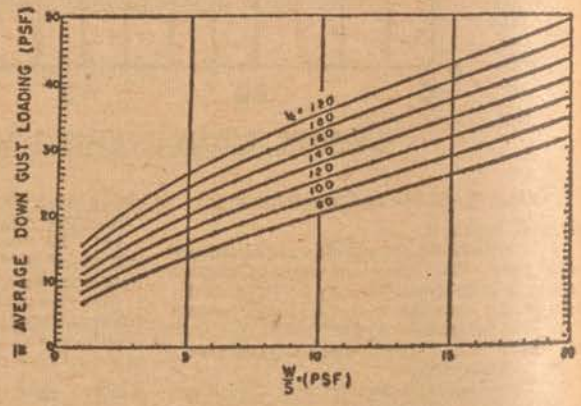


FIGURE 4—UP GUST LOADING ON HORIZONTAL TAIL SURFACE

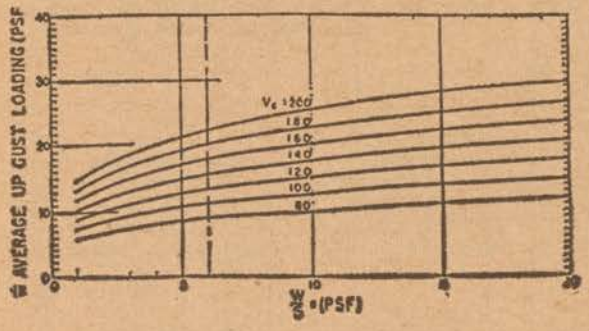


FIGURE 5—GUST LOADING ON VERTICAL TAIL SURFACE

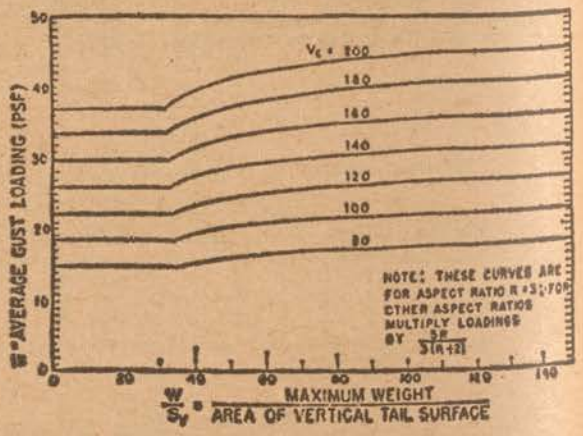


FIGURE 6—TAIL SURFACE LOAD DISTRIBUTION

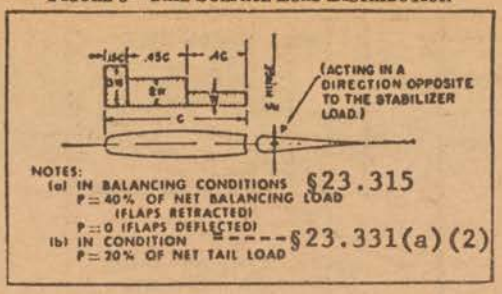


FIGURE 7—TAIL SURFACE LOAD DISTRIBUTION

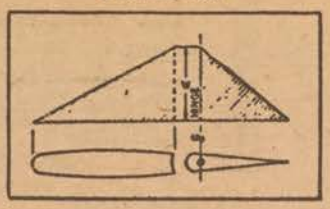


FIGURE 8—TAIL SURFACE LOAD DISTRIBUTION

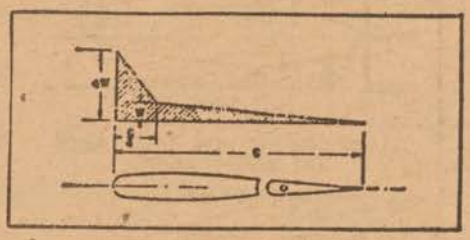
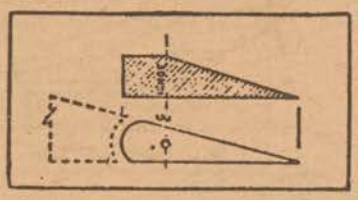


FIGURE 9—AILERON LOAD DISTRIBUTION



APPENDIX C—BASIC LANDING CONDITIONS

C23.1 *Basic landing conditions.*

Condition	Tail wheel type		Nose wheel type		
	Level landing	Tail-down landing	Level landing with inclined reactions	Level landing with nose wheel just clear of ground	Tail-down landing
Reference section	23.385(a)(1)	23.387(a)(1)	23.385(a)(2)(i)	23.385(a)(2)(ii)	23.387(a)(2) and (b)
Vertical component at c. g.	nW	nW	nW	nW	nW
Fore and aft component at c. g.	KnW	0	KnW	KnW	0
Lateral component in either direction at c. g.	0	0	0	0	0
Shock absorber extension (hydraulic shock absorber)	Note (2)	Note (2)	Note (2)	Note (2)	Note (2)
Shock absorber deflection (rubber or spring shock absorber)	100%	100%	100%	100%	100%
Tire deflection	Static	Static	Static	Static	Static
Main wheel loads (both wheels) V_r	$(n-L)W$	$(n-L)Wb/d$	$(n-L)Wa'/d'$	$(n-L)W$	$(n-L)W$
Main wheel loads (both wheels) D_r	KnW	0	$KnWa'/d'$	KnW	0
Tail (nose) wheel loads V_f	0	$(n-L)Wa/d$	$(n-L)Wb'/d'$	0	0
Tail (nose) wheel loads D_f	0	0	$KnWb'/d'$	0	0
Notes	(1), (3), and (4)	(4)	(1)	(1), (3), and (4)	(3) and (4)

