FEDERAL REGISTER

Published by the Division of the Federal Register, The National Archives, pursuant to the authority contained in the Federal Register Act, approved July 26, 1935 (49 Stat. L. 500), under regulations prescribed by the Administrative Committee, with the approval of the President.

The Administrative Committee consists of the Archivist or Acting Archivist, an officer of the Department of Justice designated by the Attorney General, and the Public Printer or Acting Public Printer.

The daily issue of the FEDERAL REGISTER will be furnished by mail to subscribers, free of postage, for $1 per month or $10 per year; single copies 5 cents; payable in advance. Remit by money order payable to Superintendent of Documents, Government Printing Office, Washington, D. C.

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FRANKLIN D ROOSEVELT

THE WHITE HOUSE,
October 8, 1937.

[No. 7721]

[F. R. Doc. 37-2998; Filed, October 9, 1937; 11:44 a. m.]

EXECUTIVE ORDER

WITHDRAWAL OF PUBLIC LAND FOR THE USE, POSSESSION, AND CONTROL OF THE TENNESSEE VALLEY AUTHORITY

Alabama

By virtue of and pursuant to the authority vested in me by the act of June 25, 1910, ch. 421, 36 Stat. 847, as amended by the act of August 24, 1912, ch. 369, 37 Stat. 497, and by section 7 (b) of the act of May 18, 1933, 48 Stat. 58, 63, it is ordered as follows:

SECTION 1. Executive Order No. 6964 of February 5, 1935, as amended, temporarily withdrawing all public lands in certain states for classification and other purposes, is hereby revoked in so far as it affects the following-described tract of public land in Alabama:

HUNTSVILLE MERIDIAN

T. 4 S., R. 7 E., sec. 28, NW¼NW¼, 40 acres.

SECTION 2. The tract of land described in section 1 of this order is hereby temporarily withdrawn from settlement, location, sale, or entry and, subject to valid existing rights, reserved for the use, possession, and control of the Tennessee Valley Authority.

SECTION 3. The reservation made by section 2 of this order shall remain in force until revoked by the President or by act of Congress.

FRANKLIN D ROOSEVELT

THE WHITE HOUSE,
October 8, 1397.

[No. 7722]

[F. R. Doc. 37-2999; Filed October 9, 1937; 11: 44 a. m.]

EXECUTIVE ORDER

WITHDRAWAL OF PUBLIC LAND FOR CLASSIFICATION

New Mexico

By virtue of and pursuant to the authority vested in me by the act of June 25, 1910, ch. 421, 36 Stat. 847, as amended by the act of August 24, 1912, ch. 369, 37 Stat. 497, and subject to the conditions therein expressed, it is ordered that

the public lands within the following-described area in New Mexico be, and they are hereby, temporarily withdrawn from settlement, locations, sale, or entry for classification as to their suitability for wildlife refuge purposes:

NEW MEXICO PRINCIPAL MERIDIAN

T. 9 S., R. 25 E.,
sec. 11, E½NE¼, NE¼SE¼, and S½SE¼;
sec. 14, E½NE¼, S½NW¼, N½SW¼, and E½SE¼;
sec. 15, E½NE¼, SW¼, and N½SE¼;
sec. 21, E½SE¼;
sec. 22, SW¼NE¼, W½, and NW¼SE¼;
sec. 23, NE¼, S½NW¼, and SW¼;
sec. 26, N½NW¼;
sec. 27, N½NW¼;
sec. 28, N½NE¼, aggregating 1,960 acres.

This order shall continue in force until revoked by the President or by act of Congress.

FRANKLIN D ROOSEVELT

THE WHITE HOUSE,
October 8, 1937.

[No. 7723]

[F. R. Doc. 37-3001; Filed, October 11, 1937; 11:55 a. m.]

EXECUTIVE ORDER

ESTABLISHING BITTER LAKE MIGRATORY WATERFOWL REFUGE

New Mexico

By virtue of and pursuant to the authority vested in me as President of the United States and by the act of June 25, 1910, ch. 421, 36 Stat. 847, as amended by the act of August 24, 1912, ch. 369, 37 Stat. 497, and in order to effectuate further the purposes of the Migratory Bird Conservation Act (45 Stat. 1222), it is ordered that all lands owned or controlled by the United States within the following-described area, comprising 21,869 acres, more or less, in Chaves County, New Mexico, be, and they are hereby, reserved and set apart for the use of the Department of Agriculture, subject to valid existing rights, as a refuge and breeding ground for migratory birds and other wildlife: *Provided*, that any private lands within the area described shall become a part of the refuge hereby established upon the acquisition of title thereto or lease thereof by the United States:

NEW MEXICO PRINCIPAL MERIDIAN

T. 8 S., R. 24 E.,
sec. 24, S½SE¼;
sec. 25, NE¼, E½NW¼, E½SW¼ and SE¼.
T. 8 S., R. 25 E.,
sec. 13, SW¼;
sec. 14, S½;
sec. 15, S½;
sec. 16, S½;
sec. 17, all;
sec. 18, SE¼;
secs. 19 to 23, inclusive;
sec. 24, W½;
sec. 25, W½;
secs. 26 to 30, inclusive;
sec. 31, E½;
secs. 32 to 34, inclusive;
sec. 35, N½ and SW¼.
T. 9 S., R. 25 E.,
sec. 26, S½NW¼ and SW¼;
sec. 27, S½N½ and S½;
sec. 28, S½NE¼, SE¼SW¼, and SE¼;
sec. 32, NE¼NE¼, S½NE¼, E½SW¼, and SE¼;
secs. 33 and 34;
sec. 35 W½.
T. 10 S., R. 25 E.,
sec. 2, W½;
secs. 3 and 4;
sec. 5, lots 1, 2, 3, S½N½, and S½;
secs. 9 and 10;
sec. 11, W½;
sec. 14, NW¼;
sec. 15, N½ and SW¼;
sec. 16, all;
sec. 20, SE¼;
sec. 21, all;
T. 10 S., R. 25 E.—Continued.
sec. 22, W½NW¼;
sec. 28, N½NE¼ and W½;
sec. 29, E½.

The reservation made by this order supersedes as to any of the above-described lands affected thereby the temporary withdrawal for refuge classification made by Executive Order No. 5909 of August 22, 1932.

This refuge shall be known as the Bitter Lake Migratory Waterfowl Refuge.

FRANKLIN D ROOSEVELT

THE WHITE HOUSE,
October 8, 1937.

[No. 7724]

[F. R. Doc. 37-3002; Filed, October 11, 1937; 11:55 a. m.]

TREASURY DEPARTMENT.

Bureau of Internal Revenue.

[Regulations No. 7]

PRODUCTION, FORTIFICATION, TAX PAYMENT, ETC., OF WINE

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LAWS PERTAINING TO THE MANUFACTURE, FORTIFICATION, AND TAX PAYMENT OF WINE

NATURAL WINE

SEC. 610 (Act of February 24, 1919, as amended by section 11, Act of August 29, 1935, and section 330, Act of June 26, 1936) (U. S. C., 1934 ed., title 26, section 1310; U. S. C., 1934 ed., Sup. II, title 26, section 1310 (d)). That natural wine within the meaning of this Act shall be deemed to be the product made from the normal alcoholic fermentation of the juice of sound, ripe grapes, without addition or abstraction, except such as may occur in the usual cellar treatment of clarifying and aging: *Provided, however,* That the product made from the juice of sound, ripe grapes by complete fermentation of the must under proper cellar treatment and corrected by the addition (under the supervision of a gauger or storekeeper-gauger in the capacity of gauger) of a solution of water and pure cane, beet, or dextrose sugar (containing, respectively, not less than 95 per centum of actual sugar, calculated on a dry basis) to the must or to the wine, to correct natural deficencies, when such addition shall not increase the volume of the resultant product more than 35 per centum, and the resultant product does not contain less than five parts per thousand of acid before fermentation and not more than 13 per centum of alcohol after complete fermentation, shall be deemed to be wine within the meaning of this Act, and may be labeled, transported, and sold as "wine", qualified by the name of the locality where produced, and may be further qualified by the name of its own particular type or variety: *And provided further,* That wine as defined in this section may be sweetened with cane sugar or beet sugar or pure condensed grape must and fortified under the provisions of this Act, and wines so sweetened or fortified shall be considered sweet wine within the meaning of this Act.

FRUIT AND BERRY WINES

The provisions of the internal-revenue laws applicable to natural wine shall apply in the same manner and to the same extent to citrus fruit wines, peach wines, cherry wines, berry wines, apricot wines, and apple wines, which are the products, respectively, of normal alcoholic fermentation of the juice of sound ripe (1) citrus fruit (except lemons and limes), (2) peaches, (3) cherries, (4) berries, (5) apricots, or (6) apples, with or without the addition of dry cane, beet, or dextrose sugar containing, respectively, not less than 95 per centum of actual sugar, calculated on a dry basis for the purpose of perfecting the product according to standards, but without the addition or abstraction of other substances, except as may occur in the usual cellar treatment of clarifying or aging.

AUTHORITY TO WAIVE SUPERVISION

SEC. 318 (Act of June 26, 1936) (U. S. C., 1934, ed., Sup. II, title 26, section 1302–a). The Secretary of the Treasury may, by regulations, authorize the amelioration of wine by the winemaker and the fortification of wine, without supervision by any officer

of the United States, whenever he determines that such authorization may be made without danger to the revenue.

TAX ON STILL WINES

SEC. 611 (Act of February 24, 1919, as amended by section 451, Act of May 29, 1928, section 6, Act of January 11, 1934 and section 319 (c), Act of June 26, 1936) (U. S. C., 1934 ed., Sup. II, title 26, section 1300 (a) (1)). That upon all still wines, including vermouth, and all artificial or imitation wines or compounds sold as still wine, which are hereafter produced in or imported into the United States, or which on the day after the passage of this Act are on any winery premises or other bonded premises or in transit thereto or at any customhouse, there shall be levied, collected, and paid, in lieu of the internal revenue taxes now imposed thereon by law, taxes at rates as follows, when sold, or removed for consumption or sale:

On wines containing not more than 14 per centum of absolute alcohol, 5 cents per wine gallon, the per centum of alcohol under this section to be reckoned by volume and not by weight;

On wines containing more than 14 per centum and not exceeding 21 per centum of absolute alcohol, 10 cents per wine gallon;

On wines containing more than 21 per centum and not exceeding 24 per centum of absolute alcohol, 20 cents per wine gallon.

All such wines containing more than 24 per centum of absolute alcohol by volume shall be classed as distilled spirits and shall be taxed accordingly.

Any such wines may, under such regulations as the Secretary may prescribe, be sold or removed tax free for the manufacture of vinegar, or for the production of dealcoholized wines containing less than one-half of 1 per centum of alcohol by volume.

The taxes imposed by this section shall not apply to dealcoholized wines containing less than one-half of 1 per centum of alcohol by volume.

WITHDRAWAL OF BRANDY FOR USE IN FORTIFYING WINES—TAX ON BRANDY USED IN FORTIFYING WINES—BOND TO COVER TAX FULLY

SEC. 612 (Act of February 24, 1919, as amended by section 452, Act of May 29, 1928, section 8, Act of January 11, 1934, section 12, Act of August 29, 1935, and section 331, Act of June 26, 1936) (U. S. C., 1934 ed., Sup. II, title 26, section 1301). (a) Under such regulations and official supervision and upon the giving of such notices and entries as the Commissioner, with the approval of the Secretary, may prescribe, any producer of wines defined under the provisions of this title may withdraw from any fruit distillery or Internal Revenue Bonded Warehouse grape brandy, or wine spirits, for the fortification of such wines on the premises where actually made, and any producer of citrus-fruit wines, peach wines, cherry wines, berry wines, apricot wines, or apple wines may similarly withdraw citrus-fruit brandy, peach brandy, cherry brandy, berry brandy, apricot brandy, or apple brandy for the fortification, respectively, of citrus-fruit wines, peach wines, cherry wines, berry wines, apricot wines, or apple wines, on the premises where actually made: *Provided*, That after the date of the enactment of the Liquor Tax Administration Act there shall be levied and assessed against the producer of such wines or citrus-fruit wines, peach wines, cherry wines, berry wines, apricot wines, or apple wines (in lieu of the internal-revenue tax now imposed thereon by law) a tax of 10 cents per proof-gallon of grape brandy, citrus-fruit brandy, peach brandy, cherry brandy, berry brandy, apricot brandy, apple brandy, or wine spirits, whenever withdrawn and so used by him after such date in the fortification of such wines, or citrus-fruit wines or peach wines, cherry wines, berry wines, apricot wines, or apple wines during the preceding month, which assessment shall be paid by him within eighteen months from the date of notice thereof: *Provided*, That every producer of wine who withdraws such brandy, citrus-fruit brandy, peach brandy, cherry brandy, berry brandy, apricot brandy, apple brandy, or wine spirits shall give bond to fully cover at all times prior to payment of the assessment the amount of tax due on such brandy, citrus-fruit brandy, peach brandy, cherry brandy, berry brandy, apricot brandy, apple brandy, or wine spirits, which bond shall be in such form as the Commissioner of Internal Revenue, with the approval of the Secretary of the Treasury, shall, by regulations, prescribe. When such wines are destroyed or sold or removed for the manufacture of vinegar, or the production of dealcoholized wines, containing less than one-half of 1 per centum of alcohol by volume, the tax under this section on such grape brandy, citrus-fruit brandy, peach brandy, cherry brandy, berry brandy, apricot brandy, apple brandy, or wine spirits shall, under such regulations as the Secretary may prescribe be abated or refunded.

(b) Nothing contained in this section shall be construed as exempting any wines, citrus-fruit wines, peach wines, cherry wines, berry wines, apricot wines, apple wines, cordials, liqueurs, or similar compounds from the payment of any tax provided for in this title.

(c) Any such wines, or citrus-fruit wines, or peach wines, cherry wines, berry wines, apricot wines, apple wines, may, under such regulations as the Secretary may prescribe, be sold or removed tax free for the manufacture of vinegar, or for the production of dealcoholized wines containing less than one-half of 1 per centum of alcohol by volume.

(d) The taxes imposed by this section shall not apply to dealcoholized wines containing less than one-half of 1 per centum of alcohol by volume.

TAX ON CHAMPAGNE AND SPARKLING WINES

SEC. 613 (Act of February 24, 1919, as amended by section 7, Act of January 11, 1934, section 13, Act of August 29, 1935, and section 319 (d), Act of June 26, 1936) (U. S. C., 1934 ed., Sup. II, title 26, section 1300 (a) (2)). (a) Upon the following articles which are produced in or imported into the United States, after the date of the enactment of the Liquor Tax Administration Act, or which on the day after such date are on any winery premises or other bonded premises or in transit thereto or at any customhouse, there shall be levied, collected, and paid, in lieu of the internal-revenue taxes imposed thereon by law prior to such date, taxes at rates as follows, when sold, or removed for consumption or sale:

On each bottle or other container of champagne or sparkling wine, 2½ cents on each one-half pint or fraction thereof;

On each bottle or other container of artificially carbonated wine, 1¼ cents on each one-pint or fraction thereof:

On each bottle or other container of liqueurs, cordials, or similar compounds, by whatever name sold or offered for sale, containing sweet wine, citrus-fruit wine, peach wine, cherry wine, berry wine, apricot wine, or apple wine, fortified, respectively, with grape brandy, citrus-fruit brandy, peach brandy, cherry brandy, berry brandy, apricot brandy, or apple brandy, 1¼ cents on each one-half pint or fraction thereof;

Any of the foregoing articles containing more than 24 per centum of absolute alcohol by volume (except vermouth, liqueurs, cordials, and similar compounds made in rectifying plants and containing tax-paid sweet wine, citrus-fruit wine, peach wine, cherry wine, berry wine, apricot wine, or apple wine, fortified respectively, with grape brandy, citrus-fruit brandy, peach brandy, cherry brandy, berry brandy, apricot brandy, or apple brandy) shall be classed as distilled spirits and shall be taxed accordingly.

The Commissioner of Internal Revenue, subject to regulations prescribed by the Secretary of the Treasury, is authorized to remit, refund, and pay back the amount of all taxes on such liqueurs, cordials, and similar compounds paid by or assessed against rectifiers at the distilled spirits rate prior to the date of the enactment of the Liquor Tax Administration Act.

WINE TAX TO BE PAID BY STAMP—NOTICE AND BOND

SEC. 616 (Act of February 24, 1919, as amended by section 338, Act of June 26, 1936 (U. S. C., 1934 ed., title 26, section 1300 (b) (1) and Sup. II, title 26, sections 1300 (a) (1) and 1306). That the taxes imposed by section 611 or 613 shall be paid by stamp on removal of the wines from the customhouse, winery, or other bonded place of storage for consumption or sale, and every person hereafter producing, or having in his possession or under his control when this title takes effect, any wines subject to the tax imposed in section 611 or 613 shall file such notice, describing the premises on which such wines are produced or stored; shall execute a bond in such form; shall make such inventories under oath; and shall, prior to sale or removal for consumption, affix to each cask, barrel, bottle, or other immediate container, and to each case or other shipping container, of such wine, such marks, labels, or stamps as the Commissioner, with the approval of the Secretary, may from time to time prescribe as to each; and the premises described in such notice shall, for the purpose of this Act, be regarded as bonded premises. But the provisions of this section, except as to payment of tax and the affixing of the required stamps or labels, shall not apply to wines held by retail dealers, as defined in section 3244 of the Revised Statutes, nor, subject to regulations prescribed by the Commissioner, with the approval of the Secretary, shall the tax imposed by section 611 apply to wines produced for the family use of the duly registered producer thereof and not sold or otherwise removed from the place of manufacture and not exceeding in any case two hundred gallons per year.

USE OF WINE SPIRITS IN PRODUCTION OF SWEET WINES

SEC. 42 (Act of October 1, 1890, as amended by section 68, Act of August 27, 1894, section 617, Act of February 24, 1919, section 14, Act of August 29, 1935, and section 332, Act of June 26, 1936) (U. S. C., 1934 ed., title 26, section 1302 (a) and Sup. II, title 26, sections 1301 (e) and 1302 (a)). That any producer of pure sweet wines may use in the preparation of such sweet wines, under such regulations and after the filing of such notices and bonds, together with the keeping of such records and the rendition of such reports as to materials and products as the Commissioner of Internal Revenue, with the approval of the Secretary of the Treasury, may prescribe, wine spirits produced by any duly authorized distiller, and the Commissioner of Internal Revenue, in determining the liability of any distiller of wine spirits to assessment under section 3309 of the Revised Statutes, is authorized to allow such distiller credit in his computations for the wine spirits withdrawn to be used in fortifying sweet wines under this Act.

USE OF CITRUS-FRUIT BRANDY IN FORTIFYING CITRUS-FRUIT WINES

The provisions of this section and section 43 shall apply to the use of citrus-fruit brandy in the preparation of fortified citrus-fruit wines in the same manner and to the same extent as such provisions apply to the use of wine spirits in the fortification of sweet wines, except that no brandy (other than a citrus-fruit brandy) may be used in the fortification of citrus-fruit wine and a citrus-fruit brandy prepared from one kind of citrus fruit may not be used for the fortification of a citrus-fruit wine prepared

from another kind of citrus fruit or for the fortification of a wine prepared from any fruit other than citrus fruit.

USE OF FRUIT AND BERRY BRANDIES IN FORTIFYING FRUIT AND BERRY WINES

The provisions of this section and section 43 shall apply to the use of peach brandy, cherry brandy, berry brandy, apricot brandy, and apple brandy, in the preparation, respectively, of fortified peach wines, cherry wines, berry wines, apricot wines, and apple wines, in the same manner and to the same extent as such provisions apply to the use of wine spirits in the fortification of sweet wines; except that (1) no brandy other than peach brandy may be used in the fortification of peach wine and peach brandy may not be used for the fortification of any wine other than peach wine, (2) no brandy other than cherry brandy may be used in the fortification of cherry wine and cherry brandy may not be used for the fortification of any wine other than cherry wine, (3) no brandy other than berry brandy may be used in the fortification of berry wine and a berry brandy prepared from one kind of berry may not be used for the fortification of a berry wine prepared from another kind of berry or for the fortification of any wine other than berry wine, (4) no brandy other than apricot brandy may be used in the fortification of apricot wine and apricot brandy may not be used for the fortification of any wine other than apricot wine, and (5) no brandy other than apple brandy may be used in the fortification of apple wine and apple brandy may not be used for the fortification of any wine other than apple wine.

WINE SPIRITS—PURE SWEET WINES

SEC. 43 (Act of October 1, 1890, amended by section 68, Act of August 27, 1894, and section 617, Act of February 24, 1919) (U. S. C., 1934 ed., title 26, section 1302 (d)). That the wine spirits mentioned in section 42 is the product resulting from the distillation of fermented grape juice, to which water may have been added prior to, during, or after fermentation, for the sole purpose of facilitating the fermentation and economical distillation thereof, and shall be held to include the product from grapes or their residues commonly known as grape brandy, and shall include commercial grape brandy which may have been colored with burnt sugar or caramel; and the pure sweet wine which may be fortified with wine spirits under the provisions of this act is fermented or partially fermented grape juice only, with the usual cellar treatment, and shall contain no other substance whatever introduced before, at the time of, or after fermentation, except as herein expressly provided: *Provided*, That the addition of pure boiled or condensed grape must or pure crystallized cane or beet sugar, or pure dextrose sugar containing, respectively, not less than 95 per centum of actual sugar, calculated on a dry basis, or water, or any or all of them, to the pure grape juice before fermentation, or to the fermented product of such grape juice, or to both, prior to the fortification herein provided for, either for the purpose of perfecting sweet wines according to commercial standards or for mechanical purposes, shall not be excluded by the definition of pure sweet wine aforesaid: *Provided, however*, That the cane or beet sugar, or pure dextrose sugar added for sweetening purposes shall not be in excess of 11 per centum of the weight of the wine to be fortified: *And provided further*, That the addition of water herein authorized shall be under such regulations as the Commissioner of Internal Revenue, with the approval of the Secretary of the Treasury, may from time to time prescribe: *Provided, however*, That records kept in accordance with such regulations as to the percentage of saccharine, acid, alcoholic, and added water content of the wine offered for fortification shall be open to inspection by any official of the Department of Agriculture thereto duly authorized by the Secretary of Agriculture; but in no case shall such wines to which water has been added be eligible for fortification under the provisions of this act, where the same, after fermentation and before fortification, have an alcoholic strength of less than 5 per centum of their volume.

WITHDRAWAL OF WINE SPIRITS FOR USE IN FORTIFYING PURE SWEET WINES—WHERE WINES MAY BE FORTIFIED—GOVERNMENT SUPERVISION OF FORTIFYING WINES

SEC. 45 (Act of October 1, 1890, as amended by section 68, Act of August 27, 1894, and section 617, Act of February 24, 1919) (U. S. C., 1934 ed., title 26, section 1302 (b) and (c)). That under such regulations and official supervision, and upon the execution of such entries and the giving of such bonds, bills of lading, and other security as the Commissioner of Internal Revenue, with the approval of the Secretary of the Treasury, shall prescribe, any producer of pure sweet wines as defined by this act may withdraw wine spirits from any special bonded warehouse in original packages or from any registered distillery in any quantity not less than eighty wine gallons, and may use so much of the same as may be required by him under such regulations, and after the filing of such notices and bonds and the keeping of such records and the rendition of such reports as to materials and products and the disposition of the same as the Commissioner of Internal Revenue, with the approval of the Secretary of the Treasury, shall prescribe in fortifying the pure sweet wines made by him, and for no other purpose, in accordance with the foregoing limitations and provisions; and the Commissioner of Internal Revenue, with the approval of the Secretary of the Treasury, is authorized whenever he shall deem it to be necessary for the prevention of violations of this law to prescribe that wine spirits withdrawn under this section shall not be used to fortify wines except at a certain distance prescribed by him from any distillery, rectifying house, winery, or other establishment used for producing or storing distilled spirits, or for making or storing wines other than wines which are so fortified, and that in the building in which such fortification of wines is practiced no wines or spirits other than those permitted by this regulation shall be stored in any room or part of the building in which fortification of wines is practiced. The use of wine spirits for the fortification of sweet wines under this act shall be under the immediate supervision of an officer of internal revenue, who shall make returns describing the kinds and quantities of wine so fortified, and shall affix such stamps and seals to the packages containing such wines as may be prescribed by the Commissioner of Internal Revenue, with the approval of the Secretary of the Treasury; and the Commissioner of Internal Revenue, with the approval of the Secretary of the Treasury, shall provide by regulations the time within which wines so fortified with the wine spirits so withdrawn may be subject to inspection, and for final accounting for the use of such wine spirits and for rewarehousing or for payment of the tax on any portion of such wine spirits which remain not used in fortifying pure sweet wines.

FILTERING, CLARIFYING, OR PURIFYING—MANUFACTURE OF VERMOUTH

SEC. 319 (b) (Act of June 26, 1936) (U. S. C., 1934 ed., Sup. II, title 26, section 1151 (e) and (f)). Section 605 of the Revenue Act of 1918, as amended, is amended by adding at the end thereof two new paragraphs reading as follows:

"The filtering, clarifying, or purifying of wines on bonded winery premises or bonded storeroom premises shall not be deemed to be rectification within the meaning of paragraph 'Third' of section 3244 of the Revised Statutes (U. S. C., 1934 ed., title 26, sec. 1398 (f). The Commissioner of Internal Revenue, with the approval of the Secretary of the Treasury, shall prescribe such regulations under this section as he deems necessary.

"The manufacture of vermouth with fortified sweet wine on bonded winery premises shall not be deemed to be rectification within the meaning of paragraph 'Third' of section 3244 of the Revised Statutes, if distilled spirits are not added to the fortified sweet wine used in the manufacture thereof or to such vermouth during or after its manufacture. Such vermouth may be manufactured on bonded winery premises, but only in a separate department thereof having no interior communication with any other department or part of such premises, under such supervision and in accordance with such regulations as the Commissioner of Internal Revenue, with the approval of the Secretary of the Treasury, shall prescribe."

TRANSFER OF WINE IN BOND

SEC. 618 (Act of February 24, 1919, as amended by section 334, Act of June 26, 1936) (U. S. C., 1934 ed., title 26, section 1303, and Sup. II, title 26, section 1304). (a) That under such regulations and upon the execution of such notices, entries, bonds, and other security as the commissioner, with the approval of the Secretary, may prescribe, domestic wines subject to the tax imposed by section 611 (U. S. C., 1934 ed., Sup. II, title 26, section 1300 (a) (1)) may be removed from the winery where produced, free of tax, for storage on other bonded premises or from such premises to other bonded premises (but not more than one such additional removal shall be allowed), or for exportation from the United States, or for use as distilling material at any regularly registered distillery: *Provided, however*, That the distiller using any such wine as material shall, subject to the provisions of section 3309 of the Revised Statutes, as amended (U. S. C., 1934 ed., title 26, section 1197), be held to pay the tax on the product of such wines as will include both the alcoholic strength therein produced by fermentation and that obtained from the brandy or wine spirits added to such wines at the time of fortification.

WINES FOR USE AS DISTILLING MATERIAL

(b) Under regulations prescribed by the Commissioner with the approval of the Secretary, it shall be lawful to produce grape wines, citrus-fruit wines, peach wines, cherry wines, berry wines, apricot wines, and apple wines on bonded winery premises by the usual method, and to transport and use the same, and like wines heretofore produced and now stored on bonded winery premises, as distilling material in any fruit-brandy distillery or industrial-alcohol plant.

ASSESSMENT OF TAX ON IMPORTED WINES

SEC. 619 (Act of February 24, 1919) (U. S. C., 1934 ed., title 26, section 1300 (b)(2)). That the collection of the tax on imported still wines, including vermouth, and sparkling wines, including champagne, and on imported liqueurs, cordials, and similar compounds, may be made within the discretion of the Commissioner, with the approval of the Secretary, by assessment instead of by stamps.

NOT TO COMMENCE OR CONTINUE BUSINESS UNTIL BOND IS APPROVED

SEC. 67 (Act of August 27, 1894, as amended by section 305, Act of June 26, 1936) (U. S. C., 1934 ed., Sup. II, title 26, section 1166 (c)). (a) No individual, firm, partnership, corporation, or association, intending to commence or to continue the business of a distiller, rectifier, brewer, or winemaker, shall commence or con-

tinue the business of a distiller, rectifier, brewer, or winemaker until all bonds in respect of such a business, required by any provision of law, have been approved by the Commissioner of Internal Revenue or such other officer of the Bureau of Internal Revenue as the Commissioner, with the approval of the Secretary of the Treasury, may designate.

DISAPPROVAL OF BOND

(b) The Commissioner or the designated officer may disapprove any such bond or bonds if the individual, firm, partnership, corporation, or association giving the same, or owning, controlling, or actively participating in the management of the business of the individual or firm, partnership, corporation, or association giving the same, shall have been previously convicted, in a court of competent jurisdiction, of (1) any fraudulent noncompliance with any provision of any law of the United States if such provision related to internal-revenue or customs taxation of distilled spirits, wines, or fermented malt liquors, or if such an offense shall have been compromised, with the individual, firm, partnership, corporation, or association upon payment of penalties or otherwise, or (2) any felony under a law of any State, Territory, or the District of Columbia, or the United States, prohibiting the manufacture, sale, importation, or transportation of distilled spirits, wine, fermented malt liquor, or other intoxicating liquor.

(c) In case the disapproval is by any officer other than the Commissioner, the individual, firm, partnership, corporation, or association giving the bond may appeal from such disapproval to the Commissioner.

(d) The disapproval of the Commissioner in any matter under this section shall be final.

PENALTY FOR VIOLATION OF WINE LAWS—BLENDING OF WINES—USE OF ALCOHOL IN FORTIFYING WINES

SEC. 620 (Act of February 24, 1919, as amended by section 335, Act of June 26, 1936) (U. S. C., 1934 ed., Sup. II, title 26, section 1309). That whoever evades or attempts to evade any tax imposed by sections 611 to 615, both inclusive, or any requirement of sections 610 to 621, both inclusive, or regulation issued pursuant thereto, or whoever, otherwise than as provided in such sections, recovers or attempts to recover any spirits from domestic or imported wine, shall, on conviction, be punished for each such offense by a fine of not exceeding $5,000, or imprisonment for not more than five years, or both, and in addition thereto by a penalty of double the tax evaded, or attempted to be evaded, to be assessed and collected in the same manner as taxes are assessed and collected, and all wines, spirits, liqueurs, cordials, or similar compounds as to which such violation occurs shall be forfeited to the United States. But the provisions of this section and the provisions of section 3244 of the Revised Statutes, as amended, relating to rectification, or other internal revenue laws of the United States, shall not be held to apply to or prohibit the mixing or blending of wines subject to tax under the provisions of sections 611 to 615, both inclusive, with each other or with other wines for the sole purpose of perfecting such wines according to commercial standards: *Provided*, That nothing herein contained shall be construed as prohibiting the use of tax-paid grain or other ethyl alcohol in the fortification of sweet wines as defined in section 610 of this Act and section 43 of the Act entitled "An Act to reduce the revenue and equalize duties on imports, and for other purposes," approved October 1, 1890, as amended by this Act.

SPIRIT METERS, LOCKS AND SEALS—SUPERVISION BY GOVERNMENT OFFICERS

SEC. 621 (Act of February 24, 1919) (U. S. C., 1934 ed., title 26, sections 1307, 1308). That the Commissioner, by regulations to be approved by the Secretary, may require the use at each fruit distillery of such spirit meters, and such locks and seals to be affixed to fermenters, tanks, or other vessels and to such pipe connections as may in his judgment be necessary or expedient, and is hereby authorized to assign to any such distillery and to each winery where wines are to be fortified such number of gaugers or storekeeper-gaugers in the capacity of gaugers as may be necessary for the proper supervision of the manufacture of brandy or the making or fortifying of wines subject to tax imposed by this section; and the compensation of such officers shall not exceed $5 per diem while so assigned, together with their actual and necessary traveling expenses, and also a reasonable allowance for their board bills, to be fixed by the Commissioner, with the approval of the Secretary, but not to exceed $2.50 per diem for such board bills.

ALLOWANCE FOR LOSSES OF WINE

SEC. 622 (Act of February 24, 1919 (U. S. C., 1934 ed., title 26, section 1305). That the Commissioner, with the approval of the Secretary, is hereby authorized to make such allowances for unavoidable loss of wines while on storage or during cellar treatment as in his judgment may be just and proper.