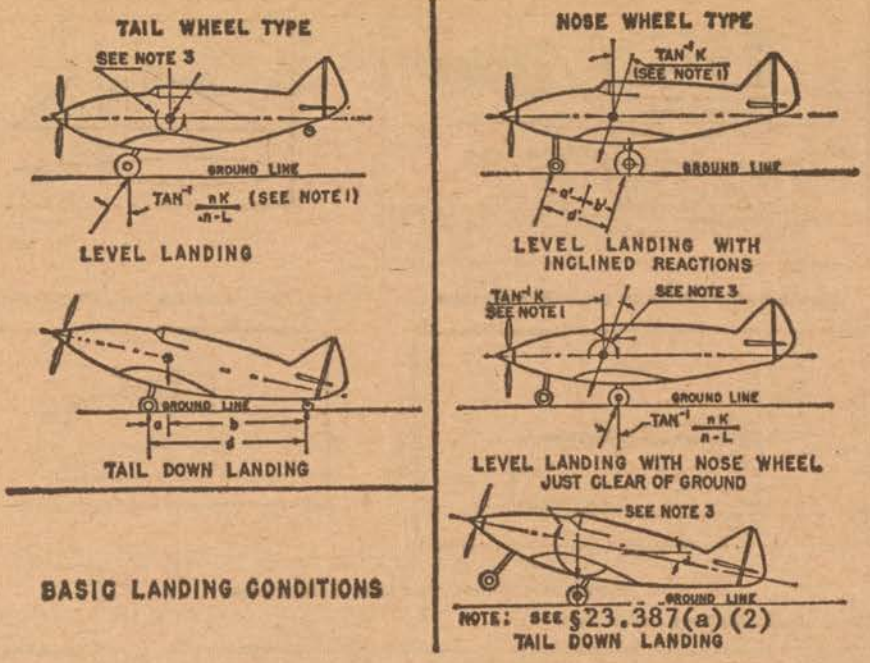
NOTE (1). K may be determined as follows: $K=0.25$ for $W=3{,}000$ pounds or less; $K=0.33$ for $W=6{,}000$ pounds or greater, with linear variation of K between these weights.

NOTE (2). For the purpose of design, the maximum load factor is assumed to occur throughout the shock absorber stroke from 25 percent deflection to 100 percent deflection unless otherwise shown and the load factor must be used with whatever shock absorber extension is most critical for each element of the landing gear.

NOTE (3). Unbalanced moments must be balanced by a rational or conservative method.

NOTE (4). L is defined in § 23.611(b).

FIGURE 1.



BASIC LANDING CONDITIONS

APPENDIX D—WHEEL SPIN-UP LOADS

D23.1 *Wheel spin-up loads.*

(a) The following method for determining wheel spin-up loads for landing conditions is based on NACA T.N. 863. However, the drag component used for design may not be less than the drag load prescribed in § 23.385(b).

$$F_{H\,max}=\frac{1}{r_e}\sqrt{\frac{2I_w(V_H-V_c)nF_{V\,max}}{t_z}}$$

where—

$F_{H\,max}$ = maximum rearward horizontal force acting on the wheel (in pounds);

r_e = effective rolling radius of wheel under impact based on recommended operating tire pressure (which may be assumed to be equal to the rolling radius under a static load of n_jW_e) in feet;

I_w = rotational mass moment of inertia of rolling assembly (in slug feet);

V_H = linear velocity of airplane parallel to ground at instant of contact (assumed to be 1.2 V_{S_0}, in feet per second);

V_c = peripheral speed of tire, if pre-rotation is used (in feet per second) (there must be a positive means of pre-rotation before pre-rotation may be considered);

n = effective coefficient of friction (0.80 may be used);

$F_{V\,max}$ = maximum vertical force on wheel (pounds) = n_jW_e, where W_e and n_j are defined in §§ 23.611 and 23.613;

t_z = time interval between ground contract and attainment of maximum vertical force on wheel (seconds). (However, if the value of $F_{V\,max}$, from the above equation exceeds 0.8 $F_{V\,max}$, the later value must be used for $F_{H\,max}$.)

(b) This equation assumes a linear variation of load factor with time until the peak load is reached and under this assumption, the equation determines the drag force at the time that the wheel peripheral velocity at radius r_e equals the airplane velocity. Most shock absorbers do not exactly follow a linear variation of load factor with time. Therefore, rational or conservative allowances must be made to compensate for these variations. On most landing gears, the time for wheel spin-up will be less than the time required to develop maximum vertical load factor for the specified rate of descent and forward velocity. For exceptionally large wheels, a wheel peripheral velocity equal to the ground speed may not have been attained at time of maximum vertical gear load. However, as stated above, the drag spin-up load need not exceed 0.8 of the maximum vertical loads.

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