BRANDY DISTILLERS' EXEMPTION—USE OF WINE ARTIFICIALLY SWEETENED

SEC. 3255 (Revised Statutes, as amended by Act of June 3, 1896, Act of March 2, 1911, section 404, Act of September 8, 1916, section 625, Act of February 24, 1919, section 15, Act of August 29, 1935, and section 333, Act of June 26, 1936) (U. S. C., 1934 ed., Sup. II, title 26, section 1176). The Commissioner of Internal Revenue, with the approval of the Secretary of the Treasury, may exempt distillers of brandy made exclusively from apples, peaches, grapes, oranges, pears, pineapples, apricots, berries, plums, pawpaws, persimmons, prunes, figs, cherries, dates, or citrus fruits (except lemons and limes) from any provision of the internal-revenue laws relating to the manufacture of spirits, except as to the tax thereon, when in his judgment it may seem expedient to do so: *Provided*, That where, in the manufacture of wine or citrus-fruit wine, peach wine, cherry wine, berry wine, apricot wine, or apple wine, artificial sweetening has been used, the wine, or the fruit pomace residuum thereof, or the citrus-fruit wine, peach wine, cherry wine, berry wine, apricot wine, or apple wine may be used in the distillation of brandy or citrus-fruit brandy, peach brandy, cherry brandy, berry brandy, apricot brandy, or apple brandy, as the case may be, and such use shall not prevent the Commissioner of Internal Revenue with the approval of the Secretary of the Treasury, from exempting such distiller from any provision of the internal-revenue laws relating to the manufacture of spirits, except as to the tax thereon, when in his judgment it may seem expedient to do so: *And provided further*, That the distillers mentioned in this section may add to not less than five hundred gallons (ten barrels) of grape cheese not more than five hundred gallons of a sugar solution made from cane, beet, starch, or corn sugar, 95 per centum pure, such solution to have a saccharine strength of not to exceed 10 per centum, and may ferment the resultant mixture on a winery or distillery premises, and such fermented product shall be regarded as distilling material.

LAWS APPLICABLE

SEC. 1305 (Act of February 24, 1919) (U. S. C., 1934 ed., title 26, sections 1345, 1349). That all administrative, special, or stamp provisions of law, including the law relating to the assessment of taxes, so far as applicable, are hereby extended to and made a part of this Act, and every person liable to any tax imposed by this Act, or for the collection thereof, shall keep such records and render, under oath, such statements and returns, and shall comply with such regulations as the Commissioner, with the approval of the Secretary, may from time to time prescribe.

Whenever in the judgment of the Commissioner necessary, he may require any person, by notice served upon him, to make a return or such statements as he deems sufficient to show whether or not such person is liable to tax.

EXAMINATION OF BOOKS AND RECORDS

The Commissioner, for the purpose of ascertaining the correctness of any return or for the purpose of making a return where none has been made, is hereby authorized, by any revenue agent or inspector designated by him for that purpose, to examine any books, papers, records or memoranda bearing upon the matters required to be included in the return, and may require the attendance of the person rendering the return or of any officer or employee of such person, or the attendance of any other person having knowledge in the premises, and may take his testimony with reference to the matter required by law to be included in such return, with power to administer oaths to such person or persons.

PENALTY FOR NONCOMPLIANCE WITH TAX LAWS

SEC. 1308 (Act of February 24, 1919) (U. S. C., 1934 ed., title 26, section 1347 (b)). (a) That any person required under Titles V, VI, VII, VIII, IX, X, or XII, to pay, or to collect, account for and pay over any tax, or required by law or regulations made under authority thereof to make a return or supply any information for the purposes of the computation, assessment or collection of any such tax, who fails to pay, collect, or truly account for and pay over any such tax, make any such return, or supply any such information at the time or times required by law or regulation shall in addition to other penalties provided by law be subject to a penalty of not more than $1,000.

(b) Any person who willfully refuses to pay, collect, or truly account for and pay over any such tax, make such return or supply such information at the time or times required by law or regulation, or who willfully attempts in any manner to evade such tax shall be guilty of a misdemeanor and in addition to other penalties provided by law shall be fined not more than $10,000 or imprisoned for not more than one year, or both, together with the costs of prosecution.

DEFINITION OF TERM "PERSON"

(d) The term "person" as used in this section includes an officer or employee of a corporation or a member or employee of a partnership, who as such officer, employee, or member is under a duty to perform the act in respect of which the violation occurs.

COMMISSIONER TO MAKE REGULATIONS

SEC. 1309 (Act of February 24, 1919) (U. S. C., 1934 ed., title 26, section 1350). That the Commissioner, with the approval of the Secretary, is hereby authorized to make all needful rules and regulations for the enforcement of the provisions of this Act.

ATTESTATION TO RETURNS

The Commissioner with such approval may by regulation provide that any return required by Titles V, VI, VII, VIII, IX, or X to be under oath may, if the amount of the tax covered thereby is not in excess of $10, be signed or acknowledged before two witnesses instead of under oath.

BONDED MANUFACTURING WAREHOUSES

SEC. 311 (Tariff Act of 1930, as amended by section 404, Act of June 26, 1936) (U. S. C., 1934 ed., title 19, section 1311 and Sup. II, Title 19, section 1311). All articles manufactured in whole or in part of imported materials, or of materials subject to internal-revenue tax, and intended for exportation without being charged with duty, and without having an internal-revenue stamp affixed thereto, shall, under such regulations as the Secretary of the Treasury may prescribe, in order to be so manufactured and exported, be made and manufactured in bonded warehouses similar to those known and designated in Treasury regulations as bonded warehouses, class six: *Provided*, That the manufacturer of such articles shall first give satisfactory bonds for the faithful observance of all the provisions of law and of such regulations as shall be prescribed by the Secretary of the Treasury: *Provided further*, That the manufacture of distilled spirits from grain, starch, molasses, or sugar, including all dilutions or mixtures of them or either of them, shall not be permitted in such manufacturing warehouses.

* * * * *

TRANSFER TO BONDED MANUFACTURING WAREHOUSES WITHOUT PAYMENT OF TAX

Any materials used in the manufacture of such goods, and any packages, coverings, vessels, brands, and labels used in putting up the same may, under the regulations of the Secretary of the Treasury, be conveyed without the payment of revenue tax or duty into any bonded manufacturing warehouse, and imported goods may, under the aforesaid regulations be transferred without the exaction of duty from any bonded warehouse into any bonded manufacturing warehouse; but this privilege shall not be held to apply to implements machinery or apparatus to be used in the construction or repair of any bonded manufacturing warehouse or for the prosecution of the business carried on therein.

* * * * *

USE OF WINES IN BONDED MANUFACTURING WAREHOUSE

Distilled spirits and wines which are rectified in bonded manufacturing warehouses, class six, and distilled spirits which are reduced in proof and bottled in such warehouses, shall be deemed to have been manufactured within the meaning of this section, and may be withdrawn as hereinbefore provided, and likewise for shipment in bond to Puerto Rico, subject to the provisions of this section, and under such regulations as the Secretary of the Treasury may prescribe, there to be withdrawn for consumption or be rewarehoused and subsequently withdrawn for consumption: *Provided*, That upon withdrawal in Puerto Rico for consumption, the duties imposed by the customs laws of the United States shall be collected on all imported merchandise (in its condition as imported) and imported containers used in the manufacture and putting up of such spirits and wines in such warehouses: *Provided further*, That no internal-revenue tax shall be imposed on distilled spirits and wines rectified in class six warehouses if such distilled spirits and wines are exported or shipped in accordance with the provisions of this section, and that no person rectifying distilled spirits or wines in such warehouses shall be subject by reason of such rectification to the payment of special tax as a rectifier.

TAX NOT TO APPLY ON ARTICLES FOR EXPORT

SEC. 1310 (Act of February 24, 1919) (U. S. C., 1934 ed., title 26, section 1352). (c) Under such rules and regulations as the Commissioner with the approval of the Secretary may prescribe, the taxes imposed under the provisions of Titles VI, VII, or IX shall not apply in respect to articles sold or leased for export and in due course so exported. Under such rules and regulations the amount of any internal revenue tax erroneously or illegally collected in respect to exported articles may be refunded to the exporter of the article, instead of to the manufacturer, if the manufacturer waives any claim for the amount so to be refunded.

RIGHT OF ENTRY OF GOVERNMENT OFFICERS

SEC. 3177 (Revised Statutes) (U. S. C., 1934 ed., title 26, section 1501). Any collector, deputy collector, or inspector may enter, in the daytime, any building or place where any articles or objects subject to tax are made, produced, or kept, within his district, so far as it may be necessary for the purpose of examining said articles or objects. And any owner of such building or place, or person having the agency or superintendence of the same, who refuses to admit such officer, or to suffer him to examine such article or articles, shall, for every such refusal, forfeit $500. And when such premises are open at night, such officers may enter them while so open, in the performance of their official duties. And if any person shall forcibly obstruct or hinder any collector, deputy collector, or inspector, in the execution of any power and authority vested in him by law, or shall forcibly rescue or cause to be rescued any property, articles, or objects after the same shall have been seized by him, or shall attempt or endeavor so to do, the person so offending, excepting in cases otherwise provided for, shall, for every such offense, forfeit and pay the sum of $500, or double the value of the property so rescued, or be imprisoned for a term not exceeding two years, at the discretion of the court.

ALLOWANCE FOR ACCIDENTAL LOSS OF SPIRITS

SEC. 3221 (Revised Statutes, as amended by section 6, Act of March 1, 1879) (U. S. C., 1934 ed., title 26, section 1275 (b)). The Secretary of the Treasury, upon the production to him of satisfactory proof of the actual destruction by accidental fire or other casualty, and without any fraud, collusion, or negligence of the owner thereof, of any distilled spirits, while the same remained in the custody of any officer of internal revenue in any distillery warehouse, or bonded warehouse of the United States and before the tax thereon has been paid, may abate the amount of internal taxes accruing thereon, and may cancel any warehouse bond, or enter satisfaction thereon, in whole or in part, as the case may be. And if such taxes have been collected since the destruction of said spirits, the said Secretary shall refund the same to the owners thereof out of any moneys in the Treasury not otherwise appropriated. And when any distilled spirits are hereafter destroyed by accidental fire or other casualty, without any fraud, collusion, or negligence of the owner thereof, after the time when the same should have been drawn off by the gauger and placed in the distillery warehouse provided by law, no tax shall be collected on such spirits so destroyed, or if collected, it shall be refunded upon the production of satisfactory proof that the spirits were destroyed as herein specified.

INSURANCE ON SPIRITS LOST BY ACCIDENT

SEC. 3223 (Revised Statutes, as amended by section 3, Act of March 1, 1879) (U. S. C., 1934 ed., title 26, section 1275 (b)). When the owners of distilled spirits in the cases provided for by the two preceding sections may be indemnified against such tax by a valid claim of insurance for a sum greater than the actual value of the distilled spirits before and without the tax being paid, the tax shall not be remitted to the extent of such insurance.

ACCIDENTAL LOSS OF GRAPE BRANDY

SEC. 5 (Act of June 7, 1906) (U. S. C., 1934 ed., title 26, section 1275 (b)). That the provisions of sections 3221 and 3223 of the Revised Statutes of the United States, as amended by an Act approved March 1, 1879, are hereby extended to grape brandy withdrawn for use in the fortification of sweet wines, and which, prior to such use, is accidentally destroyed by fire or other casualty while stored in the fortifying room on the winery premises.

LOSS OF SPIRITS BY THEFT

SEC. 16 (Act of August 27, 1935) (U. S. C., 1934 ed., Sup. II, title 27, section 166). If distilled spirits upon which the internal revenue tax has not been paid are lost by theft, accidental fire, or other casualty while in possession of a common carrier subject to the Transportation Act of 1920 or the Merchant Marine Act, 1920, or if lost by theft from a distillery or other bonded warehouse, and it shall be made to appear to the Commissioner that such losses did not occur as the result of negligence, connivance, collusion, or fraud on the part of the owner or person legally accountable for such distilled spirits, no tax shall be assessed or collected upon the distilled spirits so lost, nor shall any tax penalty be imposed or collected by reason of such loss, but the exemption from the tax and penalty shall only be allowed to the extent that the claimant is not indemnified against or recompensed for such loss. This provision shall apply to any claim for taxes or tax penalties that may have accrued since the passage of the National Prohibition Act or that may accrue hereafter. Nothing in this section shall be construed as in any manner limiting or restricting the provisions of Title III of the National Prohibition Act.

RETAIL LIQUOR DEALER'S TAX

SEC. 323 (Act of June 26, 1936). Paragraph "Fourth" of section 3244 of the Revised Statutes, as amended (U. S. C., 1934 ed., title 26, sec. 1394 (a) and (b) (1), and sec. 1398 (a) and (b)), is amended to read as follows:

"Fourth. (a) Retail dealers in liquors shall pay a special tax of $25. Every person who sells, or offers for sale, foreign or domestic distilled spirits, wines, or malt liquors, otherwise than as hereinafter provided, in less quantities than five wine gallons to the same person at the same time, shall be regarded as a retail dealer in liquors: *Provided*, That the Commissioner of Internal Revenue may, by regulations, with the approval of the Secretary of the Treasury, provide for the issuance of a stamp denoting payment of such special tax as a 'retail dealer in wines' or a 'retail dealer in wines and malt liquors' if, as the case may be, wines only, or wines and malt liquors only, are sold by a retail dealer in liquors: *And provided further*, That the tax required to be paid by this paragraph shall, in case of a retail drug store or pharmacy making sales of liquors through a duly licensed pharmacist, be designated as a 'medicinal spirit stamp tax': *And provided further*, That any retail dealer in liquors or retail dealer in malt liquors whose business is such as to require him to travel from place to place in different States of the United States may, under regulations prescribed by the Commissioner of Internal Revenue, with the approval of the Secretary of the Treasury, procure a special tax stamp 'At Large' covering his activities throughout the United States with the payment of but one special tax as a retail dealer in liquors or as a retail dealer in malt liquors, as the case may be.

(U. S. C., 1934 ed., Sup. II, title 26, sections 1934 (b) (1) and 1398 (b).)

WHOLESALE LIQUOR DEALER'S TAX

"(b) Wholesale dealers in liquors shall pay a special tax of $100. Every person who sells, or offers for sale, foreign or domestic distilled spirits, wines, or malt liquors, otherwise than as hereinafter provided, in quantities of five wine gallons or more to the same person at the same time, shall be regarded as a wholesale dealer in liquors: *Provided*, That the Commissioner of Internal Revenue may, by regulations, with the approval of the Secretary of the Treasury, provide for the issuance of a stamp denoting payment of such special tax as a 'wholesale dealer in wines' or a 'wholesale dealer in wines and malt liquors' if, as the case may be, wines only, or wines and malt liquors only, are sold by a wholesale dealer in liquors. A qualified wholesale dealer in liquors may not sell distilled spirits, wines, or malt liquors in quantities of less than five wine gallons without incurring liability to special tax as a retail dealer in liquors. A qualified retail dealer in liquors may not sell such liquors in quantities of five wine gallons or more to the same person at the same time without incurring liability to special tax as a wholesale dealer in liquors. But no distiller who has given the required bond and who sells only distilled spirits of his own production at the place of manufacture, or at the place of storage in bond, in the original packages to which the tax-paid stamps are affixed, shall be required to pay the special tax of a wholesale dealer in liquors on account of such sales. (U. S. C., 1934 ed., Sup. II, title 26, sections 1394 (a) (1) and (2) and 1398 (a).)

"(c) No retail dealer in liquors shall be held to be a wholesale dealer in liquors solely by reason of sales of five wine gallons or more to the same person at the same time if such sales are for immediate consumption on the premises where sold. (U. S. C., 1934 ed., Sup. II, title 26, section 1398 (b).)

"(d) No wholesale or retail dealer in liquors who has paid the special tax as such a dealer shall again be required to pay special tax as such dealer on account of sales of beer, lager beer, ale, porter, or other similar fermented malt liquor to wholesale or retail dealers in liquors or wholesale or retail dealers in malt liquors consummated at the purchaser's place of business covered by the stamp issued to him to denote the payment of the special tax imposed upon such dealers." (U. S. C., 1934 ed., Sup. II, title 26, section 1394 (a) (3).)

SPECIAL TAX EXEMPTION OF WINEMAKER

SEC. 3246 (Revised Statutes, as amended by section 5, Act of March 1, 1879, Act of March 3, 1915, and section 328, Act of June 26, 1936) (U. S. C., 1934 ed., Sup. II, title 26, section 1394 (g)). (a) Nothing in this chapter shall be construed to impose a special tax upon winemakers who have qualified as such under the internal-revenue laws and regulations, and who sell wines of their own production where the same are made or at the general business office of such winemaker: *Provided*, That no winemaker shall have more than one place of business for the sale of such wine that shall be exempt from the special tax.

AUTHORITY CONFERRED ON THE SECRETARY

SEC. 161 (Revised Statutes) (U. S. C., 1934 ed., title 5, section 22). The head of each department is authorized to prescribe regulations, not inconsistent with law, for the government of his department, the conduct of its officers and clerks, the distribution and performance of its business, and the custody, use, and preservation of the records, papers, and property appertaining to it.

TREASURY DECISION NO. 4662

DUTIES TO BE PERFORMED BY THE ALCOHOL TAX UNIT, BUREAU OF INTERNAL REVENUE

TREASURY DEPARTMENT,
OFFICE OF COMMISSIONER OF INTERNAL REVENUE.

To Officers and Employees of the Bureau of Internal Revenue, Collectors of Internal Revenue, and Others Concerned:

(1) Pursuant to section 161, R. S. (U. S. C., 1934 ed., title 5, section 22), the Alcohol Tax Unit is charged with the administration, under the direction of the Commissioner of Internal Revenue, of the laws and regulations concerning the following subjects:

(*a*) The production, custody, and supervision of distilled spirits, alcohol, wines, fermented liquors, cereal beverages, denatured alcohol, and other such liquors and liquids;

(*b*) The establishment, construction, operation, custody, and supervision of distilleries, industrial alcohol plants, bonded warehouses, denaturing plants, wineries, bonded wine storerooms, breweries, rectifying houses, dealcoholizing plants, cereal beverage plants, and other places at which such spirits, liquors, or liquids are produced or stored;

(*c*) The determination, assertion, and assessment of all internal revenue taxes and penalties pertaining to distilled spirits, alcohol, wines, fermented liquors, cereal beverages, denatured alcohol, denatured rum, and articles containing denatured alcohol or denatured rum, and other such liquors and liquids, and the compromise thereof, except that all moneys shall be received and accounted for by the collectors of internal revenue under the direction of the Commissioner of Internal Revenue;

(*d*) Inquiries and investigations relating to the filing of returns for occupational and commodity taxes and penalties in respect to distilled spirits, alcohol, wines, fermented liquors, cereal beverages, denatured alcohol, denatured rum, and articles containing denatured alcohol or denatured rum, and other such liquors and liquids;

(*e*) The investigation, prevention, and detection of violations of the laws pertaining to distilled spirits, alcohol, wines, fermented liquors, cereal beverages, denatured alcohol, denatured rum, or articles containing denatured alcohol or denatured rum, and other such liquors and liquids, or any regulations issued thereunder, and the apprehension of offenders against such laws;

(*f*) The detention and seizure, for violation of laws relating to distilled spirits, alcohol, wines, fermented liquors, cereal beverages, denatured alcohol, denatured rum, and articles containing denatured alcohol or denatured rum, and other such liquors and liquids, of property, whether real or personal (except seizure under distraint warrant), and the custody, control, sale and disposition of property so seized;

(*g*) The discharge of liens under section 902 of the Revenue Act of 1926;

(*h*) The regulation of the size, branding, marking, sale, resale, possession, use, and reuse of containers (of a capacity of less than five wine gallons) designed or intended for use for the sale at retail of distilled spirits; the issuance, suspension and revocation of permits for the manufacture, storage, procurement and transportation of such containers; and the investigation, prevention, and detection of violations of the laws or regulations pertaining to such containers;

(*i*) The filing of correct returns by every person disposing of any substance of the character used in the manufacture of distilled spirits; the filing of correct returns by every person disposing of any denatured alcohol, denatured rum, or articles containing denatured alcohol or denatured rum; and the keeping of records of the disposition of such substances, denatured alcohol, denatured rum, and articles containing denatured alcohol or denatured rum.

2. Pursuant to section 5 of the "Liquor Enforcement Act of 1936," there are hereby conferred and imposed upon the Deputy Commissioner of Internal Revenue in charge of the Alcohol Tax Unit, and the assistants, inspectors, and agents under his supervision, subject to the direction of the Commissioner of Internal Revenue and subject to regulations prescribed by him with the approval of the Secretary of the Treasury, all the rights, privileges, powers, duties, and protection conferred and imposed upon the Secretary of the Treasury, the Commissioner of Internal Revenue, or any other officer or employee of the Treasury Department by any law now or hereafter in force relating to the taxation, transportation, manufacture, possession, or use of, or traffic in distilled spirits, wines, fermented liquors, or denatured alcohol, in so far as they relate to the duties to be performed by the Alcohol Tax Unit as enumerated in paragraph 1 hereof.

3. Except as has been, or may hereafter be, otherwise provided, all regulations prescribed, all orders and instructions issued, and all forms adopted for the enforcement of the laws heretofore administered by the Commissioner of In-

dustrial Alcohol or the Bureau of Industrial Alcohol, and assistants, inspectors, and agents thereunder, and remaining in effect after the repeal of the eighteenth amendment, will continue in effect as regulations, orders, instructions, and forms of the Bureau of Internal Revenue: *Provided*, That the term "Commissioner" or "Commissioner of Industrial Alcohol" and the term "Supervisor" or "Supervisor of permits," wherever used in such regulations, orders, instructions, and forms, shall be held to mean, respectively, "Deputy Commissioner of Internal Revenue" and "District supervisor."

GUY T. HELVERING,
Commissioner of Internal Revenue.

Approved July 3, 1936.

WAYNE C. TAYLOR,
Acting Secretary of the Treasury.

[Filed with the Division of the Federal Register July 8, 1936 12:51 p.m.]

PART 1—REGULATIONS RELATING TO THE PRODUCTION AND DISTRIBUTION OF WINES

ARTICLE I—SCOPE OF REGULATIONS

PARAGRAPH 1. *Manufacture of wine.*—These regulations are prescribed pursuant to the provisions of law governing the production, distribution, and tax-payment of wine.

ARTICLE II—REGULATIONS SUPERSEDED

PAR. 2. *Regulations superseded.*—These regulations shall, on and after the date of approval thereof, supersede Regulations 7, approved March 6, 1930 (except Part Three), and all amendments and modifications thereof.

ARTICLE III—DEFINITIONS

PAR. 3. *Definitions.*—As used in these regulations, the following words and phrases shall have the meanings as herein defined:

(*a*) "Must" and "juice" shall mean the unfermented juice as expressed from grapes or other authorized fruits.

(*b*) "Natural wine" shall mean wine produced in accordance with the first paragraph of section 610 of the Revenue Act of 1918, as amended.

(*c*) "Pure sweet wine" shall mean wine produced in accordance with section 43 of the Act of October 1, 1890, as amended.

(*d*) "Citrus-fruit wine," "peach wine," "cherry wine," "berry wine," "apricot wine," and "apple wine" shall mean wine produced in accordance with the last paragraph of section 610 of the Revenue Act of 1918, as amended.

(*e*) "Vermouth" shall mean vermouth manufactured in accordance with the last paragraph of section 605 of the Revenue Act of 1918, as amended.

(*f*) "Dry wine" shall mean unfortified wine.

(*g*) "Sweet wine" shall mean fortified wine.

(*h*) "Fortified wine" shall mean wine fortified with brandy or ethyl alcohol as herein provided.

(*i*) "Still wine" shall mean noneffervescent wine and includes both dry and sweet wine.

(*j*) "Champagne" and "sparkling wine" shall mean effervescent wine charged with carbon dioxide, resulting from secondary fermentation of the wine.

(*k*) "Artificially carbonated wine" shall mean effervescent wine artificially charged with carbon dioxide.

(*l*) "Commissioner" shall mean the Commissioner of Internal Revenue.

(*m*) "District supervisor" shall mean the person having charge of a supervisory district of the Alcohol Tax Unit of the Bureau of Internal Revenue.

(*n*) "Collector" shall mean collector of internal revenue.

(*o*) "Proprietor" shall mean the operator of the bonded winery, bonded storeroom, or bonded field warehouse.

(*p*) "Winemaker" shall mean the proprietor of a bonded winery or bonded storeroom.

(*q*) "Person," "proprietor," or "winemaker" shall include natural persons, associations, copartnerships, and corporations.

(*r*) Words in the plural form shall include the singular and words in the masculine gender shall include females, associations, copartnerships, and corporations.

(*s*) "Wine," when used without qualification, includes champagne and other sparkling wines, artificially carbonated wine, and vermouth produced on bonded winery premises.

ARTICLE IV—BONDED PREMISES

PAR. 4. *Bonded wineries and bonded storerooms.*—For the purpose of these regulations, bonded premises where wines are produced will be designated as bonded wineries, and bonded premises where wines are stored in bond will be designated bonded storerooms and bonded field warehouses.

PAR. 5. *Registry numbers.*—Bonded premises will be numbered serially by district supervisors in the order of establishment. A separate series will be used for each State within a supervisory district. Registry numbers will be assigned to new wineries and storerooms in sequence to numbers heretofore assigned. Registry numbers assigned to wineries and storerooms now operating will be retained.

PAR. 6. *Discontinued premises.*—Registry numbers of discontinued premises will not be assigned to other premises. In the case of a successor taking over the winery or storeroom the same registry number will be retained.

PAR. 7. *Bonded field warehouses.*—Responsible warehouse companies may establish bonded storerooms designated bonded field warehouses, for the storage of wine for credit purposes. A bonded field warehouse must be contiguous or adjacent to a bonded winery and may receive wines only from such winery. The baking of wine is permitted at bonded field warehouses. The provisions of these regulations relating to bonded storerooms shall, except as otherwise indicated, apply to bonded field warehouses.

ARTICLE V—USE OF BONDED PREMISES

PAR. 8. *Winery not used for other purposes.*—The winery must be used exclusively for the production and storage of wine, and no materials, liquids, or liquors other than those used in the manufacture, amelioration, or fortification of wine may be produced or stored on the premises: *Provided, however*, That juice, concentrate, and sirup may be made from grapes and other authorized fruits, and stored on the premises if record is kept of the quantities of grapes and other authorized fruits used therefor and the quantities of such materials produced, stored, and removed from the premises. Bonded storeroom premises must be used exclusively for the storage of wines, except that wines may at both wineries and storerooms be subjected to the usual cellar treatment, including blending, clarification, and purification. Wines may not be produced or ameliorated on bonded storeroom premises.

PAR. 9. *Report of juice, concentrate, and sirup.*—When juice, concentrate, or sirup is made from grapes or other authorized fruits, the quantity crushed for such purposes will be shown on the winery material report, Form 701, and there will be attached to the winemaker's monthly report, Form 702, each month that such materials are produced, remain on hand, or are removed from the winery, a statement showing the quantity made, on hand, and removed, and giving the names and addresses of the parties to whom the materials are shipped and the date and quantity shipped to each party. All tanks and other containers within which such juice, concentrate, or sirup made from grapes or other authorized fruits is stored must be conspicuously labeled to show the kind of material contained therein.

PAR. 10. *Vermouth department.*—Vermouth may be manufactured only in a separate department of the bonded winery premises constructed as provided in Article VI. The vermouth department must be used exclusively for the manufacture and storage of vermouth and for the storage of supplies necessary or incidental to the manufacture of vermouth. The vermouth department may not be used for

the storage of still wine or sparkling wine. All fortified sweet wine transferred to the vermouth department must be used immediately in the manufacture of vermouth. When the manufacture of vermouth has been completed, the finished product may be transferred to another department of the winery for storage therein, but vermouth so transferred must at all times be kept separate and apart from still wines and sparkling wines on the premises.

PAR. 11. *Imported and tax-paid wines.*—No domestic tax-paid wines and no imported wines may be stored on the winery or storeroom premises. Proprietors desiring to tax-pay and store wines in advance of sales or to store returned tax-paid wines, must provide storage therefor, after tax-payment, off the bonded premises. If the premises at which the tax-paid wines are stored are in the same building in which the winery or storeroom is located, or in a building adjoining a winery or storeroom building, they must be separated from the bonded premises by a solid and unbroken partition, except openings for ventilation or heating purposes, substantially constructed and so situated that wine may not be transferred thereto from the winery, except through a public street or open yard or through a public hall or elevator shaft leading into a public street or open yard. Openings in partition walls for ventilation or heating purposes must be protected with iron or steel grating consisting of a frame and horizontal and perpendicular bars, having a diameter of not less than one-fourth inch and spaced not more than one-half inch apart, or other gratings of similar construction and equal strength securely attached to or embedded in the partition wall.

PAR. 12. *Tax-paid wine returned for clarification.*—Tax-paid wines in stamped packages may be returned for clarification to the bonded premises from which withdrawn or to other bonded premises operated by the person tax-paying the wine, but such wines must not be mixed with untax-paid wines and must be immediately clarified, returned to the original stamped packages, and removed from the bonded premises. When wine intended for clarification and reshipment in the original packages is received on the bonded premises, the winemaker shall keep a commercial record showing the name and address of the person from whom the wine is received, the date, quantity, and tax classification, and, when returned to the original packages, the date of reshipment, together with the name and address of the person to whom shipped. In case the winemaker does not wish to clarify, return to the original packages and remove immediately, he may return the wine to stock and retax-pay upon removal. When the wine is returned to stock, it will be entered on Form 702 or 702–A as wine received.

PAR. 13. *Wine under lock.*—The portions of the bonded premises in which wines are stored must be kept securely locked in the absence of the proprietor or his agents.

ARTICLE VI—CONSTRUCTION AND EQUIPMENT

PAR. 14. *Wineries and bonded storerooms.*—Bonded wineries and bonded storerooms must be so constructed and equipped as to be suitable for the production, in the case of wineries, and storage of wine, and so that the wines stored therein will be securely protected. The buildings or rooms in in which wines are stored or treated must be securely constructed of substantial material. All doors, windows, or other openings must be so arranged that they may be securely locked or fastened. Fermenting tanks, except those used exclusively for the production of distilling material, must be under a roof or other suitable covering, but need not be enclosed in a building.

PAR. 15. *Vermouth department.*—There must be no interior communication between the vermouth department and any other department or part of the winery premises. The entrance door of the vermouth department shall lead directly into a public street or yard or into the yard of the bonded winery or into an open passageway leading directly to the bonded winery yard or to a public street or open yard.

PAR. 16. *Tanks.*—All fermenters, storage tanks, vermouth processing tanks, and other containers must be so arranged and located as to permit ready examination and determination of their contents by inspecting officers. All pipes, hose, or other conveyors leading to or from the tanks must be so connected and arranged as to be easily visible to examining officers.

PAR. 17. *Fortifying room.*—If wine is to be fortified, a room for such fortification and the storage of brandy must be constructed and equipped in accordance with Part 2 of these regulations.

PAR. 18. *Storage of sweetening agents.*—If it is desired to store sweetening materials for use in the amelioration of wine, a room for the storage of such materials must be provided.

PAR. 19. *Marking on tanks.*—Each fermenter, storage tank, bottling tank, and vermouth processing tank must have painted thereon a permanent serial number and the capacity of the tank in wine gallons. Each vermouth processing tank must also have painted thereon the capacity of the tank per inch of depth, or must have securely attached thereto a table showing the capacity of the tank for each inch of depth. There must also be attached to each copy of Form 698, Application for Approval of Bonded Winery or Bonded Storeroom Premises, a table for each vermouth processing tank, showing the serial number thereof and the capacity for each inch of depth, and where practicable, the inside measurements of the tank. Serial numbers of fermenting tanks shall be preceded by the letter "F" and storage tanks by the letter "S." The serial numbers of vermouth processing tanks and bottling tanks shall be preceded by the letters "P" and "B", respectively. Where barrels are used in processing vermouth there must be painted thereon the capacity in wine gallons and a permanent serial number preceded by the letters "P R."

PAR. 20. *Markings on puncheons and barrels.*—A permanent serial number and the capacity in wine gallons must be painted on puncheons used for storage containers as in the case of storage tanks. A permanent serial number need not be painted on barrels or puncheons used as storage containers and which will be used as shipping containers upon removal of the wines, but the capacity in wine gallons must be plainly marked on each such container.

PAR. 21. *Capacity markings.*—Proprietors will be held responsible for the correctness of the capacity markings of all tanks. Where wooden tanks are used they must be remeasured from time to time and the new capacity marked on the tanks. Report of changes in the measurement and capacity of tanks must be made by the proprietor in triplicate in the manner prescribed in paragraph 46. Allowance will not be made for deficiencies of wine claimed to be due to incorrect gauge of tanks.

PAR. 22. *Separation of winery or storeroom from other premises.*—Buildings or rooms constituting a bonded winery or bonded storeroom must be separated from contiguous buildings or rooms by a solid unbroken partition substantially constructed: *Provided*, That where a bonded winery and a fruit distillery or industrial alcohol plant operated by the same person are located on contiguous premises, pipe lines may, as hereinafter prescribed, be installed for the transfer of brandy from the fruit distillery to the fortifying room of the winery, and for the transfer of wine for use as distilling material from the winery to the fruit distillery or industrial alcohol plant. With the approval of the district supervisor, doors may be placed in the partition separating the bonded field warehouse from the winery contiguous thereto, and provision made for the transfer of wine between such premises by fixed pipe line or by hose. Partitions between a bonded field warehouse and a bonded winery must be constructed of wood or other suitable material and any connecting doors shall be kept closed and locked at all times, except when necessarily open for the transaction of business. The entrance door of a bonded winery or storeroom shall lead directly into a public street or yard or into the yard of the bonded premises or into a public hall or other common passageway leading directly to a public street or open yard.

PAR. 23. *Winery in building used as residence.*—Where the winery or storeroom premises are situated in a building used as a private residence, they must be separated by an unbroken partition (or floor, if a basement is used) and an entrance directly from the outside must be provided.

PAR. 24. *Winery premises.*—All winery and storeroom premises now established must be made, so far as reasonably practicable and as soon as possible, to conform to the requirements of this article, and those hereafter established must be in conformity herewith.

ARTICLE VII—SIGN

PAR. 25. *Posting sign.*—The proprietor shall place and keep conspicuously on the outside of each bonded winery or storeroom, so that it can be plainly seen, a sign bearing in plain, legible, and durable letters and figures not less than 3 inches in height and of proportionate width, the words "Bonded Winery," "Bonded Storeroom," or "Bonded Field Warehouse," as the case may be, followed by the registered name and number of the premises. Where a vermouth department is established, there must be placed over the entrance door thereof a similar sign bearing the words "Vermouth Dept."

ARTICLE VIII—INSTRUMENTS AND MEASURES

PAR. 26. *Testing instruments and measures.*—The proprietor of each winery and storeroom must provide at his own expense appropriate and accurate instruments and measures for testing and measuring the wine: *Provided, however,* That instruments for testing wine need not be kept at storerooms where no wine is blended and where the alcoholic content of the wine on hand has been determined.

PAR. 27. *Measuring rod.*—An accurate measuring rod and steel tape suitable for use in ascertaining the capacity and contents of tanks and other storage containers, and appropriate measures for determining the contents of shipping containers, must be provided. Measuring instruments shall be available for the use of Government officers.

PAR. 28. *Scales and measures.*—At each winery there must be provided scales and measures for weighing and measuring the materials received and used in the manufacture of wine. However, where material is used immediately upon receipt, public weighmasters' certificates of weight, showing gross weight, tare, and net weight, or the shipper's or railroad weight may be accepted in lieu of weighing materials at the winery, but such certificates must be filed and kept available for inspection. If wines are ameliorated or fortified, proper instruments for determining the sugar, acid, and alcoholic contents of the wine must also be provided.

PAR. 29. *Amelioration of wine.*—Where wines are ameliorated under section 610 of the Revenue Act of 1918, as amended, there must be provided one or more suitable measuring tanks within which the quantity of sugar solution used and the quantity of wine, both before and after amelioration, may be accurately measured. Such measuring tank or tanks must have painted thereon the capacity of the tank per inch of depth, or must have securely attached thereto a table showing the capacity of the tank for each inch of depth, a copy of which must be attached to each Form 698.

PAR. 30. *Amelioration of pure sweet wine.*—Where pure sweet wines are ameliorated under section 43 of the Act of October 1, 1890, as amended, a suitable weighing tank or other proper means must be provided for accurately determining the weight of sugar and water to be used and the weight of the wine before amelioration.

PAR. 31. *Ebulliometers.*—The Salleron-Dujardin ebullioscope and the Juerst, Lefco, "TAG" (with shield) and malligand type (with shield) ebulliometers have been approved for use in determining the alcoholic content of wines. An ebulliometer called the E–B Torinc, which is similar to the Malligand type, has been approved if used with a shield. Instructions for the use of the Salleron-Dujardin ebullioscope, the Juerst ebulliometer, and the Lefco ebulliometer, will be found in Part 3 of these regulations.

PAR. 32. *Saccharometers.*—Both the alcoholic content and the saccharine content of wine may be determined by the use of a small still and appropriate saccharometer. The saccharine content of wine can also be determined by the use of a set of three saccharometers graded to read from 0 to 10, 10 to 20, and 20 to 30, in connection with the ebullioscope. Instructions for ascertaining the saccharine content of wine with these instruments will be found in Part 3. Apparatus for use in determining the acidity of wine is listed in the Appendix.

PAR. 33. *Other instruments.*—If the instruments referred to in the two preceding paragraphs are not provided, other appropriate and accurate instruments approved by the Commissioner must be provided in lieu thereof.

ARTICLE IX—FAA PERMIT

PAR. 34. *Permit required.*—Under the Federal Alcohol Administration Act and the regulations issued pursuant thereto, any person, excepting any agency of a State or political subdivision thereof or any officer or employee of any such agency, intending to engage in the business of producing or blending wine, or of purchasing wine for resale at wholesale, is required to procure a permit therefor from the Federal Alcohol Administration, Washington, D. C.

PAR. 35. *Copies filed with district supervisor.*—Any person filing an application, bond, and other papers, as hereinafter required, with the district supervisor for the establishment of a bonded winery or a bonded storeroom where wines are to be blended or purchased for resale at wholesale, shall exhibit the original of such permit to the district supervisor and file two photostat copies thereof with him. No application for the establishment of a bonded winery, or a bonded storeroom where wines are to be blended or purchased for resale at wholesale, will be approved until such permit has been exhibited to the district supervisor and two copies thereof filed with him.

ARTICLE X—APPLICATION AND PLAN

PAR. 36. *Form 698.*—Every person desiring to establish a bonded winery or storeroom shall file with the district supervisor an application on Form 698 in triplicate for approval of the premises. Barrels or puncheons used as storage containers and which will be used as shipping containers need not be described on Form 698. Where tanks are of such shapes that it is practicable to determine their capacities from inside measurements as described in Part Three, there must be attached to each copy of Form 698 a table showing the serial number and capacity of each such tank, together with such measurements.

PAR. 37. *Plat and plan.*—There must be submitted with the application, Form 698, a plat and plan of the bonded premises, except that in instances where it is practicable to show on the plat the information required herein, and such information is in fact so shown, a separate plan of the premises will not be required. The plat and the accompanying plan, where required, must be furnished in triplicate on sheets of white paper of good quality or tracing linen 15 by 20 inches, outside measurement, with a clear margin of at least 1 inch on each side of the drawing, lettering, and writing. The plat must show the boundaries of the premises, the location, construction, and size of each building or room, and the purpose for which each will be used. If the bonded premises is to be a room or floor of a building, the precise location of the room or floor, together with the means of ingress from and egress into a public street or yard or into a public hall or elevator shaft leading into a public street or yard, must be shown. If the bonded premises consist of more than one building, they must be shown in their relative positions. The surrounding driveways, streets, and sidings shall also be indicated on the plat. The plan shall include a description of each room, or of each floor of each building to constitute the bonded premises, including the dimensions of the room or floor, the location of all doors, windows, or other openings and their dimensions, and how the same are

secured. The location of Government locks will be indicated by the letters "GL."

If the construction of all floors in a single building is identical, a typical floor plan may be filed in lieu of a separate plan for each floor. The plan must also show the location, serial numbers, and capacities of all tanks in the fortifying room and in the vermouth department, and the course of all pipe lines used for conveying wine to or from the fortifying room or wine to or vermouth from the vermouth department. Pipe lines used for conveying wine from or to the bonded premises and between buildings on the premises must also be shown. All pipe lines throughout their entire lengths must traverse bonded premises. Where a fruit distillery is maintained on contiguous premises, the relative position of the distillery and winery premises and all pipe line connections between the two premises must be shown on the plat or plan, though the distillery construction and equipment need not be described. The pipe line used for conveying brandy from the distillery to the fortifying room shall be painted black and shown in such color on the plan. Where the bonded premises consist of a portion of a building or adjoin other premises, such surroundings must be depicted and the bonded area shown in a contrasting color.

PAR. 38. *Certificate of accuracy.*—The points of the compass shall be indicated on each sheet of every plat and plan, both original and supplemental, and each such sheet shall also bear a number and descriptive title and name and address of the proprietor, and a certificate of accuracy dated and signed by the proprietor and the district supervisor. The certificate shall be in the following form:

_____ District, _____ 19__.

We hereby certify that this is an accurate plat (or plan or supplemental plat or plan, as the case may be) of the winery or storeroom or bonded field warehouse premises of _____ of this district.

_____
(Proprietor)

_____
(District Supervisor)

All plats or plans or supplemental plats or plans prepared after a registry number has been assigned to the premises shall bear such number.

PAR. 39. *Approval of application.*—Applications, plats, and plans which do not contain all the information called for, or which are not executed in the manner required by these regulations, will be returned. If the application, plat, and plan are found to be in proper form, the district supervisor will make or cause to be made an inspection of the premises to determine whether the construction and equipment meet the requirements of these regulations and are correctly described and depicted in the application, plat, and plan. If the district supervisor finds that the applicant has complied in all respects with the requirements of the law and these regulations, including the furnishing of a proper bond as prescribed in paragraph 48, and if he further finds that the bond may properly be approved (see paragraph 42), he will enter the registry number assigned to the premises on each copy of the application and will indorse his approval on each copy of the application, bond, plat, and plan. The district supervisor will retain one copy of each document, forward one copy of each to the Commissioner with a copy of the inspection report, and return one copy of each to the proprietor to be kept at the winery or storeroom readily accessible to Government officers.

PAR. 40. *Disapproval of application.*—If the application is disapproved, the district supervisor will indorse his disapproval on each copy of the application, bond, plat, and plan and return two copies of each to the applicant with a statement of the reasons for disapproval. One copy of each document will be retained by the district supervisor.

PAR. 41. *Bond required.*—No person shall commence or continue the business of a winemaker until all bonds in respect thereof required by any provision of law have been approved by the district supervisor. No person may produce wine without filing bond and otherwise qualifying as a winemaker, except that a duly registered producer without so qualifying may, under the conditions prescribed in Article XVIII of these regulations, produce for his family use not in excess of 200 gallons of still wine per year free of tax.

ARTICLE XI—AUTHORITY TO DISAPPROVE BOND

PAR. 42. *Disapproval by supervisor.*—The district supervisor will, under section 67 of the Act of August 27, 1894, as amended, disapprove any bond or bonds submitted by any individual, firm, partnership, corporation, or association intending to commence or continue the business of a winemaker, if the individual, firm, partnership, corporation, or association giving the same or owning, controlling, or actively participating in the management of the businses of the individual or firm, partnership, corporation, or association giving the same, shall have been previously convicted, in a court of competent jursdiction, of—

(1) Any fraudulent noncompliance with any provision of any law of the United States if such provision related to internal revenue or customs taxation of distilled spirits, wines, or fermented malt liquors, or if such an offense shall have been compromised with the individual, firm, partnership, corporation, or association upon payment of penalties or otherwise; or

(2) Any felony under a law of any State, Territory, or the District of Columbia, or the United States, prohibiting the manufacture, sale, importation, or transportation of distilled spirits, wine, fermented malt liquor, or other intoxicating liquor.

PAR. 43. *Inquiry by supervisor.*—Before approving any bond given by any individual, firm, partnership, corporation, or association, intending to commence or continue in business as a winemaker, the district supervisor will cause such inquiry or investigation as may be deemed necessary to ascertain whether such individual, firm, partnership, corporation, or association, or any person owning, controlling, or actively participating in the management of the business, has been so convicted or has so compromised an offense of the nature indicated in paragraph 42.

PAR. 44. *Appeal to Commissioner.*—Where the bond is disapproved by the district supervisor, the person giving the bond may, under the law referred to, appeal from such disapproval to the Commissioner. When an appeal is so taken, the district supervisor will furnish the Commissioner full information respecting the disapproval, stating the nature of the offense, the names of the offenders, the date of conviction or of acceptance of compromise, and the reasons for his action. The disapproval of the Commissioner of any bond in respect to the commencement or continuance of the business of a winemaker shall be final.

ARTICLE XII—CHANGE OF BONDED PREMISES

PAR. 45. *Change of location.*—Upon change of location of the bonded premises, the proprietor will file application, Form 698, for the new premises. The application must be supported by a new bond on Form 700–A, Winemaker's Bond, or consent of surety on Form 1533, Consent of Surety to Change in Terms of Bond, extending the terms of the existing bond to cover the new premises. If upon inspection the construction of the new premises is found to be such that the wines to be stored or produced therein will be securely protected, the district supervisor may approve the notice and bond and permit the use of such premises for a temporary period. The proprietor must promptly file a plat and plan of the new premises conforming fully with the requirements herein prescribed in the case of the establishment of a bonded winery or storeroom.

PAR. 46. *Extension or curtailment of premises.*—Where it is desired to extend or curtail the premises to take in or cut off a room or building, a new application, Form 698, plat, and plan or supplemental plat and plan must be filed by the proprietor. When material changes are made in the winemaking, vermouth processing, or storage facilities, or fortifying room (including the brandy storage room), such as the removal or addition of tanks, or changes in the capacity of

tanks, report thereof shall be made by the proprietor in triplicate. One copy of the report shall be attached to the application, Form 698, retained at the premises and two copies forwarded to the district supervisor, who will transmit one copy to the Commissioner.

The Commissioner or district supervisor may at any time require the filing of a new application, plat, and plan. Applications on Form 698 must be serially numbered in the order of filing and must indicate the purpose for which filed.

ARTICLE XIII—CHANGE OF PERSONS INTERESTED IN BUSINESS

PAR. 47. *Change in proprietorship.*—Where there is any change in the proprietorship of the business, as shown by the last application, Form 698, the same steps must be taken as in case of new premises, except that the new proprietor may accept the plat and plan on file. In the case of a copartnership, the withdrawal of a partner or the taking in of a new partner, whether active or passive, shall constitute a change of proprietorship. Where the new proprietor accepts the plat and plan on file, such acceptance shall include a certification as to the accuracy of the plat and plan. The acceptance shall be executed in triplicate, one copy thereof attached to the plat and plan at the premises, and two copies forwarded with the application to the district supervisor, who will transmit one copy to the Commissioner.

ARTICLE XIV—BOND

PAR. 48. *Bond Form 700–A.*—Except as otherwise provided herein, proprietors of bonded wineries and bonded storerooms shall furnish a separate bond on Form 700–A, in triplicate, with surety or security to cover each winery or storeroom. No wine may be produced or received, and no brandy may be withdrawn for fortification until proper bond is filed and the notice and bond are approved by the district supervisor. Bonds on Form 700–A will be in a penal sum sufficient:

(1) To cover the amount of the tax on all wine to be produced, received, or stored at the bonded winery, received or stored at the bonded storeroom, and in transit from such premises to other bonded premises, at any one time;

(2) To cover the amount of the tax at the distilled spirits rate on all brandy to be withdrawn for use in the fortification of wine and in transit to, or stored at, the bonded winery at any one time; and

(3) To fully cover at all times prior to payment of the assessment the amount of the fortifying tax on all brandy so withdrawn and used in the fortification of wine:

Provided, That the penal sum of the bond shall not be less than $500 nor more than $50,000 for a single winery or storeroom; but where the aggregate amount of the outstanding (unpaid) assessments of the fortifying tax on brandy used in the fortification of wine exceeds the penal sum of the bond, the winemaker shall file an additional bond with surety or security in an amount sufficient to cover such excess. Should the winemaker neglect to file the requisite bond, the district supervisor will refuse to allow him to produce or receive wine or withdraw brandy for fortification until the charges against the outstanding bond are reduced sufficiently to permit such further operations. The filing of blanket bonds by winemakers is not permissible.

PAR. 49. *Collector's notice of payment of fortifying tax.*—The collector of internal revenue will advise the district supervisor when payment is made of assessments for brandy fortification tax in order that the district supervisor may have current information concerning outstanding liability against the winemaker's bond. The notice of tax payment will include information as to the list, page, and line on which the assessment appears.

PAR. 50. *Bonds on Forms 699 and 700.*—No person shall operate a bonded winery or bonded storeroom unless he shall have filed with the district supervisor, and the district supervisor shall have approved, a bond on Form 700–A; but a winemaker will not be required to file a bond on Form 700–A if satisfactory bond on Form 699, Bond of Winemaker or Dealer, or Form 700, Bond of Winemaker, Fortifying Bond of Winemaker, or Proprietor of Bonded Storeroom, with surety or security, in a sufficient penal sum, has already been filed and approved, and the terms of such bond have been extended by consent of surety, Form 1533.

PAR. 51. *Strengthening bond.*—In all cases where a winemaker gives a strengthening bond on Form 700–A, the surety or sureties thereon must be the same as the surety or sureties on the bond or bonds of that or any prior series of bonds of the winemaker already on file and in effect; otherwise, a new bond (Form 700–A) covering the entire liability will be required. The filing of new or additional bonds on Form 700 is discontinued.

PAR. 52. *Registry number inserted in bond.*—Before the bond is executed, the proprietor must ascertain from the district supervisor the registry number which will be assigned to the bonded premises if established, so that such number may be inserted in the bond. Bonds not completely and properly filled in and executed will be returned for correction. Proper record will be kept of bonds returned for correction, or for any other purpose. All disapproved bonds shall be returned to the principal and the surety or sureties notified of such disapproval.

PAR. 53. *New bond.*—A new bond may be required at any time, in the discretion of the district supervisor, or under instructions of the Commissioner. A new bond shall be required immediately in case of the death, removal from the State, or insolvency of a personal surety, or insolvency of a corporate surety. Executors, administrators, assignees, receivers, and trustees continuing the business must execute a new bond or obtain the consent of the surety or sureties on the existing bond or bonds.

PAR. 54. *Powers of attorney.*—Powers of attorney and other evidence of appointment of agents and officers executing bonds on behalf of surety companies are required to be filed with, and passed upon by, the Commissioner of Accounts and Deposits, Section of Surety Bonds, Treasury Department. Such powers and other evidence of appointment need not be filed with, or submitted to, the district supervisor.

PAR. 55. *Personal sureties.*—Personal sureties on bonds, of which there must be two, must qualify by executing affidavit on Form 33, Affidavit of Individual Surety on Bond, in triplicate. On approval by the district supervisor, a copy of Form 33 should be attached to each copy of the bond to which it relates. District supervisors should exercise great care in deciding as to the sufficiency of the security afforded by individual sureties and such sureties should not be accepted simply because they attempt to qualify by filing affidavit on Form 33. The principal object of affidavit, Form 33, is to obtain statements which the district supervisor must investigate in every case. Personal sureties must reside within the State in which the bonded winery or storeroom is located, and where real property is offered as security the same must be within the State. Supervisors will from time to time make such inquiries as are deemed necessary in regard to the sufficiency of the security afforded by personal sureties on bonds.

PAR. 56. *Deposit of collateral.*—District supervisors on receiving bonds or notes of the United States, or other obligations which are unconditionally guaranteed as to both interest and principal by the United States, pledged and deposited by principals as collateral security, in lieu of personal or corporate sureties, shall deposit such securities as required by Department Circular No. 154, revised.

PAR. 57. *Consents of surety.*—Consents of surety (Form 1533) to a change in the terms of a bond must be executed by the principal and all sureties with the same formality and proof of authority to execute as required for the execution of bonds, in as many copies as are required of the bond affected thereby. If the surety is a corporation, the consent

must be executed by the home office officials of such corporate surety; except that, in cases where the saving of time is an element, it may be executed by an agent or attorney in fact when the home office officials, by specific authorization, direct and order its execution. A copy of such authorization should be attached to each copy of such consent. The procedure governing the approval and disposition of the copies of bonds shall apply to the approval and disposition of consents of surety.

PAR. 58. *Two or more corporate sureties.*—A bond executed by two or more corporate sureties shall be the joint and several liability of the principal and the sureties: *Provided*, That each corporate surety may limit its liability, in terms, upon the face of the bond, in a definite specified amount, which amount shall not exceed the limitations prescribed for such corporate surety by the Secretary of the Treasury, as set forth in Form 356, Commissioner of Accounts and Deposits, Section of Surety Bonds.

PAR. 59. *Application of surety for relief from bond.*—A surety on any bond may at any time in writing notify the principal and the district supervisor in whose office the bond is on file that he desires after a date named, which shall be at least 60 days after the date of the notification, to be relieved of liability under said bond. Said notice shall be executed in triplicate by the surety, who shall deliver one copy to the principal and the other two to the district supervisor, who will retain one copy and transmit the remaining copy to the Commissioner. If such notice is not thereafter in writing withdrawn, the rights of the principal as supported by said bond shall be terminated on the date named in the notice and the surety shall be relieved under said bond for any acts done wholly subsequent to said date: *Provided*, That if the principal fails to execute a new and satisfactory bond, said bond shall remain effective until there shall have been proper accounting and tax payment for all wines and brandy as of the date when the surety is relieved, as named in such notice. This notice may not be given by an agent of the surety unless it is accompanied by a power of attorney duly executed by the surety authorizing him to give such notice or by a verified statement that such power of attorney is on file with the Department.

PAR. 60. *Name legibly written.*—The full name of each person signing applications, notices, bonds, powers of attorney, consents of surety, and other written instruments, or papers required of proprietors of bonded wineries or storerooms, shall be legibly written (preferably typed) in the heading or body of each such instrument or paper.

PAR. 61. *Firm or corporate name.*—In the case of a copartnership, the trade name of the firm, followed by the names of all the members thereof, shall be shown. In the case of a corporation, there shall be shown the corporate name, the name of the State under the laws of which it is incorporated, and the location of the principal office or place of business.

PAR. 62. *Execution of instrument.*—An individual proprietor of a bonded winery or storeroom executing such instruments shall sign his full name thereto, or an attorney-in-fact, duly empowered by him, may sign in his behalf. In the case of a copartnership, the firm name shall be typed or written, followed by the word "By" and the signatures of all partners or the signature of any partner or other person holding a power of attorney authorizing him to execute bonds or other instruments on behalf of the partnership. Where an instrument is signed by an attorney-in-fact, a copy of the power of attorney shall be attached thereto, except that no copy need be attached to instruments other than bonds or consents of surety in cases where the power of attorney has been filed in duplicate with the district supervisor. In the case of a corporation, the corporate name shall be typed or written, followed by the word "By" and the signature and title of each officer executing the document for the corporation, who must be duly authorized to act for the corporation. The instrument shall bear the impression of the corporate seal, and, if a bond or consent of surety, shall be supported by an authenticated copy of the document conferring authority upon each officer to execute the instrument. The signature of each person executing a bond or consent of surety shall be witnessed by two persons, who shall affix their signatures as such, except where execution of the instrument is acknowledged before an officer duly authorized to administer oaths, or, in the case of a corporate instrument, where the seal of the corporation is affixed and attested by its proper officer.

PAR. 63. *Superseding bond.*—Where a new bond, Form 700–A, in a sufficient penal sum computed as prescribed in paragraph 48, is filed to supersede a bond or bonds of the same or a prior series and there is no record of violations of law or regulations by the principal or outstanding liability against the bond, the district supervisor shall, after approval of the superseding bond, prepare Form 1490, "Notice of Bond Termination," in quadruplicate (in quintuplicate if there are two sureties), and forward the original to the Commissioner, one copy to each obligor on the bond, and retain one copy to be filed with the bond to which it relates. Where assessments have been made against the principal, the district supervisor will not issue Form 1490 until a statement has been obtained from the collector of internal revenue that such assessments have been paid.

PAR. 64. *Collateral as security on superseding bond.*—The bonds, notes, or other obligations of the United States deposited as collateral security with an outstanding bond of the proprietor of a bonded winery or storeroom, and with respect to which no violation has been charged, may be used to secure a new superseding bond on Form 700–A by appropriate description of such collateral in the new bond.

PAR. 65. *Release of bond.*—Upon receipt of an application for the release of a bond, Form 700–A, or of a bond of a prior series, the district supervisor will examine his records to ascertain whether there is any outstanding liability against the bond. If and when the district supervisor is satisfied that there is no outstanding liability against a bond the release of which has been applied for, he will prepare Form 1491, "Notification of Release of Bond," in quadruplicate (in quintuplicate if there are two sureties), and forward the original copy to the Commissioner, one copy to each obligor on the bond, and retain one copy to be filed with the bond to which it relates.

Where an offer in compromise of civil liability or an application for remission, or claim for abatement of taxes, has been sent to the Commissioner, and notice of final action has not been received, the district supervisor will not take any action toward the release of the bond until such notice has been received and a statement has been obtained from the collector of internal revenue that the tax involved and all outstanding assessments, if any, have been paid.

PAR. 66. *Release of collateral.*—The provisions of Treasury Department Circular No. 154, revised, and these regulations shall apply to bonds to be superseded or released where obligations of the United States have been deposited with the Government by proprietors of bonded wineries or storerooms as collateral security in lieu of surety or sureties, and to the disposition of such obligations so deposited.

ARTICLE XV—SWEETENING MATERIALS

PAR. 67. *Storage room.*—Where sugar or condensed grape must for use in the manufacture or treatment of wine is stored on the winery premises, a room for the storage of such materials must be provided, as required by paragraph 18. All sweetening agents received at the winery must be stored in such room.

PAR. 68. *Form 261.*—All sweetening agents received, used, and on hand at the winery must be reported by the winemaker on Form 261, Winemaker's Monthly Report of Materials for Fortification and Amelioration of Wines.

PAR. 69. *Grape must.*—Pure boiled or condensed grape must may, if desired, be stored in closed, locked containers properly marked and identified as "Condensed must tanks"

on the winery premises, outside the storage room for the sweetening agents. Such tanks will be regarded as a part of the storage room for sweetening agents, so far as the storage of condensed must is concerned.

ARTICLE XVI—PRODUCTION AND AMELIORATION OF WINE

Natural Wine

PAR. 70. *Production.*—Natural wine is produced by the normal alcoholic fermentation of the juice of sound, ripe grapes, without addition or abstraction, other than such as may occur in the usual cellar treatment of clarifying and aging, except that in the event the must or wine has natural deficiencies, it may be ameliorated with a solution of water and pure cane, beet, or dextrose sugar, containing, respectively, not less than 95 per cent of actual sugar, calculated on a dry basis, the quantities of water and sugar composing the solution being in the proportion necessary to correct natural deficiencies in the must or wine. If so ameliorated, the resulting product (1) must contain not less than 5 parts per thousand of acid before fermentation, (2) may not contain more than 13 per cent of alcohol after complete fermentation, and (3) may not be increased more than 35 per cent in volume.

PAR. 71. *Sweetening for fortification.*—Natural wine, ameliorated in accordance with paragraph 70, may, prior to fortification, be sweetened with cane sugar or beet sugar or pure condensed grape must. Natural wine, to which no sweetening agents have been added, may, prior to fortification, be sweetened with cane sugar or beet sugar or pure condensed grape must. The cane sugar or beet sugar or pure condensed grape must added shall not be in excess of 11 per cent of the weight of the wine.

Pure Sweet Wine

PAR. 72. *Production.*—Pure sweet wine is produced by the fermentation or partial fermentation of grape juice only, with the usual cellar treatment, and shall contain no other substance whatever, introduced before, at the time of, or after fermentation, except that the juice or wine, or both, may be ameliorated as follows:

(*a*) With pure boiled or condensed grape must or pure crystallized cane or beet sugar or pure dextrose sugar, containing, respectively, not less than 95 per cent of actual sugar, calculated on a dry basis, or water, or any or all of them, in quantities necessary to perfect the wine according to commercial standards, or for mechanical purposes;

(*b*) The cane or beet or pure dextrose sugar added shall not be in excess of 11 per cent of the weight of the wine;

(*c*) Water shall not be used in excess of 10 per cent of the weight of the juice or wine, or both, to which added, and the wine to which water is added shall not after fermentation have an alcoholic content of less than 5 per cent.

PAR. 73. *Water used at crusher.*—Water may be used at the crusher only when absolutely necessary for the proper operation of the mechanical devices used in crushing and conveying the material to the fermenting tanks, and only in such quantities as is necessary. Where the machinery becomes so clogged that it is evident a greater amount of water than the maximum quantity allowed will be necessary for flushing purposes, or the winemaker desires to flush the machinery without running the water into the sweet wine material, the pipes and conveyors leading to the fermenting tanks containing the sweet wine material will be disconnected or closed before flushing the crushing and conveying machinery. If the winemaker so desires, the water may be run into fermenting tanks for producing distilling material. In such cases where the water is not run into the juice (sweet wine material), it will not be included in the 10 per cent addition permitted by paragraph 72.

PAR. 74. *Water for ameliorating and mechanical purposes.*—Water may be used for ameliorating purposes at the time of crushing and immediately prior to fortification. But, except as prescribed in paragraph 73, the total quantity of water used for both mechanical and ameliorating purposes, either at the time of crushing or fortification, or both, shall not exceed 10 per cent of the weight of the juice or wine.

PAR. 75. *Fortification.*—Pure sweet wine, produced in accordance with paragraph 72, whether ameliorated or not, may be fortified as prescribed in Part Two of these regulations.

Fruit and Berry Wines

PAR. 76. *Production.*—Citrus-fruit wines, peach wines, cherry wines, berry wines, apricot wines, and apple wines will be produced by the normal alcoholic fermentation of the juice of sound ripe citrus fruit (except lemons and limes), peaches, cherries, berries, apricots, and apples, respectively, with or without the addition of dry cane, beet, or dextrose sugar (containing, respectively, not less than 95 per cent of actual sugar calculated on a dry basis), for the purpose of perfecting the product according to standards, but without the addition or abstraction of other substances, other than such as may occur in the usual cellar treatment of clarifying and aging, except that in the event the must or wine has natural deficiencies, it may be ameliorated with a solution of water and pure cane, beet, or dextrose sugar, containing, respectively, not less than 95 per cent of actual sugar, calculated on a dry basis, for the purpose of correcting natural deficiencies in the must or wine. If so ameliorated, the resulting product (1) must contain not less than 5 parts per thousand of acid before fermentation, (2) may not contain more than 13 per cent of alcohol after complete fermentation, and (3) may not be increased more than 35 per cent in volume.

PAR. 77. *Sweetening for fortification.*—Fruit and berry wine, ameliorated in accordance with paragraph 76, may, prior to fortification, be sweetened with cane sugar or beet sugar or pure condensed must of the fruit or berry used in manufacturing the wine. Fruit and berry wine which has not been ameliorated may, prior to fortification, be sweetened with cane sugar or beet sugar, or pure condensed must of the fruit or berry used in manufacturing the wine. The cane sugar or beet sugar or pure condensed must added shall not be in excess of 11 per cent of the weight of the wine.

SUPERVISION OF AMELIORATION BY GOVERNMENT OFFICERS WAIVED

PAR. 78. *Amelioration without Government supervision.*—Proprietors of bonded wineries are authorized to ameliorate wine without supervision by Government officers. However, when Government officers are present on the premises for other purposes or in performance of other duties, they shall observe the process of amelioration and see that it is done within the limitations prescribed by law. Wine may be ameliorated only by the producing winemaker. Fortified wine may be ameliorated only prior to fortification. In determining the alcoholic, saccharine, and acid content of the must or wine, and the quantity of sugar solution that may be used in the production of wine under section 610 of the Revenue Act of 1918, as amended, the winemaker will follow the instructions given in Part 3 and in the Appendix to these regulations.

PAR. 79. *Record of amelioration.*—The amelioration of juice (must) or wine prior to or during the process of fermentation will be shown on the winemaker's production report, Form 701. The amelioration or sweetening of wine, after the same has been taken into account on Form 702 as wine produced, will be shown in the proper detailed statement and in the summary of that account. Where wine produced for probable fortification is ameliorated, the winemaker will enter on the tank label, Form 546, Label for Eligible Wine Material, all information required by such label relative to amelioration and sweetening. (See Article L.)

OTHER REQUIREMENTS RELATIVE TO PRODUCTION

PAR. 80. *Form 546.*—Where grapes, citrus fruit (except lemons and limes), peaches, cherries, berries, apricots, or apples are crushed for probable fortification there will be attached to the fermenting tanks into which the material is run a label, Form 546, as provided in paragraph 242.

PAR. 81. *Wines from other materials.*—Where it is desired to produce wine other than natural wine, citrus-fruit wine, peach wine, cherry wine, berry wine, apricot wine, and apple wine, as defined in section 610 of the Revenue Act of 1918, as amended, or pure sweet wine as defined in section 43 of the Act of October 1, 1890, as amended, the winemaker will prepare a notice in triplicate showing the materials and methods to be used. One copy of such notice will be attached to the application, Form 698, retained at the premises and the other two copies forwarded to the district supervisor, who will transmit one copy to the Commissioner.

PAR. 82. *Wines under 6 per cent.*—Where wines are produced with an alcoholic content of less than 6 per cent by volume after complete fermentation, the per cent of alcohol contained in the wine and the reason for the low alcoholic content shall be noted by the winemaker on Form 701 at the time of production.

PAR. 83. *Brandy or wine and sweetening agents in effervescent wine.*—Winemakers producing champagne and other sparkling wines, or artificially carbonated wine, may, in connection with the finishing and treatment of such wines, add thereto a small quantity of grape sirup, rock candy, or other sweetening agents and a small quantity of brandy or wine. The brandy so used must be tax-paid. Winemakers may store not more than one barrel of such brandy on their winery premises for this purpose. Such tax-paid brandy and sweetening agents shall be kept either in the sweetening agents room, provided for in paragraph 18, or in a separate closet in the champagne department. If stored in the sweetening agents room, such tax-paid brandy and sweetening agents shall be kept separate from sweetening agents to be used for other purposes.

PAR. 84. *Report on Form 261.*—Every winemaker using tax-paid brandy and grape sirup, rock candy, or other sweetening agents in making a preparation for use in champagne or sparkling wine or artificially carbonated wine shall keep a monthly record thereof and of the preparation made therefrom, on Form 261. All the pertinent information indicated by the headings of the columns and lines of the form shall be reported. The quantities of tax-paid brandy and sweetening agents procured or used by winemakers in making such preparation will not be entered in the district supervisor's Form 290, Bonded Account as to Grape Brandy and Saccharine Entering into Bonded Wineries.

PAR. 85. *Record of wines baked.*—Where wine is baked on bonded premises the proprietor shall keep a record showing the (*a*) serial number of each tank; (*b*) date wine is placed in tank; (*c*) quantity and alcoholic content; (*d*) date baking commenced; (*e*) date baking completed; (*f*) method employed; (*g*) date removed from tank; and (*h*) quantity removed, and alcoholic content thereof. No allowance for losses due to the baking of wine wil be made unless shown by such record to have been sustained. The record shall be kept complete and up to date, and preserved for a period of three years available for inspection by Government officers.

ARTICLE XVII—MANUFACTURE OF VERMOUTH

PAR. 86. *Separate department.*—Vermouth may be manufactured only in a separate department of the winery premises, provided as prescribed in paragraph 15. No wine other than fortified sweet wine may be used in the manufacture of vermouth on bonded winery premises. No distilled spirits may be added to the fortified sweet wine used in the manufacture of vermouth on such premises or to the vermouth during or after its manufacture. No alcoholic extract excepting such as may be made by macerating herbs and other non-alcoholic flavoring material with fortified sweet wine in the vermouth department may be used in the manufacture of vermouth in such department.

PAR. 87. *Formulae and processes.*—Every winemaker desiring to manufacture vermouth on his winery premises shall file with the district supervisor a statement in detail of each process by which he intends to manufacture the product, including the formulae. The formulae must show all the ingredients to be used, but the quantity or percentage of each ingredient used need not be given. It will not be necessary to submit a new formula where the quantity or percentage of any ingredient is varied. Where the ingredients composing a formula are changed, however, a new formula must be submitted. Each formula will show the percentage of absolute alcohol by volume in the finished product according to the taxable grade, as not more than 14 per cent, more than 14 per cent and not exceeding 21 per cent, more than 21 per cent and not exceeding 24 per cent. Formulae will be numbered serially and prepared in triplicate. The winemaker will retain one copy of each statement of process and formula accessible for inspection by Government officers and forward two copies to the district supervisor. The district supervisor will retain one copy and forward the other to the Commissioner. No winemaker may manufacture any vermouth not covered by a formula filed by him with the district supervisor.

ARTICLE XVIII—WINES FOR FAMILY USE

PAR. 88. *Registered producer.*—A duly registered producer may produce not in excess of 200 gallons of still wine per year for the use of his own family without payment of tax. Wine thus produced must not be sold or otherwise removed from the place of manufacture.

PAR. 89. *Limitations of exemption.*—The statutory exemption does not apply to (*a*) wine made by one person for the use of another, whether consumed on the premises or removed therefrom for the family use of the owner; (*b*) wine produced by a single person, unless he is the head of a family; (*c*) wine produced by a married man living apart from his family; (*d*) wine made by a partnership or produced at a winery operated by two or more heads of families jointly; or (*e*) wine furnished to persons not members of the producer's family.

PAR. 90. *Form 1541.*—Every person (other than the operator of a bonded winery) entitled to, and desiring to, produce still wine for the exclusive use of his family must prepare Form 1541, Registration for Production of Wine for the Family Use of the Producer thereof not in excess of 200 Gallons and not for Sale or to be otherwise Removed or Consumed, in duplicate, file one copy with the district supervisor and retain the other. The form must be filed at least five days before commencing operations, and must be renewed each succeeding year during which it is desired to produce wine for family use.

ARTICLE XIX—PRODUCTION OF WINE FOR DISTILLING MATERIAL

PAR. 91. *Form 546–B.*—Where wines are produced expressly for distilling material, label, Form 546–B, Distilling Material, will be attached to the fermenting tank. If the wine is transferred to a storage tank before removal from the winery, the label shall be removed from the fermenter and attached to such tank.

PAR. 92. *Addition of water to wine for distilling material.*—Water may be added to wine on the winery premises in a distilling material measuring tank in such quantity as may be necessary to facilitate distillation. Any properly calibrated tank on the winery premises may be used as a distilling material measuring tank. At the time water is added to wine preparatory to removal for use as distilling material, the quantity of water added must be entered in appropriate column in Form 702, and a label, Form 546–B, showing the quantity of water added must be attached to the containers of such wine. A copy of the label must be attached to Form 702. When distilling material is removed, the winemaker will enter in the appropriate statement on Form 702, as removed, the quantity of wine transferred to the fruit distillery.

PAR. 93. *Limitations.*—In the manufacture of wine for use as distilling material, water may be used in such quantity as necessary for the purposes of facilitating fermentation and economical distillation. Such wine may be made by fermentation of the grape juice, citrus-fruit juice, peach juice,

cherry juice, berry juice, apricot juice, or apple juice, or by further fermentation of the pomace or cheese after the wine has been drawn off. Spirits distilled from grape cheese to which sugar solution has been added may not be used for fortification. Wine produced for use as distilling material will be accounted for on Form 701 in the manner indicated therein. (See Article XXVI.)

PAR. 94. *Sweetened grape cheese.*—Where it is desired to sweeten grape cheese to be fermented on winery premises for use as distilling material, there may, as provided by section 3255 of the Revised Statutes, as amended, be added to not less than 500 gallons (10 barrels) of grape cheese not more than 500 gallons of a sugar solution made from cane, beet, starch, or corn sugar, 95 per cent pure, such solution to have a saccharine strength of not to exceed 10 per cent. If it is desired to add water as well as a sugar solution to the grape cheese, the sugar solution must be added first, as the statute fixes a limit on the sugar solution in accordance with the quantity of cheese, and not the quantity of cheese and water. The grape cheese may be sweetened once only.

ARTICLE XX—WINE TO BE DEPOSITED WITHIN BONDED PREMISES

PAR. 95. *Storage.*—Upon removal from the fermenters wine must immediately be conveyed into storage containers within the winery, or fortifying tanks in the fortifying room. When the manufacture of vermouth is completed, it must be transferred from the processing tanks to storage or shipping containers. Wine received in bond from other bonded premises must be deposited immediately in the winery or bonded storeroom. The storage of wine in outbuildings or containers outside the bonded premises will not be permitted.

PAR. 96. *Forms 701, 702–A, and 702–B.*—When the first period of fermentation is complete, still wine must be drawn from the fermenters and entry made thereof in monthly record, Form 701, as produced. Fermenters, as such, may not be used for the storage of wine. Champagne or other sparkling wines or artificially carbonated wines shall be entered on Form 702–A, Report of Champagne and other Sparkling Wines and Artificially Carbonated Wines, as produced, when the bottles are filled. If sparkling wine is made by a bulk process, entry must be made in Form 702–A when the wine is deposited in the tank for secondary fermentation. When the manufacture of vermouth is completed, it must be drawn from processing tanks and entry made thereof in Form 702–B, Winemaker's Vermouth Report. Finished vermouth may not remain in processing tanks.

ARTICLE XXI—FILTERING, CLARIFYING, AND PURIFYING OF WINES

PAR. 97. *Processes not rectification.*—The filtering, clarifying, or purifying of wine on bonded winery or storeroom premises is not rectification within the meaning of paragraph "Third" of section 3244 of the Revised Statutes.

PAR. 98. *Limitations.*—In the process of filtering, clarifying, or purifying wines on bonded winery or storeroom premises, materials, methods, and equipment may be used to remove cloudiness, precipitation, and undesirable odors and flavors, but the addition of any substance foreign to wine which remains a part thereof, or the abstraction of ingredients to an extent or in a manner which will affect the basic composition of the wine by eliminating the characteristic elements or which will change its type, is not within the statute, and is not permitted on bonded winery or storeroom premises. However, if any color develops in the manufacture of white wines, it may be removed by suitable cellar treatment.

PAR. 99. *Spurious, imitation, or compound wine.*—The mixing of any materials with wine which will result in the production of a compound, imitation, or spurious wine will constitute rectification and may not, therefore, be done on bonded winery or storeroom premises.

ARTICLE XXII—BLENDING OF WINES

PAR. 100. *Limitations.*—Wines may be mixed or blended with each other at a bonded winery or bonded storeroom only, and for the sole purpose of perfecting such wines according to commercial standards. Natural wine and pure sweet wine may not be mixed or blended with citrus-fruit wine, peach wine, cherry wine, berry wine, apricot wine, or apple wine, or with wine produced from other materials, nor may wine produced from one kind of fruit or berry be mixed or blended with wine produced from another kind of fruit or berry. Vermouths may be mixed or blended with each other for the sole purpose of perfecting them according to commercial standards, but may not be mixed or blended together with any other wines. Blended wines will be tax-paid according to their alcoholic strength after blending, but the blending must be done in fact for the purpose of manufacturing a finished product conforming to commercial standards. Wine purchased by one winemaker from another may be used for blending purposes without incurring special tax for the sale of such blended wine.

PAR. 101. *Report in Form 702 or 702–B.*—Where wines of different alcoholic strength are blended and the rate of taxability is thereby changed, report of such blending will be made in monthly report, Form 702 or 702–B, as the case may be, showing the exact percentages of alcohol contained in the wines both before and after blending. Where the rate of taxability is not changed, no report of the blending operation need be made.

ARTICLE XXIII—REMOVAL OF WINE

PAR. 102. *Containers and markings.*—Removal of wines may be made in casks, barrels, kegs, tanks, tank trucks, and railroad tank cars, or (when bottled) in cases of any desired size. If shipment is made in a railroad tank car and the premises of the consignor have no siding facilities, each tank truck transporting wine from the winery to the railroad tank car must have affixed thereto a label or tag stating the name of the consignor, the quantity of wine in the tank truck, the serial number of the railroad tank car to which the wine is being transported, and the name and address of the consignee. If shipment is made in a tank car and the premises of the consignee are not equipped with siding facilities, he shall mark each package filled from such car, or affix thereto a tag, stating the name of the consignor, the serial number of the car from which removed, and the name and address of the consignee. All casks, barrels, kegs, tanks, or cases in which wines are removed from bonded premises must be numbered in serial order commencing with No. 1 at each winery or storeroom. The proprietor of a bonded winery or storeroom may, if he desires, change the series after using the numbers up to 100,000 by beginning again with No. 1 and prefixing the numbers of the new series with the letter "A." He may continue to change the series after reaching 100,000 by prefixing each new series with the succeeding letters of the alphabet, "B," "C," "D," etc. The head of each package (including tanks) and the side of each case must be marked in a plain and durable manner with the serial number, the name of the proprietor of the winery or storeroom, the registered number of the premises, the location thereof (by city or town and State or supervisory district and State), the kind of wine, alcoholic strength of the wine, and the contents of the package or case in wine gallons. These marks must be cut, imprinted, or stenciled upon the package or case in legible letters and figures of appropriate size, or placed on a label or tag securely affixed to the package or case. If a label or tag is used, it must be of good quality white paper or other suitable material and of appropriate size, and the letters and figures heren must be durable and legible. The label or tag must be affixed with a good adhesive and, in the case of wooden packages, with not less than five tacks. After being so affixed, a coating of transparent shellac shall be applied over the label or tag. The head of the package or side of

the case bearing the prescribed marks shall be known as the "Government head" and "Government side," respectively.

PAR. 103. *Serial numbers.*—Packages and cases will be numbered in sequence on removal, except where packages or cases are filled for shipment in advance of orders, they may be numbered at the time of filling and need not necessarily be removed in serial order. When tank cars are shipped, the railroad car number will also be reported on Form 702. Where wines are transferred in bond from one bonded premises to another, the packages must, upon removal from the last premises, be re-marked with the serial numbers and other marks of such premises but may retain the marks of the premises from which received: *Provided*, That where wine stored at a bonded field warehouse is released to the depositing winemaker for immediate removal, the proprietor of the bonded field warehouse may place thereon the serial numbers and the marks and brands of the winery.

PAR. 104. *Labels.*—When wines are bottled, the bottler shall securely affix to each bottle a label showing (1) the name and address of the premises, or the name, registry number, and State where the premises are located; (2) the kind of wine; (3) the alcoholic content by volume, except that if not over 14 per cent, it may be so stated; and (4) the net contents of the bottle, unless legibly blown in the bottle.

PAR. 105. *Contents of packages.*—Winemakers will be held strictly responsible for the correct determination of the quantity and alcoholic content of wine removed at the time of removal. They must not assume that a package contains a certain quantity or that the wine is of a certain taxable grade. As required by paragraph 26, appropriate and accurate measures and instruments for measuring and testing the wine must be provided at each winery or storeroom. The Salleron-Dujardin or Juerst ebullioscope or one of the other ebullioscopes named in paragraph 31 may be used for determining the per cent of alcohol contained in the wine. If an approved ebullioscope is not provided, other appropriate and accurate instruments approved by the Commissioner must be provided in lieu thereof.

PAR. 106. *Family use.*—Where the head of a family operates a bonded winery, still wine of his own production not exceeding 200 gallons per year may be removed free of tax for the use of his family, the year to be reckoned as commencing on July 1. The winemaker must make proper entries of the quantities so removed in his monthly report, Form 702, as required by paragraph 107. Wine in excess of the 200-gallon allowance removed from the winery for family use must be tax-paid upon removal.

PAR. 107. *Report of removals.*—When wine is removed from the winery or storeroom, appropriate entry must be made on Form 702, 702–A, or 702–B, as the case may be. The proprietor of each winery or storeroom shall keep a separate record showing the date of each tax-paid removal, the quantity, kind, and alcoholic content of the wine removed, the serial numbers of the packages or cases, and the name and address of the consignee. The separate record of tax-paid removals may consist of commercial papers kept on the premises available for inspection and in such a manner that the required information may be readily ascertained therefrom. Entry of wine tax-paid and removal must be made in the separate record kept at the winery, or the commercial papers made available as required, before removals are made. Entry of the total removals each day must be made in Form 702, 702–A, or 702–B before the close of business on the following business day. Records of wine received on bonded winery premises must be made on Form 702 or 702–B before the close of the business day.

ARTICLE XXIV—TAX-PAYMENT OF WINES

PAR. 108. *Tax-payment by stamp.*—Whenever the proprietor proposes to tax-pay and remove wine, he shall, prior to such removal, securely affix to each cask, barrel, or other immediate container except bottles of a capacity of one gallon or less, or to each case or other shipping container (except railroad tank cars), stamps denoting payment of the internal revenue tax thereon. The stamps shall be affixed to the Government head of each package or side of each case. When removal is made in a tank truck, the stamps shall be affixed to a suitable board fastened to the truck in a permanent manner. The stamps must be affixed with a good adhesive. In the case of wooden containers, tacks or staples shall be used in addition to the adhesive. The proprietor shall cancel the stamps by indelibly writing or stamping thereon or perforating his name or initials and the date of cancellation. After cancellation a coating of transparent varnish or shellac must be applied over the stamps. The number of bottles and the size of each bottle in a case of champagne, sparkling wine, or artificial carbonated wine, must be stenciled or marked on the case.

PAR. 109. *Tax-payment in tank cars.*—Where tax-paid wine is shipped in railroad tank cars, the proprietor shall attach to a copy of the bill of lading wine stamps of a value equal to the tax on the wine so shipped, shall cancel the stamps in the manner prescribed in paragraph 108, and shall send the copy of the bill of lading to which the canceled wine stamps are affixed to the supervisor of the district in which the wine is tax-paid. The bill of lading must show the number of the railroad tank car, the contents in wine gallons, the kind of wine, and the alcoholic strength of the wine.

PAR. 110. *Tax-payment label on tank car or tank truck.*—There must be securely affixed to each railroad tank car or tank truck of tax-paid wine a label showing the name, registry number, and location (city or town and State) of the bonded premises from which shipped, the contents in wine gallons, the kind of wine, the alcoholic strength thereof, and the date of tax-payment. The label will be in substantially the following form:

Shipped by
CALIFORNIA WINE CO.
B. W. No. 54, St. Helena, Calif., 14th Dist.
8,931.5 gals. Sherry Wine 20% alc.
Tax paid August 10, 1927

The label must be affixed to some place on the tank car or tank truck where it may readily be examined by Government officers, and must be destroyed when the tank car is emptied.

PAR. 111. *Stamps equal to tax.*—Proprietors will be held strictly responsible for the attachment, or surrender to the district supervisor, of wine stamps in a value equal to the tax on the wine contained in each package or case removed. The tax must be computed according to the alcoholic content of the wine at the time of removal and at the rates provided by law.

PAR. 112. *Tax on still wines.*—The following are the rates of tax on still wines, artificial or imitation wines or compounds sold as still wines, and vermouth produced in a bonded winery, the per cent of alcohol to be reckoned by volume:

(*a*) 5 cents per wine gallon when containing not more than 14 percent of absolute alcohol;

(*b*) 10 cents per wine gallon when containing more than 14 per cent and not exceeding 21 per cent of absolute alcohol;

(*c*) 20 cents per wine gallon when containing more than 21 per cent and not exceeding 24 per cent of absolute alcohol;

(*d*) When containing more than 24 per cent of absolute alcohol, classed as distilled spirits and taxed accordingly.

PAR. 113. *Tax on sparkling wine.*—The following are the rates of tax on champagne or sparkling wine and artificially carbonated wine:

(*a*) On each bottle or other container of champagne or sparkling wine, 2½ cents on each one-half pint or fraction thereof;

(*b*) On each bottle or other container of artificially carbonated wine, 1¼ cents on each one pint or fraction thereof;

(*c*) Any of the foregoing articles containing more than 24 per cent of absolute alcohol by volume shall be classed as distilled spirits and shall be taxed accordingly.

PAR. 114. *Computing tax on champagne.*—The tax on champagne, sparkling wine, and artificially carbonated wine must be computed on each bottle, and not on the aggregate contents of the case. Thus, the tax on a one-fifth gallon bottle of sparkling wine amounts to 10 cents, and on a case of 12 such bottles the tax amounts to $1.20.

ARTICLE XXV—SHIPMENT OF STILL WINES IN BOND TO OTHER BONDED PREMISES

PAR. 115. *Removals free of tax.*—Still wines and vermouth may be removed for transfer in bond free of tax from a bonded winery or bonded storeroom to another bonded winery or bonded storeroom, as provided in these regulations. Such wines and vermouth may be so transferred not more than twice.

PAR. 116. *Shipments in bond.*—Where still wines or vermouth are shipped in bond to other bonded premises the bill of lading covering the shipment must show the proprietor of the premises from which such wine or vermouth is shipped as the consignor, and the proprietor of the premises to which the wine or vermouth is shipped as the consignee; the serial numbers of the packages; the quantity of wine or vermouth and its alcoholic content. Each package or case so shipped must bear the following data, either stenciled thereon in whole or in part, or by label, in whole or in part, securely attached with a good adhesive: that the wine is shipped in bond, the date of shipment, the name, registry number, and location (city or town and State) of the premises from which shipped and the premises to which shipped. This information shall be in addition to the markings prescribed in paragraph 102. Where the wine or vermouth is shipped in tanks, tank trucks, or railroad tank cars, the label must be securely attached with a good adhesive to some place on the tank, tank truck, or railroad tank car where it may readily be examined by Government officers. Where such label is attached to a wooden surface, tacks must be used in addition to the adhesive. The label will be in substantially the following form:

Shipped in bond by
CALIFORNIA WINE CO.
B. W. No. 54, St. Helena, Calif., 14th Dist.
to
NEW YORK WINE CO.
B. W. No. 72, New York, N. Y., 2nd Dist.
Shipped ————
(Date)

PAR. 117. *Form 703.*—At the time of making shipment, the proprietor will make out one pink and one blue Form 703, Shipment of Bonded Wines, giving all the information called for on the form, and will forward both copies to the district supervisor of his district.

PAR. 118. *Shipments in same district.*—If the wines or vermouth are shipped to premises within the same district, the district supervisor will retain both copies of Form 703 until the monthly reports, Form 702 or Form 702–B, of the consignor and consignee are received, when they will be checked with both Forms 702 or 702–B and any loss in transit noted thereon. The date of checking and the initials of the checker will also be entered on each copy of Form 703 in the proper spaces. The district supervisor will then file both copies of Form 703.

PAR. 119. *Shipments to other districts.*—If the wines or vermouth are shipped to another district, the district supervisor will immediately forward the blue Form 703 to the district supervisor of the district to which the wines or vermouth are shipped. The district supervisor of the district to which the wines or vermouth are shipped will check the blue Form 703 with the monthly report on Form 702 or Form 702–B of the proprietor to whom the wine or vermouth is shipped, and will note thereon any loss in transit. The date of checking and the initials of the checker will also be entered on Form 703 in the proper space. The district supervisor will then return the form to the district supervisor of the district from which the wines or vermouth were shipped. When the form is received by the district supervisor of the shipping district, it will be checked with the consignor's report, Form 702 or 702–B, and the date of checking and initials of the checker will be entered on the Form 703.

PAR. 120. *Wines measured when received.*—When received at the premises to which they are shipped, the proprietor of such premises will measure the wine or vermouth and enter on his monthly report, Form 702 or 702–B, the quantity actually received.

PAR. 121. *Losses in transit.*—If there has been a loss in transit from any package or other container in excess of 1 per cent, or 2 per cent in the case of transcontinental shipments, of the quantity shipped in such container, the proprietor of the receiving premises will attach to his monthly report, Form 702 or 702–B, a statement in affidavit form setting out all the material facts relating to the entire loss, and stating particularly the nature and cause thereof, i. e., whether by leakage, evaporation, casualty, theft, etc., and the extent of the loss. If there has been a loss from more than one package, the quantity lost from each package, the cause thereof, and the condition of the package must be given. The statement must also set forth whether the proprietor has been reimbursed or is indemnified for the tax on the wine or vermouth. If statements relative to the loss can be procured from the carrier, copies thereof will also be attached to Form 702 or 702–B, as the case may be. The proprietor shall immediately forward copies of these statements to the proprietor of the winery or storeroom from which the wines or vermouth were shipped.

PAR. 122. *Losses less than 1 per cent.*—If the loss is less than 1 per cent, or 2 per cent in the case of transcontinental shipments, of the quantity shipped in any package or other container, notation of such loss will be made by the proprietor of the receiving premises on his monthly report, Form 702 or 702–B, but no detailed statement of the loss need be made unless so required by the district supervisor or Commissioner.

PAR. 123. *Shipper liable for tax.*—The proprietor of the premises from which the still wine or vermouth is shipped in bond will remain liable for the tax thereon until received at the premises to which shipped. Application for remission of tax on losses in transit will be filed by the consignor in accordance with Article XXXIV.

PAR. 124. *Transfers to and from bonded field warehouse.*—Where wines are transferred to and from a bonded field warehouse and the winery contiguous or adjacent thereto, it shall not be necessary to make report on Form 703. When wines are so transferred the proprietor of each premises shall immediately enter the transaction in his monthly record, Form 702 or 702–B.

ARTICLE XXVI—REMOVAL OF STILL WINE AS DISTILLING MATERIAL

PAR. 125. *Wine removed free of tax.*—Still wine may be removed in bond free of tax to a fruit distillery or an industrial alcohol plant for use as distilling material in the manufacture of brandy and alcohol.

PAR. 126. *Pipe line to fruit distillery.*—Where a bonded winery and a fruit distillery are operated on contiguous premises by the same person, still wine for use as distilling material may be transferred from tanks in the winery to measuring tanks in the distillery, or, where the distillery measuring tanks are authorized to be installed on the winery premises, from such measuring tanks directly to the chargers of the stills, by fixed pipe line. The pipe line must traverse only bonded premises and be equipped with a valve which may be locked with a Government lock. The valve will be locked whenever operations at the distillery or winery are suspended.

PAR. 127. *Pipe line to industrial alcohol plant.*—Where a bonded winery and an industrial alcohol plant are operated on contiguous premises by the same person, still wine for use as distilling material may be transferred from tanks in the winery to storage tanks in the alcohol plant, by means

of a securely connected pipe line of a fixed and permanent character. The tanks in the winery must be suitably equipped for determining the quantity of wine so transferred, and the pipe line outlet of each such tank must be equipped with a valve so constructed that it may be locked at all times, except when necessary to be open for the transfer of wine. The keys will be in the custody of the Government officer assigned to the alcohol plant, and the wine will be transferred under his supervision.

PAR. 128. *Report on Form 702.*—All wine removed from a bonded winery or bonded storeroom for shipment or transfer to a fruit distillery or industrial alcohol plant must be reported by the proprietor on monthly record, Form 702. When wines are removed as distilling material, the exact alcoholic content of the wine, as 18 per cent, 20 per cent, etc., must be entered on Form 702.

PAR. 129. *Substandard wines produced for distilling material.*—Substandard wines produced with excessive water or residue material expressly for use as distilling material shall be reported on Form 701.

PAR. 130. *Marking of packages.*—When shipped each package must be plainly marked "For distilling material," in addition to bearing the marks and brands required by paragraph 102. The winemaker will remain liable for the tax on the wine until it is received at the distillery premises.

PAR. 131. *Wines measured when received.*—Upon receipt of the wine at the fruit distillery or industrial alcohol plant, it must be measured and entered on Form 15, Monthly Return of Fruit Distiller, or Form 1442, Proprietor's Report of Operations at Industrial Alcohol Plant, as the case may be, with the name of the proprietor, the registry number, and the location of the bonded premises from which it is received. In the case of fortified wines the exact alcoholic content of the wine must also be given.

ARTICLE XXVII—EXPORTATION OF WINES FREE OF TAX

PAR. 132. *Removal free of tax.*—Wines may be removed from bonded wineries or bonded storerooms free of tax for export in accordance with the provisions of this article.

PAR. 133. *Bond Form 186.*—Every person intending to withdraw wines from bonded wineries or storerooms, free of tax for exportation, must file with the district supervisor of the district in which the bonded premises are located a bond on Form 186, Bond for the Exportation of Wines Free of Tax under United States Internal Revenue Laws, in a penal sum equal to the tax on the quantity of wine to be withdrawn, as specified in the entry, Form 711, Withdrawal and Export Entry, and in no case less than $500. The rules relating to bond Form 700–A, as set out in Article XIV, shall, as far as applicable, relate to bond Form 186.

PAR. 134. *Approval of bond.*—The bond shall be approved by the district supervisor if the exporter has in all respects complied with the law and regulations. Withdrawals may be made from time to time under the bond as long as it remains good and sufficient, or until it shall have been released or terminated by the order of the Commissioner or district supervisor.

PAR. 135. *Account with bond.*—The district supervisor will keep an account with the bond, in which account the principal will be charged with the tax on each lot of wine removed for exportation and will receive credit for the tax on each lot concerning which satisfactory proof of exportation is received. Wine shipped for export will be carried as unaccounted for until proof satisfactory to the district supervisor is received showing the exportation of the wine, and the tax has been paid on any wine lost in transit. No provision has been made in the law for allowance of tax on wines lost in transit for export.

Exportation by Vessel or Aircraft

PAR. 136. *Form 711.*—After having given the required bond, the exporter will execute and file with the district supervisor an entry on Form 711 in quadruplicate. Parts 1 and 2 of each copy will be fully executed. If the exporter has complied in all respects with the law and regulations, the district supervisor will note his approval on each copy of the entry, retain one copy, and return three copies to the exporter. Upon receipt of the approved copies of the entry, the exporter may withdraw the wines therein described for export free of tax.

PAR. 137. *Consigned to collector of customs.*—The packages or cases containing such wines must be plainly marked "For export" in letters not less than five-eighths of an inch in height, in addition to bearing the marks and brands required by paragraph 102. The wine must be consigned to the collector of customs at the port of export for examination, inspection, supervision of lading, and report, as provided in paragraph 138. Upon shipment from the winery or bonded storeroom, the exporter will forward two copies of the entry to the collector of customs at the port of export. The other copy of the entry will be retained by the exporter.

PAR. 138. *Inspection by customs.*—Upon arrival of the wine at the port of export the collector of customs will direct the proper officer to examine and inspect the wines and ascertain whether the same agree in all respects with the description thereof in the entry, and to superintend their lading for exportation. Such officer will note on both copies of the entry any shortage and the apparent cause thereof. When the wine is exported the collector of customs will certify to the clearance of the wine on part 3 of each copy of the entry, forward one copy to the district supervisor who approved it, and retain the remaining copy.

PAR. 139. *Bill of lading.*—The bill of lading covering shipment of the wine must show the exporter as the shipper, the serial numbers of the packages and the quantity of wine. Upon clearance, the exporter will forward a copy of the bill of lading to the district supervisor. Upon receipt of the copy of the bill of lading and copy of the entry, bearing the certificate of clearance of the collector of customs, and after tax has been paid on any wine lost in transit, the district supervisor will make proper entries in Form 733, Bonded Account as to Still Wines Entering into Bonded Wineries and Bonded Storerooms, Form 733–A, Bonded Account as to Champagne and other Sparkling Wines and Artificially Carbonated Wines, or Form 733, Vermouth Account, as the case may be, and credit the account kept with the export bond, Form 186.

Exportation by Railroad Car, Motor Truck, or Other Conveyance

PAR. 140. *Exportation through frontier port.*—Where the wines are to be shipped by railroad car, motor truck, or other conveyance, through a customs port, the collector of customs at such port, on receipt of two copies of the entry from the exporter, will direct that the wines be examined, inspected, and report made as provided in paragraph 138. If the inspector finds that the wines have not been tampered with, the collector of customs will allow the railroad car, motor truck, or other conveyance, to proceed to its destination, and will so certify on each copy of the entry, forward one copy to the district supervisor who approved it, and retain the remaining copy.

PAR. 141. *Regulations extended.*—The provisions of these regulations dealing with bills of lading, the making of entries in bonded accounts, and the crediting of accounts kept with export bonds in connection with exportation by vessel or aircraft shall, so far as applicable, extend and apply to exportation by railroad car, motor truck, or other conveyance.

PAR. 142. *Wines tampered with.*—If the inspecting customs officer has reason to believe that the wines have been tampered with, the collector of customs will take the wines into his custody and report the facts forthwith to the district supervisor within whose district the port of export is located, for such action as he may deem necessary.

PAR. 143. *Shipments to American possessions.*—The provisions of these regulations, and the forms prescribed, in respect to the removal of wines, free of tax for exportation to foreign countries, apply to like removals and shipments to

the Philippine Islands, Puerto Rico, the Virgin Islands, and the Panama Canal Zone. Hawaii and Alaska are Territories of the United States, and all shipments of domestic wines thereto must be tax-paid before withdrawal from bonded wineries or other bonded premises, unless transferred in bond to a bonded winery or storeroom located in one of those Territories.

ARTICLE XXVIII—TRANSFER OF WINES TO BONDED MANUFACTURING WAREHOUSES, FREE OF TAX

PAR. 144. *Removals free of tax.*—Wines may be withdrawn from bonded wineries or bonded storerooms without payment of tax and transported to bonded manufacturing warehouses, class 6, to be rectified and exported, or shipped to Puerto Rico.

PAR. 145. *Bond, Form 1580.*—The proprietor of a bonded manufacturing warehouse, class 6, desiring to remove wine to such warehouse from a bonded winery or bonded storeroom, free of tax, for rectification and exportation, or shipment to Puerto Rico, will file with the district supervisor of the district in which the winery or bonded storeroom is located, a bond on Form 1580, Bond for Transfer of Wine to Customs Bonded Manufacturing Warehouse, Class 6, executed in triplicate, in a penal sum equal to the amount of the tax on the quantity of wine to be withdrawn, as specified in the entry, Form 711–A, and in no case less than $500. The rules relating to bond Form 700–A, as set out in Article XIV, shall, so far as applicable, relate to bond Form 1580.

PAR. 146. *Approval of bond.*—Bond Form 1580, so filed, shall be approved by the district supervisor if the proprietor of the bonded manufacturing warehouse has in all respects complied with the law and regulations. Withdrawals may be made from time to time under the bond as long as it remains good and sufficient, or until it shall have been released or terminated by the order of the Commissioner or supervisor.

PAR. 147. *Account with bond.*—The district supervisor will keep an account with the bond, in which account the principal will be charged with the tax on each lot of wine removed for transportation to a bonded manufacturing warehouse, class 6, and will receive credit for the tax on each lot concerning which satisfactory proof of deposit in such warehouse is received. Wine removed for transportation to a bonded manufacturing warehouse will be carried as unaccounted for until proof satisfactory to the district supervisor is received showing the deposit of the wine in such warehouse, and the tax has been paid on any wine lost in transit. No allowance of tax will be made on account of any wines lost in transit to a bonded manufacturing warehouse, class 6.

PAR. 148. *Form 711–A.*—After having given the required bond, the proprietor of the bonded manufacturing warehouse, class 6, will execute and file with the district supervisor six copies of entry, Form 711–A. Parts 1 and 2 of each copy will be fully executed. If the applicant has complied in all respects with the law and regulations, the district supervisor will note his approval on each copy of the entry, retain one copy, return four copies to the applicant, and will forward one copy to the proprietor of the bonded winery or bonded storeroom, as his authority to ship without payment of tax the wine described therein to the bonded manufacturing warehouse. Upon receipt of the approved copies of the entry, the proprietor of the bonded manufacturing warehouse, class 6, may withdraw the wines therein described for transportation to such warehouse without payment of tax.

PAR. 149. *Consignment care collector of customs.*—The packages containing such wines must be plainly marked "For deposit in bonded manufacturing warehouse, class 6," in letters not less than five-eighths of an inch in height, in addition to bearing the marks and brands required by paragraph 102. These marks may be abbreviated, as "For Dep. B. M. W. Cl. 6." The wine must be consigned to the bonded manufacturing warehouse, class 6, in care of the collector of customs of the district in which the warehouse is located. Upon shipment of the wine from the winery, or bonded storeroom, the proprietor of the bonded manufacturing warehouse, class 6, will forward four copies of the entry, Form 711–A, to the collector of customs of the district in which the bonded manufacturing warehouse, class 6, is located.

PAR. 150. *Regauge and deposit in customs bonded manufacturing warehouse.*—The collector of customs will direct the proper officer to gauge the wine upon its arrival at the warehouse and cause the wine to be deposited in the customs bonded manufacturing warehouse, class 6, named in the entry. When the wine has been gauged and deposited in the warehouse, the officer will fill out and execute the certificate on part 4 of each copy of the entry, retain one copy for his files, send one copy to the collector of customs, one copy to the district supervisor who approved it, and deliver one copy to the proprietor of the customs bonded manufacturing warehouse. If there has been a loss of wine in transit, the district supervisor will note in part 4 on the copy of Form 711–A retained by him the quantity of wine entered for deposit in the customs bonded manufacturing warehouse, prepare Form 1585 proposing assessment thereon, and forward both forms to the Commissioner.

PAR. 151. *Bill of lading.*—The bill of lading or other document, if any, covering shipment of the wine, must show the proprietor of the bonded manufacturing warehouse, class 6, as the shipper, the serial numbers of the packages, and the quantity of wine. As soon as the wine is shipped, the proprietor of the bonded manufacturing warehouse, class 6, will forward a copy of the bill of lading or other shipping document, if any, to the district supervisor of the district where the winery or bonded wine storeroom is located. If the wine is transported on trucks belonging to the proprietor of the bonded manufacturing warehouse, notation to that effect will be made on the entry, Form 711–A. Upon receipt of the copy of the bill of lading or other shipping document, if any, and copy of the entry, bearing the certificate of deposit of the collector of customs, and after tax has been paid on any wine lost in transit, the district supervisor will make proper entries in his bonded account, Form 733, and credit the account kept with the bond, Form 1580.

ARTICLE XXIX—REMOVAL OF WINE FOR USE OF THE UNITED STATES

PAR. 152. *Removals free of tax.*—Wine may be removed free of tax upon receipt of proper order for use of the United States.

PAR. 153. *Bill of lading.*—Upon shipment the proprietor will forward to the district supervisor of the district a copy of the bill of lading covering the shipment. The bill of lading must show the serial numbers of the packages and the quantity and alcoholic content of the wine. The district supervisor will forward the bill of lading to the Commissioner after checking it with the proprietor's monthly report on Form 702, 702–A, or 702–B, as the case may be. Report of shipment will be made by the proprietor in one of the blank spaces of the form modified for the purpose.

ARTICLE XXX—SHIPMENT OF STILL WINE TO FRUIT DISTILLERY FOR MANUFACTURE OF DEALCOHOLIZED WINE

PAR. 154. *Removed free of tax.*—Still wine may be removed free of tax to a fruit distillery for the manufacture of dealcoholized wine containing less than one-half of 1 per cent of alcohol by volume.

PAR. 155. *Marking of packages.*—When shipped each package must be plainly marked "For dealcoholization," in addition to bearing the other marks and brands. Where fortified wines are removed for dealcoholization, the information called for in paragraph 317 will be entered on Form 702.

PAR. 156. *Entry in Forms 15 and 1493.*—Upon receipt of the wine at the fruit distillery, it will be measured and entered on Form 15 and Form 1493, Monthly Statement of Brandy Distillery Producing Wine Containing Less than one-half of 1 per cent of Alcohol by Volume, with the name,

registry number, and location of the bonded premises from which it is received.

ARTICLE XXXI—SHIPMENT OF STILL WINE TO VINEGAR MANUFACTURERS

PAR. 158. *Removals free of tax.*—Still wine may be removed tax-free from a bonded winery or bonded storeroom for the manufacture of vinegar, but before shipment or delivery to the proprietor of a vinegar plant who is not also a winemaker or proprietor of a bonded storeroom, as specified in paragraph 162, the wine will be converted into vinegar stock as prescribed in these regulations.

PAR. 158. *Conversion into vinegar stock.*—Conversion into vinegar stock will be done under the supervision of an officer detailed to such duty by the district supervisor of the district, by the addition of not less than one-half gallon of glacial acetic-acid, U. S. P., or the equivalent thereof of acetic acid, U. S. P. (approximately 1½ gallons), or of wine vinegar (approximately 12 gallons), to each 100 gallons of dry wine. If fortified wine is to be converted into vinegar stock, three times the quantity of glacial acetic acid, acetic acid, or wine vinegar required for the conversion of dry wine must be added. When glacial acetic acid, U. S. P., or acetic acid, U. S. P., is used, the same need not be tested (except when the district supervisor shall so direct), provided the material is delivered to the officer in a sealed package, bearing seal and label descriptive of its content, placed thereon by a reputable manufacturer.

PAR. 159. *Samples of acetic acid.*—In all cases where it is desired to use wine vinegar, or glacial acetic acid, U. S. P., or acetic acid, U. S. P., not contained in a sealed package, bearing seal and label descriptive of its contents, placed thereon by a reputable manufacturer, the officer will take a 1-pint sample from each container of the material to be used, and will submit the same to the Government chemist for analysis. After the samples are taken the containers will be sealed by the officer. The chemist will make a report of his analysis to the district supervisor of the district, and will state the quantity, in wine gallons, of the material required to raise the acetic acid content of 100 gallons of wine to not less than one-half of 1 percent by volume in the case of dry wine, or 1½ per cent by volume in the case of fortified wine. The officer supervising the conversion will satisfy himself that the material has not been tampered with since the samples were taken, and will see that the required quantity is added to the wine.

PAR. 160. *Marking of packages.*—Where glacial acetic acid, U. S. P., or acetic acid, U. S. P., is used to effect conversion, the containers in which the vinegar stock is shipped will be marked "Acetic acid and wine vinegar stock." Where wine vinegar is used to effect conversion, the containers will be marked "Wine vinegar stock." All containers will also be marked with the name, registry number, location (by city or town and State) of the winery or storeroom from which shipped.

PAR. 161. *Retention of acetic acid on winery premises.*—Winemakers may not retain acetic acid on the winery or storeroom premises. Where wine is to be converted into vinegar stock in accordance with the foregoing, the material required for such conversion must be brought into the winery or storeroom at the time of conversion, and any residue not used must be immediately removed from the winery or storeroom. Wine converted into vinegar stock must be kept separate and apart from other wines in the winery or storeroom during the period necessary for conversion and shipment. The vinegar stock must be removed from the winery or storeroom immediately after conversion. The officer supervising the conversion will see that these requirements are complied with. When fortified wines are removed for the manufacture of vinegar, the information called for in paragraph 317 should be entered on Form 702. District supervisors will advise the Commissioner of all conversions under supervision of their officers.

PAR. 162. *Vinegar plant contiguous to winery.*—A winemaker or proprietor of a bonded storeroom who is also the proprietor of a vinegar plant contiguous or adjacent to the winery or storeroom may withdraw still wine free of tax from his winery or bonded storeroom for removal to such vinegar plant. Application for withdrawal of wine for removal to a vinegar plant will be made on Form 1415, Application to Remove Wine Vinegar from Bonded Wineries Without Payment of Tax, in duplicate, and filed with the district supervisor. If the supervisor finds that the vinegar plant is equipped and in condition to produce vinegar from the wine applied for, he will approve the application, and return one copy to the winemaker or proprietor of a bonded storeroom as his authorization to remove the wine to his vinegar plant. The winemaker or proprietor of a bonded storeroom, who removes wine to his vinegar plant free of tax, will make appropriate entries in Form 702. A winemaker or proprietor of a bonded storeroom desiring to withdraw wine free of tax for the manufacture of vinegar must file consent of surety on bond Form 700–A, or effective bond of prior series, extending its terms to cover withdrawal and use of the wine in the manufacture of vinegar. A winemaker or proprietor of a bonded storeroom who withdraws wine free of tax for the manufacture of vinegar will keep a record at the vinegar plant of all wines received and vinegar produced. Such record, as well as the premises of the plant, and all materials and equipment, shall be available for inspection by officers during business hours.

ARTICLE XXXII—REMOVAL OF SPOILED WINE

PAR. 163. *Soured wine.*—Wine which has unavoidably so soured and spoiled as to be unfit for use as wine and which contains one-half of 1 per cent or more of acetic acid in the case of dry wine, or 1½ per cent or more of acetic acid in the case of fortified wine, and not less than 6 per cent of alcohol and acids combined, may be removed from bonded wineries and bonded storerooms free of tax, pursuant to approved application, Form 1415, for shipment to vinegar manufacturers. Wine which has acetified into vinegar, and contains not less than 4 per cent of acetic acid by volume, and not less than 6 per cent of alcohol and acids combined, may be removed free of tax, pursuant to approved application, Form 1415.

PAR. 164. *Application for removal.*—Proprietors desiring to remove spoiled wine, free of tax, will make application to the district supervisor on Form 1415 for permission to make such removal. Upon receipt of the application, the district supervisor will detail an officer to take a sample from each container of the material which it is desired to remove, and submit the same to the Government chemist for analysis. After the samples are taken the containers will be sealed by the officer.

PAR. 165. *Test for alcohol and acids.*—The chemist will test the wine for both alcohol and acids. If the analysis indicates that the wine has been tampered with, the chemist will so state in his report. If the analysis of the samples shows the wine to contain one-half of 1 per cent or more of acetic acid in the case of dry wine, or 1½ per cent or more of acetic acid in the case of fortified wine, and not less than 6 per cent of alcohol and acids combined, the wine may be removed from the bonded premises, in the presence of a Government officer detailed to such duty by the district supervisor, for shipment to a vinegar factory, free of tax; except that if the analysis shows the wine to contain not less than 4 per cent of acetic acid, and not less than 6 per cent of alcohol and acids combined, it need not be shipped to a vinegar factory, but must be used as vinegar. Removal must be made promptly; otherwise, new samples must be taken and analyzed before removal.

PAR. 166. *Explanation of low alcoholic content.*—If the analysis shows the wine to contain less than 6 per cent of alcohol and acids combined by volume, removal from bonded premises free of tax will not be permitted unless the low alcoholic content is satisfactorily explained by affidavit. Upon receipt of such affidavit, the district supervisor will forward it to the Commissioner with report of his findings and recommendation in respect thereto.

PAR. 167. *Form 1415.*—Application for removal, Form 1415, will be made in duplicate, as will be the chemist's report of analysis. If the district supervisor approves Form 1415, he will retain one copy of the form and one copy of the chemist's report, and forward one copy of each to the proprietor for filing at the winery or storeroom.

ARTICLE XXXIII—CONVERSION OF CHAMPAGNE, SPARKLING WINE, AND ARTIFICIALLY CARBONATED WINE INTO STILL WINE

PAR. 168. *Champagne turned into still wine.*—Champagne, sparkling wine, and artificially carbonated wine which has unavoidably turned into still wine may be dumped into other containers and upon removal tax-paid as still wine. Such champagne, sparkling wine, or artificially carbonated wine must be dumped into other containers in each instance, so as to permit the escape of any effervescence still in the wine.

PAR. 169. *Dumping supervised by officer.*—When the proprietor has as much as 100 bottles which he wishes to dump, he will notify the district supervisor, who will detail an officer to inspect the champagne, sparkling wine, or artificially carbonated wine. If the officer finds that the material has actually turned into still wine through no fault of the winemaker, he will authorize the dumping of the same in his presence. Quantities of less than 100 bottles may be dumped by the proprietor without supervision by an officer.

PAR. 170. *Records.*—When champagne, sparkling wine, or artificially carbonated wine is dumped as still wine, credit will be taken on Form 702–A for the quantity dumped and Form 702 will be debited with a like quantity. If it is desired to destroy champagne, sparkling wine, or artificially carbonated wine because of spoilage, the procedure prescribed in Article XXXV will be followed.

PAR. 171. *Report of officer.*—The officer supervising the dumping of champagne, sparkling wine, or artificially carbonated wine, as still wine, will count the bottles dumped and will state in his report the number and size of bottles dumped, the condition of the champagne, sparkling wine, or artificially carbonated wine, and the apparent cause of deterioration or spoilage. District supervisors will promptly forward a full report of the findings and action taken in each case, together with a copy of the report of analysis, if made, to the Commissioner.

ARTICLE XXXIV—LOSSES

PAR. 172. *Claims for losses.*—Proprietors of bonded wineries and bonded storerooms will claim credit in their winery or storeroom accounts, Forms 702, 702–A, and 702–B, for losses of wines in bond only when it is ascertained that losses have been sustained and only for such quantities as are known to have been lost.

PAR. 173. *Inventories.*—Each proprietor of a bonded winery or bonded storeroom will take an inventory of all wines in storage on June 30 and December 31 of each year, and will enter on his winery or storeroom accounts, Forms 702, 702–A, and 702–B, for those months the losses disclosed by such inventories. Additional inventories may be taken at such other times as the proprietor may desire and the losses disclosed thereby entered on the wine or storeroom accounts. Losses by fire or other casualty, or any other extraordinary or unusual losses, will be reported to the district supervisor immediately after they occur. Credit may also be claimed for such other losses as are actually ascertained to have been sustained, but no credit may be claimed for estimated losses. When an inventory is taken, such fact should be noted on Forms 702, 702–A, and 702–B.

PAR. 174. *Losses at wineries and storerooms.*—Where the losses at a bonded winery or bonded storeroom during any fiscal year, beginning July 1 and ending June 30, exceed 3 per cent of the aggregate quantity of wine on hand at the beginning of the fiscal year and received in bond during the fiscal year, and 6 per cent of the wine produced at a bonded winery by fermentation, or vermouth manufactured, during the fiscal year, or when requested by the district supervisor, the winemaker or proprietor of a bonded storeroom must file with the district supervisor for his district, within 30 days after the close of the fiscal year, an application under oath for remission of the tax on the entire loss, and set out therein all the material facts relating to the loss, and particularly the nature, cause, and extent of the loss. The application will also state the quantity of wine destroyed for which special allowance was made. Applications must be prepared by or at the direction of the proprietor or his duly authorized agent.

PAR. 175. *Percentage of loss allowed.*—The percentage of wine lost will be calculated by fiscal years, beginning July 1 and ending June 30, and will be based on the quantity of wine on hand at the beginning of the fiscal year plus the quantity received and produced during the fiscal year. The percentage of loss from each taxable class of wine will be calculated separately, unless there has been a mixture of different classes during the fiscal year, in which case the percentage of loss will be calculated on the aggregate quantity. Losses of vermouth will be determined separately. The allowances above provided will apply to the losses of each fiscal year separately and will not be cumulative.

PAR. 176. *Cause of loss.*—The nature, cause, and extent of the loss must be stated specifically and in sufficient detail to disclose all the material facts and circumstances surrounding the loss. Where the loss is due to leakage, the cause of the leakage must be stated; where due to racking, the quantity of wine racked and the time of racking should be given; where due to excessive evaporation, the cause therefor should be set out fully; where due to the baking of wine, all of the information required to be entered on the record prescribed by paragraph 85 must be furnished. The particulars of losses from other causes should be given in like manner. Where possible to do so, the loss from each tank or package should be explained separately.

PAR. 177. *Losses of wine in making vermouth.*—Where losses of sweet wine transferred to the vermouth department and the losses of such wine in the process of manufacturing vermouth appear to be excessive, district supervisors will make such investigation, or require such evidence to be submitted, as may be deemed necessary and will advise the Commissioner of their findings and recommendations relative to allowance or disallowance of the loss.

PAR. 178. *Losses in transit.*—Where the loss of wine in transit from any package, case, cask, or tank car shipped in bond exceeds 1 per cent (2 per cent on transcontinental shipments) of the quantity so shipped therein, the proprietor of the winery or storeroom from which the wine is shipped must file with the district supervisor for his district, within 30 days after the shipment is received at destination or is ascertained to have been lost, an application under oath for remission of the tax on the entire loss, setting out therein all the material facts relating to the loss and particularly the nature, cause, and extent of the loss. The application should be supported by statements of proper railroad officials, or affidavits of the consignee or other parties, having personal knowledge of the loss. If the loss does not exceed 1 per cent (2 per cent on transcontinental shipments) from any package, application for the allowance of such loss will not be required, provided there are no circumstances indicating that the wine lost, or any part thereof, was unlawfully removed.

PAR. 179. *Insurance.*—Each application covering losses by casualty or in transit must state whether the proprietor has been or will be indemnified for the tax on the wine lost. Allowance will not be made for losses where the proprietor is so indemnified.

PAR. 180. *District supervisor's examination.*—When an application for remission of tax is filed with the district supervisor, he will carefully examine it and cause such investigation to be made, or require such additional evidence to be submitted, as he may deem necessary, and will forward the application to the Commissioner, together with a statement setting out his recommendation and his reasons therefor, as expeditiously as possible. Where large or excessive losses from casualty or other cause are reported, district supervisors will, upon receipt of such report, immediately

make such investigation or require such evidence to be submitted as may be deemed necessary and will advise the Commissioner of their findings and recommendations relative to allowance or disallowance of the loss.

PAR. 181. *Action by Commissioner.*—The Commissioner will make such allowances for unavoidable loss of wines while in storage or in transit as in his judgment may be just and proper. District supervisors will carry all items of loss in bonded wineries and bonded storerooms in their bonded accounts, Forms 733, 733–A, and 733 marked "Vermouth Account," as not allowed until the tax is paid on the loss or they are advised by the Commissioner that the loss has been allowed. Tax must be paid on all wines removed contrary to law while stored in a bonded winery or bonded storeroom or in transit in bond regardless of the per cent of loss.

ARTICLE XXXV—DESTRUCTION OF SPOILED WINES

PAR. 182. *Destruction witnessed by officer.*—Wine which has unavoidably so soured and spoiled as to be unfit for use as wine may be destroyed without payment of tax, but the destruction thereof must be witnessed in each instance by an officer detailed to such duty by the district supervisor.

PAR. 183. *Notice to district supervisor.*—When the proprietor of a bonded winery or bonded storeroom desires to destroy spoiled wine in order to be relieved of tax liability thereon, he will advise the district supervisor as to the approximate quantity of wine which he desires to destroy, and will request that an officer be detailed to inspect the wine and witness the destruction thereof. Where the quantity to be destroyed is in excess of 500 gallons, or 100 bottles if champagne, sparkling or artificially carbonated wine, the proprietor should accompany his request to the district supervisor with a sworn statement setting forth fully the condition of the wine and the cause of spoilage. The district supervisor will thereupon detail an officer to inspect the wine and witness the destruction thereof at the earliest practicable date as hereinafter provided.

PAR. 184. *Inspection by officer.*—The officer detailed to this duty will carefully inspect the wine; and if he is satisfied from his inspection that the wine has so spoiled from unavoidable cause as to be unfit for use as wine, and if there are no circumstances indicating that the wine has been tampered with through the removal of the original content and the substitution of water or other liquid in lieu thereof, he will permit the destruction of the wine in his presence, provided the quantity to be destroyed is not in excess of 500 gallons, or 100 bottles if champagne, sparkling or artificially carbonated wine.

PAR. 185. *Samples.*—If there are circumstances indicating that the wine may have been tampered with through the removal of the original contents and the substitution of water or other liquid in lieu thereof, or if the quantity to be destroyed is in excess of 500 gallons, or 100 bottles if champagne, sparkling or artificially carbonated wine, the officer will take a sample from each package or bulk container of the wine which it is desired to destroy, which he will submit to the nearest Bureau branch laboratory for analysis. After samples are taken therefrom, packages and bulk containers will be sealed by the officer. A sufficient number of samples of champagne, sparkling or artificially carbonated wine, to be truly representative of the entire lot to be destroyed should be taken.

PAR. 186. *Test for alcohol and acids.*—The chemist will test the wine for both alcohol and acids and examine it for other cause of spoilage, and will state in his report whether the wine is unfit for use as such. Where the analysis indicates that the wine has been tampered with, the chemist will so state in his report. If the chemical analysis of the samples shows the material to be unfit for use as wine and to contain 6 per cent or more of alcohol and acids combined, by volume, the district supervisor may authorize the wine to be destroyed in the presence of the officer. Wine so destroyed will not be included with other losses in calculating the per cent of loss under paragraphs 174 and 175.

PAR. 187. *Explanation required.*—If the analysis shows the wine to contain less than 6 per cent of alcohol and acids combined, by volume, destruction without payment of tax will not be permitted unless the low alcoholic content is satisfactorily explained by affidavit to the district supervisor. Neither will destruction without payment of tax be authorized where it is found that the wine has spoiled through the failure of the proprietor to use reasonable diligence.

PAR. 188. *Officer's report.*—Officers supervising the destruction of spoiled wines will measure the wine before authorizing destruction and will state in their reports the quantity destroyed, the condition of the wine, and the apparent cause of spoilage. District supervisors will promptly forward a full report of their findings and action taken in each case, together with a copy of the chemist's report of analysis, to the Commissioner.

ARTICLE XXXVI—DISPOSITION OF LEES

PAR. 189. *Removed for fertilizer.*—Where it is desired to remove lees from a bonded winery or bonded storeroom for use as fertilizer or other by-product, all liquid must be expressed from the lees before removal from the premises. Lees removed for such purpose must not be used as distilling material or received upon fruit distillery premises.

PAR. 190. *Removed as distilling material.*—Where it is desired to use lees as distilling material, the same must be removed and reported in the same manner as wine removed for distilling material. (See Article XXVI.) When necessary, water may be added to fortified wine lees before removal as distilling material. Appropriate entry, because of the addition of water to the lees, must be made in Form 702.

PAR. 191. *Application for destruction or removal.*—Where the proprietor of a bonded winery or storeroom has a material quantity of lees which he desires to destroy or remove other than for use as distilling material and obtain special allowance therefor, he shall make application in writing to the district supervisor for permission to do so, stating the kind, approximate quantity, alcoholic content, and the nature of the proposed disposition. If the lees to be destroyed are unfortified lees, and in a quantity of not more than 500 gallons, the district supervisor will authorize the applicant in writing to dispose of the lees without supervision, except that if the supervisor deems it advisable he will detail an officer to make inspection of the lees and supervise its destruction. Lees which are destroyed or removed pursuant to such written permission or in the presence of a Government officer detailed to such duty by the district supervisor, will not be included with other losses in calculating the per cent of loss under paragraphs 174 and 175. Lees destroyed under the supervision of an officer, or by written authorization of the supervisor, will be entered on Form 702 as loss according to taxable grade, and the disposition or method of destruction must be stated.

ARTICLE XXXVII—MONTHLY RECORDS

PAR. 192. *Form 702.*—The proprietor of every bonded winery or bonded storeroom will keep a monthly record on Form 702.

PAR. 193. *Form 702–A.*—At wineries or storerooms where champagne, sparkling wine, or artificially carbonated wine is handled, the proprietor will keep a separate monthly record on Form 702–A.

PAR. 194. *Form 702–B.*—The proprietor of every bonded winery manufacturing vermouth, and the proprietor of every bonded winery or storeroom receiving, storing, or disposing of vermouth, will keep a monthly record on Form 702–B of transactions in vermouth. Proprietors of wineries manufacturing vermouth will also keep on such form a record of all wines and other materials received and used for the manufacture of vermouth.

PAR. 195. *Material record, Form 701.*—The proprietor of every bonded winery shall keep a monthly record on Form

701 of all materials, other than ameliorating materials, received and used for the manufacture of wine. The receipt of such materials will be entered daily on the form in the statement "Materials received." Each winemaker shall keep a separate record showing the names and addresses of all persons from whom such materials are received, together with the date of receipt, and the kind and quantity received from each: *Provided*, That where commercial records containing such information are kept on the premises available for inspection and in such a manner that the required information may be readily ascertained therefrom, such commercial records will be accepted in lieu of such separate record. Form 701 need not be kept when there are no materials on hand or wine in the process of manufacture.

PAR. 196. *Complete records required.*—All the information called for in Forms 701, 702, 702–A, and 702–B, as indicated by the headings of the various columns and lines of the forms and the instructions pirnted on the forms, will be reported and all operations will be entered daily on the forms. The entries must be made by the proprietor, or by his agent from personal knowledge or from data furnished by the proprietor. Reports prepared by persons who have no knowledge of the winery or storeroom operations will not be accepted.

PAR. 197. *Fractional parts of gallon.*—All fractional parts of a gallon shall be stated on Forms 701, 702, and 702–B in decimals. For example, one-half gallon should be stated as 0.50 gallon, and not ½ gallon. Fractional parts of a gallon less than one-hundredth will be excluded. Thus, 40.079 gallons will be called 40.07 gallons.

PAR. 198. *Reports signed by proprietor or authorized agent.*—These reports must be subscribed and sworn to by the proprietor or his duly authorized agent. An agent who signs the reports must have on file with the district supervisor a proper power of attorney authorizing him to execute the reports for the proprietor.

PAR. 199. *Three copies of each record.*—One copy each of Forms 701, 702, 702–A, and 702–B will be retained at the winery or storeroom by the proprietor as a permanent record, subject to inspection by Government officers at any reasonable hour. On or before the 10th day of the month succeeding that for which rendered, the proprietor will forward two copies of each form to the district supervisor.

PAR. 200. *Records forwarded together.*—When Forms 701, 702–A, and 702–B are kept, the proprietor will insert one copy of each such form in each copy of Form 702. Where forms are rendered in blank they should bear the notation "No transactions." Upon discontinuance of a bonded winery or bonded storeroom, the last reports should be marked "Final."

ARTICLE XXXVIII—DISTRICT SUPERVISOR'S ACCOUNTS

PAR. 201. *Monthly accounts.*—District supervisors will render monthly accounts on Forms 733 and 733–A of transactions at bonded wineries and bonded storerooms. Form 733 will be used for still wines, Form 733–A for champagne, sparkling wine, and artificially carbonated wine, and Form 733 marked "Vermouth Account" for vermouth. These accounts will be prepared from data obtained from Forms 702, 702–A, and 702–B rendered by the proprietors of bonded wineries and bonded storerooms.

PAR. 202. *Unaccounted for items.*—Still wine and vermouth shipped to other bonded premises will be carried as unaccounted for until Form 702, 702–B, or 703 is received showing that the wine has been received at the premises to which shipped. Wine shipped for export will likewise be carried as unaccounted for until Form 711 and bill of lading are received showing exportation of the wine. Losses in transit will be carried as not allowed until the same are allowed by the Commissioner or the tax is paid thereon.

PAR. 203. *Losses reported.*—The quantity of spoiled wines destroyed in the presence of Government officers in accordance with Article XXXV, and the quantity of lees destroyed or removed in accordance with Article XXXVI, will be reported as loss. Where there is no evidence or circumstances indicating that the wines were tampered with through removal of the original content and the substitution of water or other liquid in lieu thereof, credit may be taken for such items as loss allowed on storage.

PAR. 204. *Accounts in duplicate.*—District supervisors' monthly accounts will be prepared in duplicate and by States within the district. One copy will be retained by the district supervisor and one copy forwarded on or before the last day of the month succeeding that for which rendered, to the Commissioner, together with copies of Forms 701, 702, 702–A, and 702–B.

ARTICLE XXXIX—STAMPS

PAR. 205. *Denominations.*—Stamps for the tax-payment of wines will be provided in denominations of ½ cent, 1 cent, 1¼ cents, 1½ cents, 2 cents, 2½ cents, 3 cents, 4 cents, 5 cents, 6 cents, 7½ cents, 10 cents, 12 cents, 15 cents, 18 cents, 20 cents, 24 cents, 30 cents, 36 cents, 40 cents, 48 cents, 50 cents, 60 cents, 72 cents, 80 cents, $1.00, $1.20, $1.44, $1.50, $1.60, $2.00, $2.50, $4.00, $4.80, $5.00, $9.60, $20, $40, $50, and $100.

PAR. 206. *Purchase from collector.*—Such stamps will be purchased by winemakers from the collector of internal revenue of the district in which the winery or storeroom is located. Stamps may not be purchased by one winemaker from another, nor may they, except in cases of emergency, be purchased from collectors of other districts. Wine-tax stamps may be sold only to proprietors of bonded wineries or bonded storerooms and then only for the payment of tax on wine.

PAR. 207. *Form 427–B.*—With each purchase of stamps the winemaker will submit to the collector Form 427–B, Order for Stamps—Wine, in triplicate, properly filled out. The collector will stamp the date of sale on all copies of Form 427–B, return one copy to the winemaker with the stamps, and send one copy to the appropriate district supervisor of the Alcohol Tax Unit. The remaining copy of Form 427–B will be filed in the collector's office so that all purchases of stamps may be verified at any time. Collectors will refuse to sell stamps where such form is not submitted.

PAR. 208. *Affixing and canceling.*—Stamps denoting the payment of tax on packages or cases of wine must be securely affixed thereto and canceled in the manner prescribed in paragraph 108.

PAR. 209. *Obliteration of stamps, marks, and brands.*—A dealer who empties any receptacle to which wine stamps are attached shall destroy such stamps; and if the receptacle is a cask, barrel, keg, tank, tank truck, or railroad tank car, he shall scrape or obliterate the marks, brands, and certificates of tax-payment thereon. Wine stamps shall be destroyed by scraping or obliterating, immediately the receptacles to which they are attached are emptied. Marks and brands on all casks, barrels, and kegs, and certificates of tax-payment on tank cars, containing wine, shall also be scraped or obliterated immediately upon emptying.

ARTICLE XLI—REDEMPTION OF STAMPS

PAR. 212. *Statute governing redemption of stamps.*—The Act of May 12, 1900, as amended (U. S. C., 1934 ed., title 26, section 1424), provides—

> That the Commissioner of Internal Revenue, subject to regulations prescribed by the Secretary of the Treasury, may, upon receipt of satisfactory evidence of the facts, make allowance for or redeem such of the stamps, issued under authority of law, to denote the payment of any internal-revenue tax, as may have been spoiled, destroyed, or rendered useless or unfit for the purpose intended, or for which the owner may have no use, or which through mistake may have been improperly or unnecessarily used, or where the rates or duties represented thereby have been excessive in amount, paid in error, or in any manner wrongfully collected. Such allowance or redemption may be made, either by giving other stamps in lieu of the stamps so allowed for or redeemed, or by refunding the amount or value to the owner thereof, deducting therefrom, in case of repayment, the percentage, if any, allowed to the purchaser thereof; but no allowance or redemption shall be made in any case until the stamps so spoiled or rendered useless shall have been returned to the Commissioner of

Internal Revenue, or until satisfactory proof has been made showing the reason why the same can not be returned; or if so required by the said Commissioner, when the person presenting the same can not satisfactorily trace the history of said stamps from their issuance to the presentation of his claim aforesaid.

The said Act, as amended, further provides—

That no claim for the redemption of or allowance for stamps shall be allowed unless presented within four years after the purchase of such stamps from the Government.

PAR. 213. *Claim to collector.*—Winemakers desiring to have wine stamps redeemed under the foregoing provisions of law must make claim on Form 843, Claim for Refund of Amounts Paid for Stamps, to the collector of internal revenue. When a winery or storeroom is discontinued and stamps remain on hand, such stamps are not redeemable if the winemaker operates other bonded premises at which wines are stored. In such cases the stamps may be transferred to the remaining premises for use thereat. Notation of the transfer must be made on record Form 702 of both premises.

ARTICLE XLII—IMPORTED WINES

PAR. 214. *Tax-payment.*—All internal revenue taxes payable on wines imported into the United States from foreign countries and coming into the United States from the Virgin Islands, when entered or withdrawn for consumption, will be collected, accounted for, and deposited as internal revenue collections by collectors of customs, in accordance with Customs Treasury Decision 47942.

ARTICLE XLIII—PAYMENT OF SPECIAL (OCCUPATIONAL) TAXES

PAR. 215. *Retail and wholesale liquor dealer.*—Unless exempted by law, all persons who sell wines in quantities of less than 5 wine gallons to the same person at the same time are liable for special tax as retail dealers in liquors at the rate of $25 per year, and all persons who sell wines in quantities of 5 wine gallons or more to the same person at the same time are liable for special tax as wholesale dealers in liquors at the rate of $100 per year. Persons selling wine both in retail and wholesale quantities are liable for special taxes as both retail and wholesale dealers in liquors, except that no retail dealer incurs liability as a wholesale dealer solely by reason of sales of 5 wine gallons or more to the same person at the same time if such sales are for immediate consumption on the premises where sold.

PAR. 216. *Exemption of winemaker.*—Qualified winemakers who sell wines of their own production at the winery where the same are made or at the general business office of such winemaker, are exempt from these special taxes; but no winemaker shall be exempt from such special tax for more than one place of sale. Unless the exemption is claimed elsewhere by the winemaker, it will be presumed that the exemption is claimed for the winery where the wine is produced, and collectors of internal revenue should collect special taxes accordingly. Where the exemption is claimed for a place other than the winery, the collector shall ascertain that special tax, if incurred, has been paid at the winery before allowing the exemption.

PAR. 217. *Annual special tax.*—The special-tax year commences on July 1 of each year and ends on June 30 of the next year. All persons liable for special tax must file Form 11 with the collector of internal revenue and pay the special tax to him not later than July 31 of each year. Special taxes become due on the 1st day of July in each year and payment thereof will be evidenced by special-tax stamps issued by the collector.

PAR. 218. *Business commenced after July 1.*—Where business is commenced after July 1, the tax will be computed ratably from the 1st of the month in which business was commenced to June 30 following. In such cases, Form 11, Special Tax Return, must be filed with the collector and the tax paid to him not later than the last day of the month in which business commenced.

PAR. 219. *Failure to pay special tax.*—Any person liable for special tax, who fails to file a return, Form 11, within the prescribed time, and who willfully fails to pay such tax, is liable to severe penalties.

ARTICLE XLIV—PENALTIES

PAR. 220. *Penalty for tax evasion.*—Section 620 of the Revenue Act of 1918, as amended, provides—

That whoever evades or attempts to evade any tax imposed by sections 611 to 615, both inclusive, or any requirement of sections 610 to 621, both inclusive, or regulations issued pursuant thereto, or whoever, otherwise than as provided in such sections, recovers or attempts to recover any spirits from domestic or imported wine, shall, on conviction, be punished for each such offense by a fine of not exceeding $5,000, or imprisonment for not more than five years, or both, and in addition thereto by a penalty of double the tax evaded, or attempted to be evaded, to be assessed and collected in the same manner as taxes are assessed and collected, and all wines, spirits, liqueurs, cordials, or similar compounds, as to which such violation occurs shall be forfeited to the United States. * * *

Section 1308 of the Revenue Act of 1918 provides—

That any person required under Titles V, VI, VII, VIII, IX, X, or XII, to pay, or to collect, account for and pay over any tax, or required by law or regulations made under authority thereof to make a return or supply any information for the purposes of the computation, assessment, or collection of any such tax, who fails to pay, collect, or truly account for and pay over any such tax, make any such return or supply any such information at the time or times required by law or regulation shall in addition to other penalties provided by law be subject to a penalty of not more than $1,000.

Any person who willfully refuses to pay, collect, or truly account for and pay over any such tax, make such return or supply such information at the time or times required by law or regulation, or who willfully attempts in any manner to evade such tax shall be guilty of a misdemeanor and in addition to other penalties provided by law, shall be fined not more than $10,000 or imprisoned for not more than one year, or both, together with the costs of prosecution.

* * * * *

The term "person" as used in this section includes an officer or employee of a corporation or a member or employee of a partnership, who as such officer, employee, or member is under a duty to perform the act in respect of which the violation occurs.

ARTICLE XLV—BUSINESS SUBJECT TO INSPECTION BY GOVERNMENT OFFICERS

PAR. 221. *Inspection by officers.*—Internal revenue officers have authority to inspect at any reasonable hour the records, stocks, and premises of winemakers to determine that all provisions of the internal revenue laws are being complied with. Officers desiring to make inspections are required to identify themselves as such by exhibiting their credentials. Any person who shall forcibly obstruct or hinder an internal revenue officer in the execution of any power or authority vested in him by law, renders himself liable to severe penalties.

PAR. 222. *Inventory of wines.*—Inspecting officers will, when directed to do so, take an accurate inventory of all wines on hand at the time of their inspection and compare the quantity found with the quantity carried in the winery or storeroom accounts, Form 702, 702–A, and 702–B. Where a material overage or deficiency in wine is found, the proprietor will be called upon immediately to explain the reasons therefor, and he will be instructed to enter the overage or deficiency on his current account, Form 702, 702–A, or 702–B, as the case may be, with proper explanatory note. The officers will also instruct the winemaker relative to adjusting the winery or storeroom accounts because of any other discrepancies found by them.

PAR. 223. *Assessment of tax on shortages.*—Inspecting officers will not report for assessment apparent shortages of wine or instruct the winemaker to adjust the winery or storeroom records because of apparent overages or shortages where the overage or shortage is not determined by actual inventory. If the officers do not take an actual inventory and their findings are based upon estimate, they should so state in their reports.

PAR. 224. *Inventory of stamps.*—An inventory of the stamps on hand will be taken and the amount found compared with the quantity carried in the winery or storeroom accounts on Form 702. The officers will ascertain whether the proprietor is properly serially numbering and marking all

packages upon removal and whether entries are properly made on Forms 701, 702, 702–A, and 702–B. All wines on storage will be examined and where it appears that the wine in any container has been tampered with through illegal removal of the original content and the substitution of water or other liquid therefor, a sample will be taken from each such container and submitted to the Bureau chemist for analysis.

PAR. 225. *Reports to Commissioner.*—District supervisors will forward to the Commissioner with their recommendations in respect to the assessment of taxes, copies of all reports of officers disclosing apparent tax liabilities or that the winery or storeroom accounts are incorrect and should be adjusted.

PART 2—REGULATIONS RELATING TO THE FORTIFICATION OF WINE

ARTICLE XLVI—KINDS OF WINE AND BRANDY USED IN FORTIFICATION

PAR. 227. *Limitations.*—Natural wine and pure sweet wine (defined in Article XVI) may be fortified with grape brandy (defined in paragraph 245), and citrus-fruit wine, peach wine, cherry wine, berry wine, apricot wine, and apple wine (defined in Article XVI) may be fortified with citrus-fruit brandy, peach brandy, cherry brandy, berry brandy, apricot brandy, and apple brandy (defined in paragraph 245), respectively, by the producer of such wine on the premises where made: *Provided*, That a citrus-fruit brandy prepared from one kind of citrus fruit may not be used for the fortification of a citrus-fruit wine prepared from another kind of citrus fruit, and a berry brandy prepared from one kind of berry may not be used for the fortification of a berry wine prepared from another kind of berry. No wine other than the wines named may be fortified, and no spirits other than the kind of brandy specified in the case of each, except tax-paid grain or other ethyl alcohol, may be used to fortify such wines. Wine may not be fortified by any person other than the producer thereof, or on premises other than those where made.

PAR. 228. *Form 605.*—At the beginning of each vintage season and at least 30 days before commencing the production of wine for fortification, winemakers must file with the district supervisor a notice on Form 605, Winemaker's Notice of Intention to Fortify Wines, in duplicate, executed in accordance with instructions printed thereon.

ARTICLE XLVII—FORTIFYING ROOM

PAR. 229. *Separate room for fortification.*—At wineries where wine is fortified a separate room must be provided on the bonded premises for that purpose and for the storage of brandy to be so used. This room wil be known as the fortifying room and will be used solely for the storage of brandy and the fortification of wine, except that when the room is not devoted to such use, or when all brandy on storage therein is in a separate locked compartment as provided in paragraph 231, the room may be used for other purposes. All brandy for use in fortification received at the winery will be immediately deposited within the fortifying room, and all wine fortified will be fortified within this room.

PAR. 230. *Construction of room.*—This room must be securely built of substantial materials. With the exception of the entrance door, all doors, windows, or other openings leading to or from the fortifying room must be so arranged and built that they may be securely locked, bolted, or barred from the inside. The entrance door, which will be locked by a Government seal lock at all times when brandy, or wines held for refortification, are on deposit therein, except when fortifying operations are being carried on, or when brandy or wine is being received therein or removed therefrom, and the key to the lock will be in the custody of the district supervisor or other Government officer disignated by him. The windows must be secured by substantial iron bars or solid shutters. District supervisors will make requisitions for the necessary locks and seals, the same to be supplied, used, and accounted for as in case of internal revenue bonded warehouses.

PAR. 231. *Brandy room.*—If desired, the fortifying room may be divided into two separate compartments, one for the fortification of wine and the other for the storage of brandy withdrawn for use in fortification. If a special room for the storage of brandy is provided, it must be sufficiently large to admit of the storage of all brandy to be received and possessed at any one time. When a brandy storage room is provided, all brandy received at the winery for use in fortification will be deposited therein, except where the brandy is to be used immediately, as provided in paragraph 233.

PAR. 232. *Locks for brandy room.*—The door to the brandy storage compartment must open into the other part of seal lock at all times when brandy is on deposit therein, except when brandy is being received therein or removed therefrom. The key to the lock will be in the custody of the district supervisor or other Government officer designated by him.

PAR. 233. *Suitable facilities.*—The fortifying room must be provided with suitable facilities for the fortification of wine and must be sufficiently large to admit of the storage and necessary handling of all brandy withdrawn for fortification purposes that may be on hand unused at any one time. There must be provided within the room suitable fortifying tanks sufficient in number and capacity to enable the Government officer to supervise the fortification operations expeditiously. All wines shall be fortified in such tanks. Where brandy is received by pipe line or in railroad tank cars, suitable closed storage tanks of sufficient capacity for the storage of all brandy so received must also be provided within the room, unless the brandy is to be used immediately and is run directly into the fortifying tanks.

PAR. 234. *Fortifying and storage tanks.*—A permanent serial number and the capacity in wine gallons must be painted on all tanks within the fortifying room. The capacity of the tank per inch of depth must be painted on fortifying tanks and brandy storage tanks of uniform dimensions, standing on end. A table showing the capacity of the tank for each inch of depth must be securely attached to each fortifying tank and brandy storage tank of irregular dimensions or lying on side, a copy of which table shall be attached to each copy of Form 698.

PAR. 235. *Location of tanks.*—All tanks in the fortifying room must be at least 18 inches from any wall and from each other, except that the supervisor may, if, in his opinion, conditions warrant, permit a lesser distance between such tanks, but in no case less than 12 inches. Properly constructed concrete tanks will be permitted in the fortifying room, either single or in series with no space between if so arranged as to permit ready inspection by Government officers. Manholes and all inlet and outlet connections of brandy storage tanks must be equipped with Government locks. The wall of a concrete tank may constitute a part of the wall of the fortifying room. All pipes, hose, or other conveyors leading to or from tanks must be so exposed as to permit ready inspection by Government officers. All stopcocks must be of easy access. Suitable and accurate scales must be provided and placed in this room for use in gauging the brandy, except where all brandy used is conveyed by pipe line directly to the fortifying tank immediately after gauging at the distillery.

PAR. 236. *Accommodations for Government officers.*—A well-lighted, heated, and ventilated office not less than 10 feet square must be provided within the fortifying room by the winemaker for the use of the Government officers assigned to supervise fortification. The office must be furnished with a desk having one or more drawers that may be locked, suitable for the storage of necessary records and forms, a chair, water for making tests, and shelving for storing samples. Where, in the case of wineries heretofore established, it is not practicable to provide an office in the fortifying room in conformity with the requirements hereof,

such an office will not be insisted upon if other reasonable and suitable office accommodations for the use of Government officers have been provided.

PAR. 237. *Form 698 and plan.*—The fortifying room and equipment must be accurately described in Form 698 and the plan of the winery premises and apparatus as prescribed in Article X. Where material changes are made in the room, such as the removal or addition of tanks, or changes in the capacity of tanks, report thereof must be made and filed as provided by paragraph 49.

ARTICLE XLVIII—TANKS AND EQUIPMENT

PAR. 238. *Weighing tanks.*—Where brandy is received in railroad tank cars or by pipe line (except as hereinafter provided), a suitable weighing tank must be installed within the fortifying room for weighing the brandy when received and used. The same weighing tank may be used where suitable for weighing the quantities of brandy received and used for fortification.

PAR. 239. *Testing instruments.*—Appropriate and accurate instruments for determining the alcoholic, saccharine, and acid content of all wines ameliorated and fortified must be provided by the winemaker. Information respecting instruments which may be used for the purpose will be found in paragraphs 30 and 31. If such instruments are not provided, other appropriate and accurate instruments approved by the Commissioner must be provided in lieu thereof.

ARTICLE XLIX—KINDS OF WINE THAT MAY BE FORTIFIED

PAR. 240. *Wines eligible for fortification.*—Only natural wine, citrus-fruit wine, peach wine, cherry wine, berry wine, apricot wine, apple wine, and pure sweet wine produced in accordance with Article XVI of these regulations may be fortified.

PAR. 241. *Supervision by Government officers.*—Government officers assigned to supervise the fortification of wine will not allow such fortification unless they are satisfied after examination of the tank label, Form 546, and testing of the wine, that the limitations in these regulations relative to the amelioration of wine have been observed. If the Government officer is doubtful whether the wine is eligible for fortification, he will submit the matter to the district supervisor for decision.

ARTICLE L—IDENTIFICATION OF WINES

PAR. 242. *Form 546.*—Where grapes, citrus-fruit (except lemons and limes), peaches, cherries, berries, apricots, or apples are crushed for probable fortification, there shall be attached to the fermenting tanks into which the material is run a label, Form 546, filled out in accordance with the instructions contained therein.

PAR. 243. *Removal of Form 546.*—Form 546 will be signed by the winemaker. If the wine is transferred to another tank before amelioration or fortification, the label must be transferred to the new tank and the serial number of the tank and date of transfer entered on such label. Where the contents of two or more tanks are transferred to a single tank, the labels will be attached to the new tank. Where the contents of a tank are transferred to two or more tanks, duplicate labels will be attached to the new tanks. Upon fortification of the wine, the label will be removed and attached to the copy of Form 275, Storekeeper-Gauger's Report of Fortification of Wine, which is forwarded to the district supervisor.

PAR. 244. *Transfer of labels.*—The labels must be so attached to t he tanks that they will not become detached or obliterated and so that they may be transferred from one tank to another upon transfer of the wines. Government officers will not permit the fortification of wine contained in any tank which is not labeled in accordance with these regulations.

ARTICLE LI—KIND OF SPIRITS USABLE FOR FORTIFICATION

PAR. 245. *Brandies eligible for use in fortification.*—The brandies authorized to be used for fortification, as enumerated in paragraph 227, are those made exclusively from grapes, citrus fruits (except lemons and limes), peaches, cherries, berries, apricots, or apples, or from grape wine in the manufacture of which artificial sweetening has been used under the limitations prescribed by Article XVI of these regulations, or from the fruit pomace residuum of such grape wine, or from citrus-fruit wine, peach wine, cherry wine, berry wine, apricot wine, or apple wine, in the manufacture of which artificial sweetening has been used under the limitations prescribed by Article XVI of these regulations. Brandy produced from the products or the residues of such fruits and berries may also be used for fortification. No brandy or wine spirits produced otherwise than as specified herein may be used for fortification. Brandy produced from grape cheese and a sugar solution may not be used for the fortification of wine.

ARTICLE LII—PROCUREMENT OF BRANDY AND TAX-PAID ETHYL ALCOHOL FOR THE FORTIFICATION OF WINE

PAR. 246. *Procurement of brandy.*—After notice on Form 605 has been filed with the district supervisor, and the use of the pipe line, if any, for the transfer of brandy has been approved, the winemaker may procure brandy or tax-paid ethyl alcohol in the manner hereinafter prescribed for use in fortifying wines.

PAR. 247. *Safe-keeping of brandy.*—Winemakers should not make application to procure brandy in excess of their immediate needs. Upon removal of the brandy from the distillery or warehouse they become responsible under the law and regulations for the safe-keeping of the brandy and for the tax on any losses, except as provided in Article LIX.

ARTICLE LIII—MANNER OF PROCURING BRANDY IN PACKAGES FROM FRUIT DISTILLERIES

PAR. 248. *Application to withdraw brandy.*—Where it is desired to procure brandy from a fruit distillery, the winemaker will make application on part 1 of Form 257, Application for the Removal of Brandy to Fortify Wine, to the district supervisor of the district in which the winery is located, for the withdrawal thereof and the assignment of an officer to gauge the same for that purpose. The application shall be filed in triplicate where the winery and the distillery are in the same supervisory district, and in quadruplicate where they are in different districts. A separate application must be made for each lot of brandy which it is desired to procure. The same application may not include brandy from more than one distillery, nor two or more lots to be removed from the same distillery at different times, except where the distillery is adjacent to the winery as hereinafter provided.

PAR. 249. *Action of district supervisor.*—If the application is in proper order and the bond of the winemaker computed as prescribed by paragraph 48 is sufficient to cover the brandy to be procured, the district supervisor will (1) where the distillery is located in another supervisory district, execute part 3 of the form and forward all four copies to the district supervisor of such district, who will in turn execute part 4 of the form and deliver all four copies to the officer designated to gauge the brandy; (2) where the distillery is in the same district, execute parts 3 and 4 of the form and deliver all three copies to the officer designated to gauge the brandy.

PAR. 250. *Gauge of brandy.*—The officer receiving the order to gauge will deliver all copies of Form 257 to the distiller, who will execute part 5, the notice of the brandy to be gauged, on all copies of the form and return them to the officer. The packages will then be gauged and the required marks placed thereon. The officer will enter in detail his gauge of each package on Form 1520, Storekeeper-Gauger's Report of Spirits Gauged, an extra copy of which he will securely attach to each copy of Form 257. No greater quantity of brandy may be gauged than stated in the order.

PAR. 251. *Distillery and winery on contiguous premises.*—Where the distillery and winery are located on contiguous premises and the officer is charged with supervising deposit of the brandy in the fortifying room, he will retain the Form

257, with the extra copies of Form 1520 attached, and upon deposit of the brandy in the fortifying room, he will execute the certificates of gauge and receipt, parts 6 and 8 on all copies of Form 257.

PAR. 252. *Distillery and winery not on contiguous premises.*—Where the distillery and winery are not located on contiguous premises and the officer is not charged with supervising deposit of the brandy in the fortifying room of the winery, he will, upon withdrawal of the brandy, execute his certificate of gauge, part 6, on all copies of the Form 257, with the extra copies of Form 1520 attached, retain one copy, and immediately forward the remaining copies (two or three, as the case may be) to the winemaker, who will present them to the officer at the winery as a voucher for deposit in the fortifying room. Where no officer is assigned to the winery, the winemaker will request the district supervisor to detail an officer to supervise the deposit of the brandy in the fortifying room. When the brandy is received at the winery, the officer will satisfy himself that the brandy is the same as that described in Form 257, and will supervise its deposit within the fortifying room. He will gauge any packages which appear to have been tampered with, or from which brandy appears to have been abstracted or lost. The details of packages gauged will be reported on Form 1520, with a statement setting forth fully the apparent cause of the loss. An extra copy of such Form 1520 will be attached to each copy of Form 257. After the brandy has been deposited within the fortifying room and any necessary gauging performed, the officer will execute his certificate of receipt on Part 8 of all copies of Form 257.

PAR. 253. *Form 257.*—Upon deposit of the brandy in the fortifying room, the officer will retain one copy of Form 257, with copy of Form 1520 attached, at the winery as a permanent record, and forward the other copy or copies, with Form 1520 attached to each, to the district supervisor, who will, in cases where the brandy was withdrawn from a distillery in another district, forward the extra copy to the district supervisor of such district.

PAR. 254. *Form 1520.*—If the distillery and winery are located on contiguous premises and brandy is to be transferred to the winery from time to time during the month under supervision of an officer, the winemaker's application on part 1 of Form 257, and the district supervisor's order to gauge on part 4 of the form, may cover all brandy to be transferred to the winery during the month. In such case, the officer will make three extra copies of Form 1520, covering his gauge of each lot of brandy transferred to the winery. If the officer gauging the brandy supervises its transfer to and deposit in the fortifying room, he will certify to deposit, on each copy of Form 1520 as the brandy is deposited, and attach one copy thereof to each copy of Form 257. At the close of the month the officer will execute parts 6 and 8 of Form 257, retain one copy thereof, with a copy of each Form 1520 attached, at the winery as a permanent record, and one copy, similarly completed, at the distillery for the same purpose, and forward the other copy to the district supervisor.

PAR. 255. *Officer separately assigned to winery.*—Should an officer be separately assigned to duty at the winery, the officer at the distillery will retain one copy of Form 257 and attach one copy of each Form 1520 thereto as the brandy is gauged, and deliver the other two copies of Form 257 and Form 1520 to the officer at the winery, who will certify to deposit on Form 1520 as the brandy is received and deposited in the fortifying room and attach a copy of Form 1520 to each copy of Form 257. At the close of the month the officer at the distillery will execute his certificate of gauge on part 6 of all three copies of Form 257 and the officer at the winery will execute his certificate of receipt on part 8 of all copies of the form. The forms will then be disposed of as provided in the preceding paragraph.

ARTICLE LIV—MANNER OF PROCURING BRANDY BY PIPE LINE FROM FRUIT DISTILLERIES

PAR. 256. *Distillery and winery on contiguous premises.*—Where the distillery and winery are located on contiguous premises and are operated by the same person, the brandy may be transferred, under the direct supervision of a Government officer, from the distillery to the fortifying room by pipe line: *Provided*, That the bond given as a fruit distiller, Form 30½, Fruit Distiller's Bond, and the bond given as a winemaker, form 700–A, or an effective bond of a prior series, are supported by the same surety, or, if supported by different sureties, the terms of the distillery bond are extended by consent of surety, Form 1533, to cover the transfer of brandy from the distillery to the fortifying room of the winery by pipe line.

PAR. 257. *Report of gauger.*—Where brandy is so transferred, application will be made by the winemaker on Form 257 in the same manner as when brandy is transferred in packages, as prescribed in paragraph 248. The district supervisor will likewise give his order to gauge, as prescribed in paragraph 249, the distiller will indicate the brandy to be gauged, as prescribed in paragraph 250, and the officer designated to gauge the brandy will make his report of gauge and execute his certificates of gauge and receipt, and complete and dispose of Forms 257, with Forms 1520 attached, as prescribed in Article LIII. Notation of transfer by pipe line will be made on Forms 257 or 1520.

PAR. 258. *Pipe line.*—The pipe line shall be of a fixed and permanent character, constructed of metal, and so arranged that it will be exposed to view throughout its entire length. Where the brandy is weighed in the distillery before being run into the fortifying room, the pipe line shall be directly connected in a secure manner with fortifying tanks or brandy storage tanks in the fortifying room; and where the brandy is weighed in the fortifying room, the pipe line shall be directly connected in a secure manner with receiving or brandy storage tanks in the distillery. The pipe line shall be fitted with valves so constructed that they may be locked with Government locks and so arranged as to control the flow of brandy from or into each tank with which it is connected. The valves will be locked with Government locks at all times, except when necessary to be open for the transfer of brandy. The keys will remain in the custody of the Government officer at the distillery, or, if no officer is assigned to the distillery, in the custory of the district supervisor or other officer designated by him.

PAR. 259. *Underground conduit.*—If the distance from the distillery to the fortifying room is great enough to make an underground conduit necessary, or desirable, the same may be used, but must be on a straight line, and not less than 15 inches in diameter, and constructed of iron, concrete, or other suitable material. Such conduit must be supplied with lights in order that it may be readily examined through its entire length. The pipe line passing through this conduit must be clear of the walls thereof, and with no openings except at either end. Each end of the conduit must be provided with some means of closing that may be securely locked with a Government lock, the keys to which will be in the custody of the district supervisor or other officer designated by him.

PAR. 260. *Weighing tanks.*—No pipe line may be used until it has been inspected, and has been approved by the district supervisor. Where brandy is transferred by pipe line a suitable weighing tank or tanks must be provided for gauging the brandy. Such weighing tank or tanks may be located in either the distillery or the fortifying room, but one weighing of the brandy will be required in connection with its transfer to the fortifying room. The brandy may accordingly be weighed either in the distillery immediately before being run into the fortifying room or in the fortifying room immediately upon being received.

PAR. 261. *Fortifying room not having weighing tank.*—Where a weighing tank is not provided in the fortifying room, the brandy may be transferred thereto by pipe line only for immediate use and only in such quantities as are necessary to fortify a given lot of wine. In such cases the wine to be fortified will be run into the fortifying tank and the required quantity of brandy to fortify the wine will be gauged in the distillery and run directly into the fortifying tank containing the wine.

PAR. 262. *Pipe line to wine tank.*—The Government officer at the winery should see that the pipe line will discharge directly into the tank of wine to be fortified before the valve permitting the flow to that tank is opened. After all the brandy in the weighing tank has been withdrawn, the valve in the pipe line will be locked.

PAR. 263. *Storage tank in fortifying room.*—Where it is desired to transfer brandy to the fortifying room and store the same therein prior to use, there must be provided within the fortifying room (or brandy storage room therein, if one is provided) a suitable storage tank or tanks for storing the brandy and a weighing tank for use in gauging the brandy when used. (See Articles XLVII and XLVIII.)

PAR. 264. *Tank locks.*—The pipe line must empty into a closed tank, which will be locked with a Government lock while brandy is being discharged therein or remains therein. The keys to this lock will be retained in the possession of the officer at all times. Where the brandy is run directly by pipe line into the fortifying tank, such tank must be fitted with a locked cover. If, however, the weighing tank is located in the fortifying room, it is not necessary that the fortifying tanks be fitted with locked covers.

PAR. 265. *Report on Form 275.*—Where brandy is transferred to the fortifying room by pipe line for immediate use, the Government officer will note on the copies of Form 1520 attached to his report, Form 275, the statement "Received by pipe line from distillery No. ------."

ARTICLE LV—USE OF RAILROAD TANK CARS FOR TRANSPORTATION OF BRANDY FROM FRUIT DISTILLERIES TO WINERIES

PAR. 266. *Tank facilities.*—Brandy may be transferred from fruit distilleries to the fortifying room of a bonded winery by railroad tank cars where both the distillery and the winery are equipped with suitable railroad siding facilities and where a suitable weighing tank is provided at both the distillery and the winery for use in gauging the brandy and a closed storage tank or tanks of sufficient capacity to hold the brandy are provided within the fortifying room. The transfer of brandy in tank trucks will not be permitted.

PAR. 267. *Application on Form 257.*—Where brandy is to be so transferred, application will be made by the winemaker on Form 257 in the same manner as when brandy is transferred in packages, as prescribed in paragraph 248. The district supervisor will likewise give his order to gauge, as prescribed in paragraph 249, the distiller will indicate the brandy to be gauged, as prescribed in paragraph 250, and the officers designated to gauge the brandy and supervise its deposit within the fortifying room will make their reports of gauge and execute their certificates of gauge and receipt, and dispose of Forms 257, with Forms 1520 attached, as prescribed in Article LIII.

PAR. 268. *Markings on tank car.*—Each railroad tank car used to transport brandy must have permanently and legibly marked or painted thereon its number, capacity in wine gallons, and name of the owner, and must be so constructed that all openings may be securely locked, and no such tank car may be used for the transportation of brandy unless it is so locked.

PAR. 269. *Locks and seals.*—Slaight locks to be furnished by the shipper, and seals for the same, by the Government, will be used for this purpose and will be attached as soon as the car is filled. The key of each Slaight lock so used will be forwarded on the day of shipment by the Government officer at the distillery to the Government officer at the winery. All locks and keys in such cases will be returned by the officer at the winery to the distillery from which the brandy was shipped. In cases where no officer is assigned at the winery regularly when the brandy is shipped, the district supervisor will direct the keys to be forwarded to him.

PAR. 270. *Inspection of car.*—In making application for removal from distilleries by railroad tank car, the winemaker will state on the application, Form 257, that the brandy is to be transported by railroad tank car. The storekeeper-gauger at the distillery, upon receiving the order to gauge, will first inspect the car to see that the dome may be locked with a Government seal lock when closed and that all other openings to or from the car may be closed and locked in like manner. If the car is not so constructed, the officer will communicate with the district supervisor and await instructions relative to its use.

PAR. 271. *Gauge of brandy by weight.*—All brandy shipped in railroad tank cars will be gauged by weight in a suitable weighing tank in the distillery before being run into the tank car. The tank car must be filled in the immediate presence of the Government officer. The pipe line or hose connection from the distillery weighing tank to the tank car must be in full view of the officer and must not be connected or used except in his presence. The officer will lock and seal the car as soon as it is filled. The officer will enter on Form 1520, covering the gauge of the brandy, the name of the owner and the serial number of the car, the serial number of the lock seal or seals, the destination, and the date of shipment; for example: "Withdrawn by U. P. tank car No. 1643, lock seal No. 36457, for transfer to winery No. 46, Los Angeles, Calif., for fortification of wine. Billed out 4:30 p. m. September 10, 1936."

PAR. 272. *Certificate to be attached.*—When brandy is shipped in bond in a railroad tank car to a winery for fortification of wine, a certificate, dated and signed by the Government officer, showing that the brandy is shipped in bond for fortification and giving the name, registered number, and location (city or town and State) of the distillery from which shipped, and the winery to which shipped, shall be securely attached to some conspicuous and secure place on the tank car where it may be readily examined by Government officers. The certificate will be in substantially the following form:

Shipped in bond by
CALIFORNIA GRAPE COMPANY
F. D. No. 80, St. Helena, Calif., 14th Dist.
to
WESTERN WINE COMPANY
B. W. No. 50, Santa Rosa, Calif., 14th Dist.
For fortification of wine.

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(Date) (Storekeeper-Gauger)

This certificate will be scraped and obliterated immediately the tank car is emptied.

PAR. 273. *Examination of car on arrival at winery.*—Upon arrival of the tank car at the winery, the seals must not be broken or any brandy removed except in the presence of the Government officer, who will first carefully examine the car to see whether the lock and seal are intact and whether there is any evidence of loss by leakage or otherwise. If the lock or seal is found to have been broken or if there is other evidence that the contents of the car have been tampered with, the officer will immediately communicate with the district supervisor, and, except in cases of emergency, await instructions before permitting the car to be unloaded. When a tank car is unloaded, the contents will be pumped into the weighing tank in the fortifying room of the winery, where the brandy will be gauged and transferred to storage tanks in the fortifying room. The transfer of the brandy from the tank car to the fortifying room must be done in the immediate presence of the Government officer. The pipe line or hose connection from the car to the receiving tank must be in full view of the officer and must not be connected or used except in his presence.

PAR. 274. *Report on Form 1520.*—The officer at the winery will prepare Form 1520 covering his gauge of the brandy and will enter on the form the name of the owner and the serial number of the car, the serial number of the seal or seals, the number of the distillery from which shipped, whether the seal or seals have been broken and whether there was any evidence of leakage; for example: "Received 11 a. m. September 12, 1936, U. P. car No. 1643, lock seal No. 36457 unbroken, from fruit distillery No. 412, Los Angeles, Calif.; car in good condition." One copy of this Form 1520 will also be attached to each copy of Form 257.

PAR. 275. *Deficiency or loss in transit.*—If the gauge at the winery discloses a deficiency or loss in transit, the Government officer will enter the amount of the shortage on his certificate of receipt on Form 257 and will attach a statement to the form setting forth fully the apparent cause thereof.

ARTICLE LVI—MANNER OF PROCURING BRANDY FROM BONDED WAREHOUSES

PAR. 276. *Application on Form 257.*—Where it is desired to procure brandy from an internal revenue bonded warehouse, the winemaker must make application on part 2 of Form 257 to the district supervisor of the district in which the winery is situated. The application shall be filed in quadruplicate where the winery and the warehouse are in the same supervisory district, and in quintuplicate where they are in different districts. A separate application must be made for each lot of brandy which it is desired to procure.

PAR. 277. *Supervisor's order to regauge.*—If the application is in proper order and the bond of the winemaker, computed as prescribed by paragraph 51, is sufficient to cover the brandy to be procured, the district supervisor will, (1) where the warehouse is located in another supervisory district, execute part 3 of the Forms 257 and forward all five copies to the district supervisor of such district, who will in turn execute part 4 of the forms and deliver all five copies to the officer designated to regauge the brandy, (2) where the warehouse is in the same district, execute parts 3 and 4 of the forms and deliver all four copies to the officer designated to regauge the brandy.

PAR. 278. *Report of gauge.*—The Government officer receiving the order to regauge will deliver all copies of Form 257 to the proprietor of the warehouse, who will execute the warehouseman's notice of the packages to be gauged on part 5 of all copies of the form and return them to the officer. The packages will then be regauged and the required withdrawal marks placed thereon. The officer will enter in detail the regauge of each package on Form 1520, one copy of which he will securely attach to each copy of Form 257. No greater quantity of brandy may be regauged or withdrawn than stated in the order.

PAR. 279. *Tax on excess losses.*—Where the regauge of the packages discloses excess losses, the proprietor of the warehouse will forward all copies of Form 257, with Form 1520 attached, to the collector of internal revenue, with his remittance to cover the tax due on such excess losses. The collector will certify to the payment of the tax on all copies of the form, retain one copy, and return the other copies to the proprietor of the warehouse, who will deliver them to the Government officer.

PAR. 280. *Certificate of gauge.*—The Government officer will, upon withdrawal of the brandy, execute his certificate of gauge on part 6 of all copies of Form 257, retain one copy, and immediately forward the other copies to the winemaker, who will present them to the officer at the winery as a voucher for deposit in the fortifying room. When the packages are received at the winery, the officer will satisfy himself that the brandy offered for deposit is the same as that described in Form 257 and the attached Form 1520, and will supervise its deposit within the fortifying room. He will gauge any packages which appear to have been tampered with, or from which brandy appears to have been abstracted or lost. The details of packages gauged will be reported on Form 1520, with a statement setting forth fully the apparent cause of the loss. An extra copy of such Form 1520 will be attached to each copy of Form 257. After the brandy has been deposited within the fortifying room, and any necessary gauging performed, the officer will execute his certificate of receipt on part 8 of all copies of Form 257.

PAR. 281. *Filing of Form 257.*—Upon deposit of the brandy in the fortifying room, the officer will retain one copy of Form 257, with Form 1520 attached, at the winery as a permanent record, and forward the other copy or copies of Form 257 similarly completed, to the district supervisor, who will, in cases where the brandy was withdrawn from a warehouse in another district, forward the extra copy to the district supervisor of such district.

PAR. 282. *Tank cars.*—Where an internal revenue bonded warehouse is located on the premises of a fruit distillery and brandy produced at the distillery and eligible for use in fortification is stored in storage tanks in the warehouse, such brandy may, pursuant to application on Form 257, be transferred therefrom to the fortifying room of a bonded winery by means of railroad tank cars under the same conditions as those which govern such transfers direct from the distillery.

PAR. 283. *Pipe lines.*—Where an internal revenue bonded warehouse is located on the premises of a fruit distillery and such warehouse, or a room thereof separated from the remainder of the building by a solid unbroken partition, or a separate building constituting a part of such warehouse premises, is used solely for the storage of brandy produced at such distillery, such brandy may, pursuant to application on Form 257, and under the same conditions as those which govern the transfer of brandy by pipe line direct from a fruit distillery to the fortifying room of a winery operated on contiguous premises by the same person, be transferred by pipe line from storage tanks in such warehouse or in such separate room or building to the fortifying room of a bonded winery on contiguous premises operated by the same person operating the distillery and the warehouse.

ARTICLE LVII—PROCESSES OF FORTIFICATION OF WINE

PAR. 284. *Application on Form 276.*—When the winemaker desires to begin fortification of wine he will make application on part 1 of Form 276, Fortification of Wine, in quadruplicate, to the district supervisor for the assignment of an officer to supervise fortification of the wine, except that where the district supervisor has assigned an officer to the winery and authorized him to supervise fortification upon application of the winemaker, Form 276 will be filed directly with such officer. A separate application will be made for each month in which it is desired to fortify wine.

PAR. 285. *Action by district supervisor.*—If the application is properly prepared and the winemaker's notice of intention to fortify wine, Form 605, has been filed with the district supervisor, and the use of a pipe line for the transfer of brandy has been approved, and the winemaker has procured or been authorized to procure brandy to fortify the wine, the district supervisor will, except in cases where the application is filed directly with a designated officer, as provided in paragraph 284, execute part 2 of the form and deliver all four copies to the officer designated to supervise fortification.

PAR. 286. *Inspection by Government officer.*—The officer who received the order to supervise fortification will inspect the fortifying room and equipment, and the brandy and wine to be used in fortification, to determine whether the same are in legal condition as required by these regulations. He will examine the packages of brandy and any brandy in storage tanks to see that the same corresponds with that shown on Forms 257 on file at the winery. If any irregularity is found, the officer will immediately communicate with the district supervisor and await instructions before permitting fortification. The officer will proceed in a similar manner in cases where he has been authorized to supervise fortification upon application of the winemaker, without prior approval of the Form 276 by the district supervisor.

PAR. 287. *Transfer of wine to fortifying room.*—When it is desired to transfer wine to the fortifying room for fortification, the officer will see (1) that the tank bears a label, Form 546, properly identifying the wine; (2) that according to the label the wine is eligible for fortification; (3) that the wine apparently corresponds with the label; and (4) that the wine appears in all respects to be eligible for fortification. (See Article XXI.) If the wine appears to be eligible for fortification, it will be transferred to the fortifying room and tested by the officer for alcoholic content. After testing the wine for alcohol, the officer will calculate the quantity of brandy required to fortify the wine to the

alcoholic strength desired. Wines may not be fortified above 24 per cent by volume, including both the natural and added alcoholic content, as such wines are classed as distilled spirits by section 611 of the Revenue Act of 1918, as amended.

PAR. 288. *Testing and labeling fortified wine.*—Sweetening agents, if any are used, may be added only prior to fortification. After the sweetening agents, if any, have been added to the wine, and the brandy and wine have been run into the fortifying tank, the contents must be thoroughly mixed by plunging or otherwise by the winemaker. In mixing wine and brandy in the fortifying tank, the winemaker may run the wine into the tank first, or, if he so desires, he may run the brandy into the tank first. After it has been completely mixed, the officer will test the wine for alcoholic content, and ascertain the quantity. He will also take a one-pint sample of the wine, seal the same, and attach Form 491, Label for Sample Bottle of Wine, to the bottle. The officer will enter on the label the alcoholic content of the wine as shown by his test, the date of fortification, etc. These samples will be retained in the fortifying room and at the close of the month or upon completion of fortification for the month, the officer will forward two of the samples, representing fortifications at different periods of the month, to the nearest Bureau branch laboratory for testing. Where not over three lots of wine have been fortified during the month, but one sample need be sent to the chemist. If the chemist's analysis indicates that the tests made at the winery were incorrect, he will advise the district supervisor, who will have the instruments used by the officer tested to determine whether they are inaccurate or whether the tests were improperly made by the officer. The samples not used for testing purposes will be held in the fortifying room for a period of six months, after which they may be returned to the winemaker.

PAR. 289. *Refortification.*—If the winemaker does not have sufficient brandy on hand to complete the fortification of a given lot of wine, the wine may, if desired, be partially fortified and held in the fortifying room for further fortification. In making a refortification of wine the Government officer will test the wine for alcohol before the wine is refortified, and compare the results of such tests with the tests of the same wine as shown by the report on Form 275 on which the partial fortification was reported. If the comparison of tests discloses discrepancies of a nature indicating that the wine was tampered with since its partial fortification, the officer will report the facts to the district supervisor and await instructions before permitting the wine to be refortified. If the wine is refortified, the discrepancies found will be reported on the Form 275 on which the refortification is reported. Where discrepancies not of a serious nature are disclosed, and the wine is refortified without first reporting the facts to the district supervisor, the discrepancies will likewise be entered on Form 275. The last test will be made the basis of the refortification. The data reported in the original fortification, as well as the refortification, must be entered on the Form 275, thus making a double report.

PAR. 290. *Daily report on Form 275.*—Each day wines are fortified, the officer supervising fortification will make report thereof on Form 275, in duplicate, giving all the information called for in the form, as indicated by the headings of the various columns and lines and the instructions printed on the form. The officer will retain one copy of the form at the winery as a permanent record and at the close of the day forward the other copy, with Form 546 attached, to the district supervisor.

PAR. 291. *Losses.*—Each day wines are fortified the officer will also enter on Form 276 the information called for on that form, as indicated by the headings of the various columns and lines and the instructions printed on the form. Where losses have been sustained, the officer will attach a statement to each copy of the form, giving the serial numbers of the packages from which loss has been sustained, the quantity lost from each package, and the apparent reason for the loss. At the close of the month, or upon completion of fortification for the month, the officer will complete the form, retain one copy at the winery as a permanent record, and forward one copy to the collector of internal revenue of the district, and the other two copies to the district supervisor, who will transmit one copy to the Commissioner with his Brandy Account, Form 290.

ARTICLE LVIII—GAUGE OF BRANDY IMMEDIATELY PRIOR TO USE IN FORTIFICATION

PAR. 292. *Report of gauge on Form 1520.*—Brandy used in fortifying wine will be carefully gauged by the officer just prior to use. The detail of the gauge will be reported on Form 1520, one copy of which will be attached to each copy of the officer's daily report, Form 275. A separate report on Form 275 will be made for each kind of wine fortified.

PAR. 293. *Losses.*—The officer will call the winemaker's attention to all deficiencies in excess of 1 proof gallon on any package, and, if the winemaker so desires, will regauge the package in the winemaker's presence. Where the officer's gauge indicates that a package may have been tampered with, as where a material deficiency is found and there is no evidence of loss by leakage or casualty, or where deterioration in proof not accountable for by variation in gauge is disclosed, the officer will immediately notify the district supervisor of all the facts in the case and will not permit the package to be used until he is instructed to do so by the district supervisor.

PAR. 294. *Tax on losses.*—No provision is made in the law for relief from tax on losses of brandy in the fortifying room of a bonded winery except on losses of grape brandy by casualty as provided in Article LIX. Tax must be paid on all deficiencies, except deficiencies of grape brandy due to casualty.

ARTICLE LIX—LOSSES OF BRANDY

PAR. 295. *Losses in transit.*—The tax may be remitted on brandy which is withdrawn for the fortification of wine, and which is lost by theft, accidental fire, or other casualty in transit to the winery while in possesion of a common carrier subject to the Transportation Act of 1920 or the Merchant Marine Act of 1920, to the extent that the winemaker is not indemnified against or recompensed for the tax on the brandy lost.

PAR. 296. *Losses in fortifying room.*—The tax may likewise be remitted on grape brandy which is withdrawn for fortification of wine and which prior to use is accidentally destroyed by fire or other casualty while stored in the fortifying room on the winery premises to the extent that the winemaker is not indemnified against, or recompensed for, the tax on the brandy lost.

PAR. 297. *Claims for losses.*—Allowance for losses of any brandy by theft or casualty in transit while in possession of a common carrier, and for losses of grape brandy by casualty while stored in the fortifying room, will be made pursuant to claim filed by the winemaker under oath for remission of tax on the brandy lost. Such losses must be reported to the district supervisor of the district in which the winery is located immediately after they are discovered. Claims for remission of tax on the brandy lost should be filed with the district supervisor within 30 days after the loss is discovered. The claims must set out all the material facts and circumstances relating to the loss, and particularly the nature, cause, and extent of the loss. The claims must state whether the winemaker is indemnified against or recompensed for the tax on the brandy lost.

PAR. 298. *Supporting statements.*—Claims for losses in transit must also set out the name of the carrier and whether such carrier was at the time of the loss subject to the Transportation Act of 1920 or the Merchant Marine Act of 1920; whether claim has been or will be filed against the carrier for the loss; and must, whenever obtainable, be supported by statements of the proper railroad or steamship officials having personal knowledge of the loss. Claims

for losses in the fortifying room must likewise be supported by affidavits of parties having personal knowledge of the loss.

PAR. 299. *Insurance on losses.*—If the brandy lost was insured or claim is made against the carrier, the amount of the insurance or claim against the carrier, or both, and the actual value of the brandy, less the tax, must be stated explicitly.

PAR. 300. *Report of losses.*—When losses of brandy by theft or casualty in transit are ascertained at the time the packages are received at the winery, or where losses by casualty in the fortifying room are ascertained while an officer is on duty, the officer will immediately make a full report of the loss to the district supervisor. The officer's report must set out the nature, cause, and extent of the loss in sufficient detail to bring out all the known, material facts and circumstances surrounding the loss. The condition of each package from which loss has been sustained and the quantity lost therefrom must be reported by the officer.

PAR. 301. *Investigation by district supervisor.*—Where large losses from theft, casualty, or other cause are reported, the district supervisor will immediately make such investigation and require such evidence to be submitted as he may deem necessary and will advise the Commissioner of his findings and recommendations relative to allowance or disallowance of the loss.

PAR. 302. *Reports to Commissioner.*—When an application for remission of tax is received by the district supervisor, he will carefully examine the same and cause such investigation to be made or require such additional evidence to be submitted as he may deem necessary and will forward the application to the Commissioner, together with a statement setting out his recommendation and his reasons therefor, as expeditiously as possible. The district supervisor will also transmit to the Commissioner with the claim copies of any reports of investigation of the loss submitted by the Government officers.

ARTICLE LX—WINEMAKER'S BRANDY AND SACCHARINE REPORT

PAR. 303. *Form 261*—Each month that brandy is withdrawn, or brandy or sweetening agents are on hand, received, or used, the winemaker will render monthly report on Form 261, giving all the information called for in the form. The entries must be made by the winemaker or by his agent from personal knowledge or data furnished by the winemaker.

PAR. 304. *Preparation of report.*—The form must be subscribed and sworn to by the winemaker or his duly authorized agent. Where the form is signed by an agent, he must have proper power of attorney authorizing him to execute the reports for the winemaker filed with the district supervisor.

PAR. 305. *Filing of report.*—One copy of the form will be retained at the winery by the winemaker as a permanent record, subject to inspection by Government officers at any reasonable hour. On or before the 10th day of the succeeding month, the winemaker will forward two copies of the form to the district supervisor, who will transmit one copy to the Commissioner with his brandy account, Form 290.

PAR. 306. *Audit of reports.*—Before the brandy account, Form 290, is prepared, the correctness of the winemaker's report, Form 261, will be verified by check against the Government officer's reports on Forms 257, 275, and 276. After auditing the reports the following must be stamped thereon and dated and signed by the auditing clerk:

Audited,_____, _____.
Clerk Date

ARTICLE LXI—DISTRICT SUPERVISOR'S ACCOUNT

PAR. 307. *District supervisor's account on Form 290.*—District supervisors will render a monthly account on Form 290 of brandy received and used at wineries in their districts. This account will be prepared from data obtained from Forms 261 after such forms have been audited as provided in paragraph 306.

PAR. 308. *Filing of accounts.*—These accounts will be prepared in duplicate and by States within the district. One copy will be retained by the district supervisor and one copy forwarded, not later than the last day of the month succeeding that for which rendered, to the Commissioner, together with copies of Form 261 and Form 276.

ARTICLE LXII—TAX ON BRANDY USED TO FORTIFY WINE

PAR. 309. *Rate of tax.*—The law provides that there shall be levied and assessed against the winemaker a tax of 10 cents per proof gallon on brandy used in the fortification of wine, and that such tax shall be paid within 18 months from the date of notice of the assessment.

PAR. 310. *Assessment.*—Upon receipt of copy of Form 276 from the Government officer at the close of the month, collectors of internal revenue will enter on the distilled spirits list the brandy fortification tax shown due by such form.

PAR. 311. *Collector to notify district supervisor.*—In order that delay in assessing the brandy fortification tax may be avoided, collectors of internal revenue will advise district supervisors of the list, page, and line immediately after an item of brandy fortification tax is entered on the assessment list. District supervisors will note such list, page, and line on their copy, and on the Commissioner's copy of Form 276. If the district supervisor has not received such advice from the collector of internal revenue before the 25th day of the month succeeding that during which brandy was reported on Form 276 as used in fortification, he will promptly make inquiry of the collector of internal revenue in regard to the matter, and, if necessary, will supply the collector of internal revenue with copy of Form 276 for use as the basis for entering tax for assessment. Where the collector of internal revenue has not advised the district supervisor of the list, page, and line on which the assessment has been entered, when copies of the reports and accounts are ready for forwarding to the Commissioner, the district supervisor will note on the Form 276, "Notice of entry of assessment not received."

PAR. 312. *Notice of assessment.*—Immediately upon receipt from the Commissioner of Internal Revenue of the assessment list containing the item, the collector will make demand upon the winemaker for the amount of the tax, specifying in the Form 17, Notice and Demand For Tax, that the tax is payable within 18 months from the date of the notice.

PAR. 313. *Assessment of tax on deficiencies.*—Collectors will also enter on their list for assessment any tax due on deficiencies shown on Form 276. Where the form indicates that the deficiency is due to theft or casualty in transit or, in the case of grape brandy, to casualty in the fortifying room, the collector will not enter on his list the tax thereon, pending consideration of the winemaker's claim for remission of tax. If, after consideration of such claim, the tax is found to be due, it will be entered on the assessment list by the Commissioner of Internal Revenue. (See also Articles LVIII and LIX relative to tax on losses of brandy.)

ARTICLE LXIII—TAX-FREE USE OF BRANDY FOR FORTIFICATION OF WINES USED FOR MANUFACTURE OF VINEGAR OR DEALCOHOLIZED WINES

PAR. 314. *Claim for abatement or refund of fortification tax.*—Where wines fortified under the provisions of section 612 of the Revenue Act of 1918, as amended, are removed for the manufacture of vinegar, or the production of dealcoholized wines containing less than one-half of 1 per cent of alcohol by volume, the tax on the brandy used to fortify the wines will be abated or refunded upon the filing of proper claim by the producer of the wines, supported by evidence clearly establishing the quantity, in proof gallons, of brandy added in fortification to the wine so removed.

PAR. 315. *Alcoholic content shown by the records.*—Because of the variation in alcoholic content of wines both before and after fortification and in the quantity of brandy added to wines in fortification, and because of the mixing

of different wines by blending, the winery records pertaining to the fortification, storage, and removal of fortified wines for the manufacture of vinegar or dealcoholized wines must clearly show the alcoholic content of the wines both before and after fortification, and the quantity in proof gallons of brandy added to the wines in fortification. This information must be noted on Form 275 and Form 702 as to all fortified wines removed for the manufacture of vinegar or dealcoholized wines. Such wines must be stored in separate tanks, packages, or other containers, kept completely separated from other wines, and a label containing this information must be attached to the containers of the wine.

ARTICLE LXIV—PENALTIES FOR UNLAWFUL RECOVERY OF BRANDY FROM FORTIFIED WINE

PAR. 316. *Penalty and forfeiture.*—Section 620 of the Revenue Act of 1918, as amended, provides that any person who by any process recovers or attempts to recovery brandy from fortified wines, except as provided by law and regulations, shall, on conviction, be punished for each such offense by a fine of not exceeding $5,000 or imprisonment for not more than five years, or both, and all wines, spirits, liqueurs, cordials, or similar compounds as to which such violation occurs shall be forfeited to the United States.

PART 3—INSTRUCTIONS FOR TESTING AND MEASURING WINES AND CONTAINERS

ARTICLE LXV—INSTRUCTIONS FOR TESTING WINE

PAR. 319. *Apparatus.*—Wine sets consist of 1 thermometer, 3 saccharometers, graded to read from 0 to 10, 10 to 20, and 20 to 30, 2 alcoholometers graded in the same way, 1 glass cylinder with rubber stopper, 1 copper still, condenser, and stand, with 3 feet of rubber tubing, and a rubber apron to spread over the box while making the test.

PAR. 320. *Samples.*—The sample taken for analysis must be truly representative of the whole volume of the wine in the tank from which it is taken.

PAR. 321. *Care of instruments.*—The instruments to be used must be perfectly clean and should be washed with clean water and thoroughly dried before and after making the tests. A small bit of grease on the spindle or on the surface of the liquid tested will destroy the efficiency of the tests. Instruments should not be handled more than is absolutely necessary, and when picking up the hydrometers they should be held by the upper part of the spindle so as to avoid soiling with the natural oil of the hands that part of the instrument which will be immersed in the liquid when the readings are taken.

PAR. 322. *Test for alcohol.*—Fill the cylinder exactly to the upper mark with the liquid to be tested, lift out the tray holding the hydrometers, and remove the still, etc. Spread the apron over the case, connect the stand, and place the alcohol lamp and still in position. Note the temperature of the liquid in the cylinder and empty it into the still, letting it drain as completely as possible; then fill the cylinder with water to the lower mark, rinse it about, and pour the rinsings into the still. Close the still, connect the condenser, and attach the rubber tube to it to carry away the water; insert the tail of the worm into one of the holes of the rubber stopper and place the stopper in the mouth of the cylinder into which the distillate will flow; fill the condenser with water, which should never be permitted to go above 80° F., and must be kept circulating; light the lamp under the still and continue the distillation at as low a temperature as possible to avoid frothing or priming and until nearly the original volume taken has been collected in the cylinder. Too rapid distillation will result in the loss of alcohol because of imperfect condensation. As soon as the distillation is complete, disconnect the worm of the still from the cylinder, insert the thermometer through the hole in the stopper, and bring the distillate to the same temperature as noted before distillation; remove the stopper, add enough water of the same temperature to fill the cylinder exactly to the upper mark, place the palm of the hand over the mouth of the cylinder, and slowly invert the same a few times to blend the water and distillate and then immediately plunge the alcoholometer in the cylinder and note the indication. Finally, correct the reading according to Table IV to ascertain the true per cent of alcohol. The rubber stopper must be kept in the mouth of the cylinder from the time distillation is commenced until ready to take the reading of the alcoholometer to prevent loss of alcohol by evaporation.

PAR. 323. *Test for sugar.*—The test for saccharine or sugar will be made in the following manner: Pour the residue left in the still after distillation into the cylinder, rinsing the still with a little water a few times to obtain all of the residue contained therein, and empty the rinsings into the cylinder, taking care that none of the residue or rinsings are spilled or lost. Fill the cylinder nearly to the upper mark with water and place the palm of the hand over the mouth of the cylinder and slowly invert the same several times until the liquid is thoroughly mixed and bring the temperature to the exact degree noted in the sample before distillation, then fill the cylinder up to the upper mark with water of the same temperature and take the reading of the saccharometer and make the corrections according to Table III.

PAR. 324. *Verifying tests.*—The above instructions will be followed in all tests made when the wine or must to be tested has fermented and in the tests before and after fortification. The greatest care must be taken in making the tests in order to get correct results.

Use of Salleron-Dujardin Ebullioscope

PAR. 325. *Apparatus.*—This set of instruments shall consist of 1 Salleron-Dujardin ebullioscope with reflux condenser, 1 rule with sliding scale for determining the alcohol, 1 alcohol lamp, 1 standardized centigrade thermometer, 1 glass cylinder graduated to read 15 c. c., 25 c. c., and 50 c. c., for accurately measuring the sample to be tested, and 1 plain or mixing glass cylinder of not less than 75 c. c. capacity.

PAR. 326. *Determination of alcohol.*—Pour 15 c. c. of distilled water into the ebullioscope, insert the thermometer, and bring the water to the boiling point. When the mercury becomes stationary, note the temperature and adjust the sliding scale on the rule so that the line indicating the temperature noted will be exactly parallel with the zero mark on the left-hand side of the rule. Now remove the thermometer and empty the water and rinse the ebullioscope thoroughly with wine.

PAR. 327. *Tests before fortification.*—In testing wine before fortification no dilution will be necessary unless the sugar content is more than 6 per cent. If the sugar content is between 6 per cent and 12 per cent dilute with an equal proportion of distilled water, and if above 12 per cent, dilute with twice as much water as wine. In making dilutions care must be taken to get the exact proportions. Take 50 c. c. of the wine to be tested and pour it into the ebullioscope, fill the reflux condenser with cold water, insert the thermometer, and bring the sample to the boiling point. When the mercury in the thermometer becomes stationary and the reading noted, refer to the rule, and the reading on the right-hand side parallel with the line on the sliding scale, indicating the temperature noted, will be the alcoholic content of the wine tested, which, if diluted, should be multiplied by 2 or 3, according to the ratio of water used.

PAR. 328. *Tests after fortification.*—In testing wine after fortification proceed as above except as to the dilution. The sample to be tested should not be more than 6 per cent saccharine nor 11 per cent alcohol, as when higher than this errors are likely to occur, owing to the closeness of the lines on the lower part of the rule.

Examples in determining the alcohol: If the boiling point of the water is found to be 100.2 and the boiling point of the wine is found to be 91.5, the percentage of the alcohol in the wine is 12 per cent; if the boiling point of the wine is found to be 92.1, the percentage of the alcohol is 10.85 per cent, and if the boiling point of the wine is 93.6, the per cent of alcohol is 8.3.

PAR. 329. *Determination of saccharine.*—Pour some of the wine reserved for analysis into one of the cylinders, carefully plunge the proper saccharometer stem into the liquid and note the reading. Withdraw the stem, insert the thermometer, and note the temperature of the wine.

If this temperature is other than 60° F., correct the saccharometer-stem reading according to Table III. Then refer to Table IV to ascertain the specific gravity at the corrected indication, and find the specific gravity of the alcohol shown by the ebullioscope by reference to Table V. Subtract the specific gravity of the alcohol from the specific gravity of the wine and to the remainder add 1 for the weight of the water and the result will be the specific gravity of the wine had it been dealcoholized by the Salleron still. Referring again to Table IV, the per cent of solids (saccharine) will be indicated by the amount of the specific gravity, e. g., should the saccharometer stem when dropped into the wine indicate 6 per cent, by referring to Table IV we find the specific gravity to be 1.0232, and if the ascertained alcohol be 12 per cent, by reference to Table V it will be found that the specific gravity is 0.98435. Subtracting the specific gravity of the alcohol, 0.98435 from the specific gravity of the wine, 1.0232, leaves 0.03885, and by adding 1 the result is 1.03885, the specific gravity of the dealcoholized wine. Turning again to Table IV, it will be noted that this specific gravity would indicate solids (saccharine) to the extent of 9.90 per cent Balling.

PAR. 330. *Use of alcohol stem.*—Should the saccharine stem not register, use the alcohol stem instead and find the specific gravity by Table V, and proceed as above, e. g., the lowest saccharometer failing to register, the alcoholmeter is used instead, and the indication is 10.5 and the temperature 70° F. The correction for temperature is 0.95, as found by Table VI, or 9.55 per cent alcohol. The specific gravity by Table V for 9.55 per cent is 0.98713. The alcohol found by the ebullioscope is 12.55 per cent, and the specific gravity of which is 0.98375. Subtracting 0.98375 from 0.98713 and adding 1 for the specific gravity of the water gives the result of 1.00338, the specific gravity of the dealcoholized wine. By Table IV this specific gravity equals 0.89 per cent Balling.

PAR. 331. *Notation on Form 275.*—If the ebullioscope is used in making the tests, the officer should so state on his daily report, Form 275, and on the label, Form 491.

Directions for Operating Juerst's Ebulliometer

PAR. 332. *Determination of the boiling point of water.*—Rinse the instrument twice with ordinary water. In doing so pour an approximate glass tube full of water through one of the openings into the ebulliometer. Take the instrument in your left hand and close the two openings on top of the instrument with the index and middle finger, shake slightly and empty. Now measure in the glass tube as much water as is indicated by the mark and pour it into the ebulliometer. Fasten the empty condenser to the ebulliometer. Place the thermometer into the opening in front of the condenser. The lamp, which is to be filled with ordinary denatured alcohol, is now lit and put under the instrument. In order to protect the thermometer from heat, the little shield should always be fastened to the top of the heating tubes. Within about eight or nine minutes the mercury in the thermometer commences to rise. When the water boils and steam comes out of the top of the condenser watch the thermometer until the mercury remains stationary. The temperature at which the water boils is then noted.

PAR. 333. *Determination of the boiling point of the beverage.*—After the boiling point of the water has been determined, remove the thermometer, empty the ebulliometer, drain it through the draining cock and blow out any liquid which may have remained in the condenser and in the instrument. Now rinse the ebulliometer twice with a glass tube approximately full of the beverage which is to be tested for alcohol.

Drain the instrument through the draining cock. Now measure in the glass tube as much of the beverage (which latter must be well decarbonated) as is indicated by the mark and pour it into the ebulliometer through the thermometer opening. Insert the thermometer. Fill the condenser with ordinary faucet water. Light the alcohol lamp. When the mercury remains stationary, which will be after 10 to 12 minutes from the time the alcohol lamp has been lit, the temperature is read off again and noted. Usually the time for reading the temperature of the thermometer has arrived when the lower cylindrical part of the condenser has become warm.

PAR. 334. *Reading thermometer.*—The thermometer is divided in 13 degrees. Every degree is subdivided in twentieth degrees or in other words in five one-hundredths of a degree.

PAR. 335. *Reading alcohol tables.*—Example: The boiling point of the water was found to be at 9.85 and the boiling point of the beverage 7.50.

Subtract the one figure from the other and look up the percentage of the alcohol in Table VII.

For instance:

9.85 (boiling point of the water).
—7.50 (boiling point of the beverage).

2.35 (Difference between the two boiling points).
2.35=2.51 per cent alcohol by volume.
=or 1.998 per cent alcohol by weight.

Directions for Operating Lefco Ebulliometer

PAR. 336. *Determination of the boiling point of water.*—Fill the lamp with denatured alcohol. Rinse the ebulliometer boiler with water by pouring it through the thermometer opening. Measure in the glass tube the quantity of water indicated by the graduation and pour it into the ebulliometer. Place the thermometer in position. Light the lamp and place it under the small tube. Within about eight or nine minutes the mercury in the thermometer commences to rise. When the water boils and the mercury becomes stationary read the thermometer; it is the boiling point of the water. Leave water out of condenser jacket while determining the boiling point of water.

PAR. 337. *Determination of the boiling point of wine.*—Open the cock, empty the boiler, rinse it with some of the wine to be tested, and blow out any remaining liquid in the condenser and instrument. The procedure then is the same as given in paragraph 336 for determining the boiling point of water except that in this case water is used in the condenser jacket. If the wine contains more than 20 per cent alcohol it is best to dilute it with a known proportion of water subsequent to testing, and correct the result for dilution.

PAR. 338. *Directions for reading alcohol tables.*—Determine the boiling point of the water. Determine the boiling point of the alcohol mixture. Should the observed boiling point of water be greater than 100° C., subtract 100° from this boiling point. Subtract this difference from the observed boiling point of the alcohol mixture. This is the corrected boiling point of the mixture.

Example: Boiling point of water=100.50° C.

100.50°—100.00°=0.50° C.
Observed boiling point of the alcohol mixture=97.70° C.
97.70°—0.50°=97.20° C. the corrected boiling point of the mixture.
97.20° C.=3.06 per cent alcohol by volume and 2.43 per cent alcohol by weight. (See Table VIII.)

Should the observed boiling point of water be less than 100° C., subtract this observed boiling point from 100.00° C. Add this difference to the observed boiling point of the alcohol mixture. This is the corrected boiling point of the mixture.

Example: Observed boiling point of water=99.70° C.

100.00° C.—99.70°=0.30° C.
Observed boiling point of the alcohol mixture=96.30° C.

96.30°+0.30°=96.60° C. the corrected boiling point of the mixture.

96.60° C.=3.74 per cent alcohol by volume and 2.97 per cent alcohol by weight. (See Table VIII.)

CARE OF EBULLIOMETERS

PAR. 339. *Care of apparatus.*—Keep the instrument in perfectly clean condition. Always rinse the ebulliometer with water after using. Always determine the boiling point of the water first.

PAR. 340. *Determining boiling point.*—Since the atmospheric pressure changes from day to day and sometimes during the day, the boiling point of the water and that of the beverage is dependent thereon.

It is, therefore, necessary to determine the boiling point of the water every day, when it is desired to make an alcohol determination.

If the ebulliometer is used continually during the day, the boiling point of the water should be determined from time to time.

PAR. 341. *Use of two ebulliometers.*—Much time may be saved and still greater accuracy may be had with the employment of two ebulliometers, one with which to determine the boiling point of the water and the other with which to determine the boiling point of the alcoholic beverage.

PAR. 342. *Removal of carbonic acid gas.*—It is important that the beverage of which the alcohol is to be determined be thoroughly freed of carbonic acid gas.

PAR. 343. *Dilution of samples before testing.*—If the alcoholic content of the samples being tested exceeds 8 per cent alcohol by volume, the samples should be diluted and the determinations made on the diluted wine. Corrections then should be made in order to obtain the correct percentage of alcohol of the wine before dilution, as per instructions given for the use of the Salleron-Dujardin ebullioscope.

ARTICLE LXVI—DIRECTIONS FOR TAKING SAMPLES OF FORTIFIED WINE AND THEIR DISPOSITION

PAR. 344. *Time of taking samples.*—As provided in paragraph 288 of Part 2 of these regulations, the storekeeper-gauger will take a 1-pint sample from each tank of wine fortified, except partial fortifications. This sample should be taken after the sweetening agents, if any, and brandy have been added and the fortifying tank has been thoroughly plunged to insure complete mixture of the contents. The officer should also make his test for alcohol before taking the sample so that the results thereof may be entered on label, Form 491, to be attached to the bottle.

PAR. 345. *Bottles and labels.*—The bottles used for this purpose must be perfectly clean and drained dry before the wine is placed therein. Rinse the bottles with a little of the wine before filling them; close them with a new and perfect cork and place over the cork a seal of wax; affix to each sample a label, Form 491, properly made out, and signed both by the officer taking the sample and the winemaker or his representative.

PAR. 346. *Forwarding samples.*—Hold the samples in the fortifying room until the close of the month and then forward two of the samples, representing fortifications at different intervals of the month, to the nearest Bureau branch laboratory for testing. Where not over three lots have been fortified during the month, but one sample need be sent the chemist. The other samples will be held in the fortifying room for a period of six months, after which they may be returned to the winemaker. The storekeeper-gauger will be held to a strict accountability for all wine released from the fortifying room by him.

ARTICLE LXVII—METHOD OF DETERMINING THE AMOUNT OF BRANDY TO BE ADDED TO FORTIFY WINES TO THE REQUIRED ALCOHOLIC STRENGTH

PAR. 347. *Formula for determining brandy necessary for fortification.*—After taking the samples for the first test in the fortifying room and the officer is satisfied that the wine is eligible for fortification, the winemaker may add enough of the brandy already gauged for the fortification to the wine to arrest fermentation. Complete the tests and determine the amount of brandy necessary to fortify the wine to the desired alcoholic strength in the following way:

In regard to the amount of brandy or wine spirits to be added, the factors that enter into the problem are: (1) the original alcoholic strength of the wine; (2) the alcoholic strength of the brandy used (this is always one-half of the proof strength), and (3) the resulting alcoholic strength of the mixture. Any two of these being known, the third can be determined. The higher the alcoholic strength of the brandy used the smaller will be the volume of it required to produce any desired alcoholic strength, owing to its containing more alcohol and less water; but in no case should the desired alcoholic strength in the resulting fortified wine exceed 24 per cent. (Par. 287.)

Formula

$$X=\frac{V(C-A)}{B-C}$$

A=the per cent of alcohol by volume in the wine to be fortified;
B=the per cent of alcohol by volume in the wine spirits or brandy to be used in fortifying the wine;
C=the desired per cent of alcohol by volume in the wine after being fortified;
V=the number of wine gallons of the wine to be fortified; and
X=the number of wine gallons of the wine spirits or brandy to be used.

PAR. 348. *Rule for calculation.*—Multiply the number of wine gallons of the wine to be fortified (V) by the difference between its per cent of alcohol by volume (A) and the desired per cent of alcohol by volume in the wine after fortification (C); divide this product by the difference between the per cent of alcohol by volume in the wine spirits or brandy which is used for fortifying (B), and the desired per cent of alcohol by volume in the wine after fortification (C); the quotient (X) will represent the number of wine gallons of the spirits required to produce the desired alcoholic strength in the fortified wine.

Example

How many wine gallons of brandy having a per cent of alcohol by volume of 90 shall be added to 100 gallons of wine having an alcoholic content of 10 per cent by volume to fortify the wine to 20 per cent alcohol by volume?

A=10 per cent
B=90 per cent
C=20 per cent
V=100 gallons.

$$X=\frac{100\ (20-10)}{(90-20)}=14.29 \text{ (nearly) w. g. brandy.}$$

The original alcoholic strength of the wine will depend on how far the fermentation of the sugar present in the must or juice has been allowed to proceed; as a general rule the volume of alcohol in the wine represents twice that amount of sugar (not extract, total solids, or saccharine strength indicated by Balling's saccharometer) present in the original must.

PAR. 349. *Use of Table IX, Appendix.*—The quantity of brandy necessary to fortify a given quantity of wine to a certain alcoholic content may also be ascertained by reference to Table IX, in the Appendix. This table is calculated only for whole per cents of alcoholic strength and the slight contraction due to admixture of alcohol has been disregarded. When upon determining the alcoholic strength of the wine it is found to be a whole per cent plus a fraction, then the next higher whole per cent should be taken; for instance, if the per cent is 10.25, then 11 should be taken. The same rule should be observed in regard to the alcoholic strength of the brandy used. But nothing herein contained should be considered as preventing the employment of the formula and rule given above in calculating the necessary number of wine gallons of brandy to be added.

When the quantity of the wine proposed to be fortified is found by actual gauge to be greater or less than 100 wine

gallons, to ascertain the necessary number of wine gallons of brandy to be added to obtain a desired alcoholic strength, multiply the number of wine gallons of wine by the number found in the appropriate table and column, having first removed the decimal point two figures to the left.

Example

How many wine gallons of brandy having a per cent of alcohol by volume of 75 shall be added to 35 gallons of wine having a per cent of alcohol by volume of 10 to produce a fortified sweet wine having 20 per cent of alcohol by volume?

In Table IX, relative to wine containing 10 per cent of alcohol, opposite the figures 75 in the left-hand margin showing the per cent of alcohol in the brandy, and beneath the figures 20 on the upper margin, showing the desired per cent of alcohol in the wine, will be found the figures 18.18, which show the quantity to be added to 100 gallons of wine. By removing the decimal point two places to the left we have 0.1818, and by multiplying by 35 and taking care to point off four figures in the product for decimals we have 6.36 as the necessary number of wine gallons of brandy to be added:

0.1818
35

9090
5454

6.3630 Answer

In practice the problem would be thus presented: Given 1,000 wine gallons of wine containing 6 per cent alcohol strength, it is desired to fortify it so that the resulting mixture shall contain 17 per cent alcoholic strength. The brandy that is intended to be used for this purpose is marked as follows:

Package	Wine gallons	Proof	Percent alcohol
No. 1	52½	162	81
No. 2	28	156	78
No. 3	27	142	72
No. 4	48	120	60
No. 5	50	178	89

Example

How many wine gallons of these packages, taken in their numerical order, will be needed to fortify the 1,000 gallons of wine?

Referring to Table IX, relative to wine containing 6 per cent of alcohol, under column 17 opposite the respective alcoholic strengths of the brandy, we find as follows: 81 per cent, 17.18; 78 per cent, 18.03; 72 per cent, 20; 60 per cent, 25.58; and 89 per cent, 15.27. Moving the decimal point two figures to the left and dividing the contents of each package by the appropriate decimal we obtain the number of the wine gallons of the given wine that will be fortified to the desired percentage, viz:

According to the table— *1,000.00 gallons.*

Package No. 1. 52½ gallons, at 81 per cent, will fortify $\frac{52.5}{0.1718}$ = 305.58 gallons of wine.

Package No. 2. 28 gallons, at 78 per cent, will fortify $\frac{28}{0.1803}$ = 155.29 gallons of wine.

Package No. 3. 27 gallons, at 72 per cent, will fortify $\frac{27}{0.2000}$ = 135 gallons of wine.

Package No. 4. 48 gallons, at 60 per cent, will fortify $\frac{48}{0.2558}$ = 187.64 gallons of wine.

155½ gallons will fortify 783.51 gallons of wine.

Remaining 216.49 gallons to be fortified.

From the remaining package, No. 5, this will require, according to the table 0.1527×216.49, or 33.06 gallons.

PAR. 350. *Finding the calculated per cent of sugar and alcohol after fortification.*—To find the calculated per cent of sugar or alcohol after fortification, multiply the gallons of wine before fortification by the per cent of sugar or alcohol present in the wine, as shown by the first test, and add the amount of sugar or alcohol added, which in the case of the alcohol will be one-half of the proof gallons of brandy added, and divide the sum found by the gallons of wine after fortification. The result will be the calculated per cent of sugar or alcohol present after the fortification has been completed.

ARTICLE LXVIII—RULES FOR FINDING CAPACITY AND CONTENTS OF ROUND TANKS OF UNIFORM DIMENSIONS, STANDING ON END

PAR. 351. *To find the capacity.*—Ascertain the inside depth of the tank by accurately measuring the same with a rod or steel tape. Ascertain the diameter of the tank (1) by accurately measuring the inside width of the tank with a rod or steel tape, or (2) by measuring the outside circumference of the tank and dividing the same by 3.1416 and deducting from the quotient twice the thickness of the staves or sides of the tank. The result will be the inside diameter of the tank.

After determining the depth and diameter of the tank, multiply the diameter by itself and by the depth and by 0.0034, and the product will be the capacity of the tank in gallons.

Example

What is the capacity of a tank 120 inches in diameter and 100 inches in depth?

120×120×100×0.0034=4,896 gallons capacity

PAR. 352. *To find the capacity per inch of depth.*—The capacity of the tank for 1 inch of depth can be determined by multiplying the diameter by itself and by 0.0034.

Example

What is the capacity per inch of depth of the above tank?

120×120×0.0034=48.96 gallons per inch

PAR. 353. *To find the liquid contents when partly filled.*—When the tank is partly filled, the liquid contents can be determined by ascertaining the depth of the wine in inches and multiplying same by the capacity of the tank for 1 inch of depth. (The depth of the wine can be ascertained by measuring the same with a rod or steel tape or by measuring the dry inches in the tank and subtracting same from the depth of the tank.)

What are the liquid contents of the above tank if the depth of the wine in it is 75 inches?

75 × 48.96 = 3,672 gallons wine in tank

ARTICLE LXIX—RULES FOR FINDING CAPACITY AND CONTENTS OF ROUND TANKS STANDING ON END AND LARGER AT BOTTOM THAN AT TOP, BUT NOT BULGED IN THE MIDDLE

PAR. 354. *To find the capacity.*—Ascertain the inside diameter of the tank at the top and at the bottom and the inside depth of the tank in the manner set forth above. (In ascertaining the depth, the rod or tape should be run straight down and not allowed to follow the course of the staves or sides of the tank.) Add together the square of

the top diameter, the square of the bottom diameter, and four times the square of the midway diameter (ascertained by adding the top and bottom diameters together and dividing by 2), and divide the sum by 6, which gives the square of the true mean diameter; multiply this by the depth of the tank, and the product will be the capacity in cylindrical inches. As there are 294 cylindrical inches in a gallon, divide this last product by 294, and the quotient will be the number of gallons contained in the tank.

Example

What is the capacity of a tank 108 inches in diameter at the top, 120 inches in diameter at the bottom, and 100 inches in depth?

(108+120)÷2=114 inches midway diameter.
(108×108)+(120×120)+(114×114×4)÷6=13008.
(13008×100)÷294=4,424 gallons, capacity of tank.

The following rule is shorter and, though not mathematically correct, is for all practical purposes sufficiently so, unless the tank is much smaller at the top than at the bottom, and may be used in determining the capacity of such tanks:

Add the top and bottom diameters, divide the sum by 2, multiply the quotient by itself and by 0.0034 and by the depth of the tank; the result will be the capacity of the tank in gallons.

Example (Tank as Above)

(108+120)÷2=114 inches mean diameter.
114×114×100×0.0034=4,418 gallons, capacity of tank.

PAR. 355. *To find the capacity for each foot of depth.*—Subtract the top diameter from the bottom diameter, and divide the difference by the depth in inches to get the decrease in diameter for each inch of depth; multiply the quotient by 12, which gives the decrease in diameter per foot; subtract the product from the bottom diameter to get the diameter at 1 foot of depth from the bottom; add the bottom diameter and the diameter at 1 foot from the bottom, divide the sum by 2, multiply the quotient by itself and by 0.0034. The result will be the capacity of the tank for the first foot of depth.

Example (Tank as above)

(120 — 108) ÷ 100 = 0.12 inches, decrease in diameter per inch of depth.
0.12×12=1.44 inches, decrease in diameter per foot of depth.
120—1.44=118.56 inches, diameter 1 foot from bottom.
(120+118.56)÷2=119.28 inches, mean diameter.
119.28×119.28×0.0034=48.37 gallons per inch for first foot.
48.37×12=580.44 gallons, capacity first foot.

The capacity for the next foot of depth can be ascertained by the same process of taking the diameter at the top of the first foot as the bottom diameter for the calculation. For example, the bottom diameter of the second foot of depth is 118.56 inches, and the top diameter would be 118.56—1.44 (decrease in diameter)=117.12 inches top diameter. By following the above rule the capacity for the second foot is found as follows:

(118.56+117.12)÷2=117.84 inches.
117.84×117.84×0.0034=47.21 gallons per inch for second foot.
47.21×12=566.52 gallons capacity for second foot.

Each other foot of depth can be found in the same way, care being used that each calculation is correct.

PAR. 356. *To find the liquid contents when partly filled.*—Ascertain the decrease in diameter of the tank per inch of depth by subtracting the top diameter of the tank from its bottom diameter and dividing the difference by the depth in inches of the tank, to get the decrease in diameter per inch of depth. Then ascertain the depth in inches of the liquid, and multiply the same by the decrease in diameter per inch of depth, the product will be the difference between the bottom diameter of the tank and the diameter of the tank at the top of the liquid. Then add these two diameters, divide the sum by 2, multiply the quotient by itself and by 0.0034 and by the depth in inches of the liquid. The result will be the gallons of liquid contained in the tank.

Example

What are the liquid contents of the above tank if the depth of the wine in it is 75 inches?

(120—108)÷100=0.12 inch, decrease in diameter per inch.
0.12×75=9 inches, difference between the bottom and top.
120—9=111 inches, diameter at top of wine.
(111+120)÷2=115.5 inches, mean diameter.
115.5×115.5×0.0034×75=3,402 gallons, contents.

ARTICLE LXX—RULES FOR FINDING CAPACITY OF ROUND TANKS OR CASKS BULGED IN THE MIDDLE

PAR. 357. *To find the capacity.*—The capacities of casks bulged in the middle can best be determined by filling them with liquid and measuring such liquid in a measuring tank or in a tank of uniform dimensions.

The following rule while not mathematically correct may be used by officers in taking inventories of such casks:

Ascertain the inside head and middle diameters in the manner set forth above. In doing this care should be used to get the true diameter at the head and at the center of the cask. Where the diameters are determind by taking the circumference and dividing same by 3.1416, the measurements should be made in the exact center of the cask and at the heads rather than at the end of the staves in cases where the staves extend beyond the heads.

Add to the head diameter two-thirds of the difference between the head and middle diameter (if the staves are only slightly curved, add only six-tenths of the difference); this gives the mean diameter; multiply the mean diameter by itself and by the inside length, where the cask is lying on its side, or inside height where the cask is standing on one head, and by 0.0034. The result will be the capacity of the cask in gallons.

Example

A wine cask is 64 inches long, the head diameter is 36 inches, and the center diameter is 42 inches. What is the capacity of the cask?

42—36=6 inches difference in diameter.
(⅔ of 6)+36=40 inches mean diameter.
40×40×64×0.0034=348.16 gallons capacity of cask.

ARTICLE LXXI—RULES FOR FINDING CAPACITY AND CONTENTS OF SQUARE OR RECTANGULAR TANKS OR VATS WITH PERPENDICULAR SIDES

PAR. 358. *To find the capacity.*—Multiply the inside length by the inside breadth and by the inside height and divide by 231, the number of cubic inches in a gallon, the result will be the capacity in gallons of the tank or vat.

Example

A rectangular tank is 120 inches long, 108 inches wide, and 100 inches deep. What is its capacity?

(120×108×100)÷231=5,610 gallons capacity.

PAR. 359. *To find the capacity per inch of depth.*—Multiply the inside length by the inside breadth and divide by 231; the result will be the capacity per inch of depth.

Example

What is the capacity per inch of depth of the above tank?

(120×108)÷231=56.10 gallons, capacity per inch.

PAR. 360. *To find the liquid contents when partly filled.*—Multiply the depth of the wine in inches by the capacity per inch.

Example

What are the liquid contents of the above tank if the depth of the wine in it is 75 inches?

75×56.10=4,207.5 gallons, contents of tank.

ARTICLE LXXII—RULES FOR FINDING CAPACITY AND CONTENTS OF SQUARE OF RECTANGULAR TANKS OR VATS LARGER AT THE TOP THAN AT THE BOTTOM, OR VICE VERSA

PAR. 361. *To find the capacity.*—Find the mean length by adding the top length and the bottom length and dividing by 2. Find the mean width by adding the top width and the bottom width and dividing by 2. Mutiply the mean length by the mean width and by the depth and divide by 231. The result will be the capacity of the tank in gallons.

Example

A rectangular tank is 120 inches long at the top and 108 inches at the bottom, 100 inches wide at the top and 90 inches at the bottom, and 72 inches deep. What is its capacity?

(120+108)÷2=114 inches, mean length.
(100+90)÷2=95 inches, mean width.
(114×95×72)÷231=3,375.5 gallons, capacity of tank.

PAR. 362. *To find the contents when partly filled.*—Subtract the top length from the bottom length and divide the difference by the depth; the result will be the difference in length per inch. Multiply the depth of the wine in inches by the difference in length per inch to get the difference in length at the top of the wine and at the bottom of the tank. Add this difference to the bottom length to get the length at the top of the wine. Add the length at the top of the wine and the bottom length and divide by 2 to get the mean length.

Find the mean width in the same way.

Multiply the mean length by the mean width and by the depth of the wine and divide by 231; the result will be the contents of the tank in gallons.

Example

What are the liquid contents of the above tank if the depth of the wine in it is 48 inches?

(120—108)÷72=⅙ inch, difference in length per inch.
48×⅙=8 inches, difference in length top of wine.
108+8=116 inches, length at top of wine.
(108+116)÷2=112 inches, mean length.

The mean width is found in the same way:

(100—90)÷72×48=6⅔ inches, difference in width at top of wine.
(90+6⅔+90)÷2=93⅓ inches, mean width.
(112×93⅓×48)÷231=2,172 gallons, contents of tank.

[SEAL] GUY T. HELVERING,
Commissioner of Internal Revenue.

Approved, October 6, 1937.

ROSWELL MAGILL,
Acting Secretary of the Treasury.

APPENDIX, WITH TABLES

WATERING OF THE FRESH MUST

(*a*) If the acid of the must does not exceed 5 per mille, no addition of water shall be allowed.

(*b*) If the acid of the must is in excess of 5 per mille, the addition of water will be allowed in quantity sufficient to reduce the acid to 5 per mile: *Provided*, That in no case shall the volume of the must be increased more than 35 per cent. Use Table I to ascertain proper amount of water to be added.

TABLE I.—*The number of gallons of sugar water that can be added to each thousand (1,000) gallons of must, based on the acid expressed in parts per mille of tartaric acid*

Parts per mille fixed acid	Gallons of wine	Gallons of sugar water allowed	Parts per mille fixed acid	Gallons of wine	Gallons of sugar water allowed
5.1	1,000	20.0	6.5	1,000	300.0
5.2	1,000	40.0	6.6	1,000	320.0
5.3	1,000	60.0	6.7	1,000	340.0
5.4	1,000	80.0	6.8	1,000	360.0
5.5	1,000	100.0	6.9	1,000	380.0
5.6	1,000	120.0	7.0	1,000	400.0
5.7	1,000	140.0	7.1	1,000	420.0
5.8	1,000	160.0	7.2	1,000	440.0
5.9	1,000	180.0	7.3	1,000	460.0
6.0	1,000	200.0	7.4	1,000	480.0
6.1	1,000	220.0	7.5	1,000	500.0
6.2	1,000	240.0	7.6	1,000	520.0
6.3	1,000	260.0	For all acidity over		
6.4	1,000	280.0	7.6	1,000	538.4

DETERMINATION OF THE ACIDITY OF A YOUNG SOUND WINE OR MUST

1. Apparatus Necessary

1. Burette, 25 c. c., graduated to 1/10 c. c.
2. Burette stand.
3. Spot plate, porcelain.
4. Pipette, 20 c. c.
5. Glass tube dropper.
6. Stirring rods.
7. Funnel.
8. Flasks.
9. Beakers.
10. Absorbent cotton.
11. Porcelain dishes.
12. Filter paper.
13. Standard acid sample.

2. Solutions Necessary

(*a*) N/10 sodium hydroxide, exact.
(*b*) Indicator, aqueous solution azolitmin, neutral.
(*c*) Approximate N/10 hydrochloric acid.

3. The Use and Care of Burette

(*a*) Before using the burette the stopcock should be greased while dry with a very little vaseline. It should then be washed thoroughly inside with water and then rinsed thoroughly twice with the N/10 sodium hydroxide, care being taken that all the interior of the burette comes in contact with the rinsing liquid. The burette is then filled to the top with N/10 sodium hydroxide, placed in a stand, and after standing for a minute the level of the liquid is brought exactly to the 0 mark by opening the stopcock. The instrument is now ready for use.

(*b*) After using the instrument it should be emptied, washed with water, and placed inverted in the stand with the cock open until needed again.

4. Use and Care of the Pipette

(*a*) The pipette is used to measure the amount of must or wine to be used for ascertaining the quantity of acid. The wine is sucked with the mouth into the pipette until the level of the liquid is about an inch above the mark, the finger is quickly placed over the end, and the wine allowed to flow out until the mark is reached. The pipette now holds the amount of wine needed for the acid determination and the contents are allowed then to run into a beaker. A little practice makes the operation of the pipette very easy.

(*b*) Before using the pipette it should be always rinsed thoroughly with the wine that one wishes to investigate, and after using should be washed with water.

5. Care of Other Apparatus

One main precaution, as in all chemical work, is to keep all glassware, etc., scrupulously clean.

6. Preparation of the Test Solution of Azolitmin

Dissolve the powdered azolitmin in 1 quart of distilled water, or if distilled water can not be obtained use boiled and filtered water. The color of this solution should be purple. It often happens, however, that the color is either blue or red. If blue, add a drop or two of the hydrochloric acid, shake, and continue until the color is purple; if red, add similarly a drop or two of the N/10 sodium hydroxide until purple. This solution may change in color over night, so each day it should be brought to purple.

7. Determination of the Acid

Selection of the Sample

(*a*) Endeavor to obtain a sample representative of the whole lot or package under investigation. If the wine or must can not be mixed thoroughly, take equal portions from different parts of the container and then mix these portions thoroughly. A sufficient amount is then filtered through a small pad of absorbent cotton placed in the funnel, using a flask to catch the filtered wine.

Measuring the Sample

(*b*) Before measuring the sample remove the gas (CO_2) contained in the sample by vigorously pouring the wine from one beaker to another. Then, by use of the pipette, measure 20 c. c. of the sample in a clean beaker about 150 c. c. in capacity. This is important for the reason that this gas has acid properties and would affect the result and because it is impossible to measure correctly a wine containing much gas.

Preparation of the Spot Plate

(*c*) Fill each hole of the spot plate about one-half full with the azolitmin test solution, using for this purpose the glass dropper. This should be done just prior to using it.

The titration

(*d*) *For white wines (or must).*—Having filled the burette as instructed in 3, measured the wine as in 7 (*b*), and prepared the spot plate, 7 (*c*), place the beaker with the wine under the burette and allow the N/10 sodium hydroxide to run slowly into the wine, shaking the beaker the while to thoroughly mix the two liquids. When about 10 c. c. have run into the beaker stop, stir thoroughly with a stirring rod, and place one or two drops of the wine by means of the stirring rod into one of the cavities in the spot plate, mix and at once observe the color. If the change in color of the azolitmin is to a decided red, add more N/10 sodium hydroxide and continue until two drops of the wine do not change the tint of the azolitmin appreciably. For the first two or three times the end point may be a little difficult to discern, but in a short time the eye becomes very proficient and no trouble will be experienced. When the point is reached where the wine does not change the color of the test solution either to red or blue, read the burette, and then from the Table II ascertain the amount of acid present in the wine. For example, if the reading on the burette were 18.2, then from the table the per cent of acid would be 0.683, or if the result is required per mille multiply the per cent by 10, which would be in the above case 6.83 parts per mille. In the event that the burette reading is lower than 10, double the reading, look this up on the table, and divide by 2. For example, if the burette reading were 7.4, then

$7.4 \times 2 = 14.8$
14.8 on table $= 0.555$
$0.555 \div 2 = 0.278$ per cent acid.

If the reading is above 36.9, divide reading by 2, look up on table, and multiply by 2. Example: Burette reading 41.6, then

$41.6 \div 2 = 20.8$
20.8 on table $= 0.780$
$0.780 \times 2 = 1.560$ per cent acid.

(*e*) *Red wines (or must).*—Red wines are treated in the same manner as are white wines, but often the end point is more difficult to determine. The color of the red wine as it changes with the addition of the N/10 sodium hydroxide is often a splendid indication of the nearness of the end point, but practice alone can help one in this case.

(*f*) *Precautions for the titration.*—When placing the N/10 sodium hydroxide solution in the burette it is best to take the lowest part of the meniscus (or quarter moon) as the level of the liquid, and take the same portion as the level in the final reading. In any case, however, use the same level for both the 0 and the final reading. Remember these facts: If too little N/10 sodium hydroxide has been used in the titration, the azolitmin will turn red with a drop of the wine; if too much has been used, it will turn blue. The bottle containing the N/10 sodium hydroxide should be kept stoppered when not in use and nothing should be allowed to enter this bottle; if some of the N/10 sodium hydroxide in the burette is not needed, throw it away—do not pour back into the bottle.

8. Sample for Control of Manipulation of Titration

In order that one may be assured he is correctly determining the acid in a wine, there is included among the materials sent a standard acid sample, the fixed acid content of which is given on the label. If the officer will determine the acidity of this sample according to directions detailed in 7, and his result compares favorably with that given on the label he will know that his manipulation is correct. If his agreement with the sample is within 0.02 per cent acid, the result will be satisfactory.

TABLE II.—*Acid as tartaric—Grams tartaric ($C_4H_6O_6$) in 100 c. c. sample when 20 c. c. are titrated with decinormal alkali*

C. c. alkali	Grams, 100 c. c.	C. c. alkali	Grams, 100 c. c.	C. c. alkali	Grams, 100 c. c.	C. c. alkali	Grams, 100 c. c.	C. c. alkali	Grams, 100 c. c.
10.0	0.375	15.4	0.578	20.8	0.780	26.2	0.983	31.6	1.185
10.1	.379	15.5	.581	20.9	.784	26.3	.986	31.7	1.189
10.2	.383	15.6	.585			26.4	.990	31.8	1.193
10.3	.386	15.7	.589	21.0	.788	26.5	.994	31.9	1.196
10.4	.390	15.8	.593	21.1	.791	26.6	.998		
10.5	.394	15.9	.596	21.2	.795	26.7	1.001	32.0	1.200
10.6	.398			21.3	.799	26.8	1.005	32.1	1.204
10.7	.401	16.0	.600	21.4	.803	26.9	1.009	32.2	1.208
10.8	.405	16.1	.604	21.5	.806			32.3	1.211
10.9	.409	16.2	.608	21.6	.810	27.0	1.013	32.4	1.215
		16.3	.611	21.7	.814	27.1	1.016	32.5	1.219
11.0	.413	16.4	.615	21.8	.818	27.2	1.020	32.6	1.223
11.1	.416	16.5	.619	21.9	.821	27.3	1.024	32.7	1.226
11.2	.420	16.6	.623			27.4	1.028	32.8	1.230
11.3	.424	16.7	.626	22.0	.823	27.5	1.031	32.9	1.234
11.4	.428	16.8	.630	22.1	.829	27.6	1.035		
11.5	.431	16.9	.634	22.2	.833	27.7	1.039	33.0	1.238
11.6	.435			22.3	.836	27.8	1.043	33.1	1.241
11.7	.439	17.0	.638	22.4	.840	27.9	1.046	33.2	1.245
11.8	.443	17.1	.641	22.5	.844			33.3	1.249
11.9	.446	17.2	.645	22.6	.848	28.0	1.050	33.4	1.253
		17.3	.649	22.7	.851	28.1	1.054	33.5	1.256
12.0	.450	17.4	.653	22.8	.855	28.2	1.058	33.6	1.260
12.1	.454	17.5	.656	22.9	.859	28.3	1.061	33.7	1.264
12.2	.458	17.6	.660			28.4	1.065	33.8	1.268
12.3	.461	17.7	.664	23.0	.863	28.5	1.069	33.9	1.271
12.4	.465	17.8	.668	23.1	.866	28.6	1.073		
12.5	.469	17.9	.671	23.2	.870	28.7	1.076	34.0	1.275
12.6	.473			23.3	.874	28.8	1.080	34.1	1.279
12.7	.476	18.0	.675	23.4	.878	28.9	1.084	34.2	1.283
12.8	.480	18.1	.679	23.5	.881			34.3	1.286
12.9	.484	18.2	.683	23.6	.885	29.0	1.088	34.4	1.290
		18.3	.686	23.7	.889	29.1	1.091	34.5	1.294
13.0	.488	18.4	.690	23.8	.893	29.2	1.095	34.6	1.298
13.1	.491	18.5	.694	23.9	.896	29.3	1.099	34.7	1.301
13.2	.495	18.6	.698			29.4	1.103	34.8	1.305
13.3	.499	18.7	.701	24.0	.900	29.5	1.106	34.9	1.309
13.4	.503	18.8	.705	24.1	.904	29.6	1.110		
13.5	.506	18.9	.709	24.2	.908	29.7	1.114	35.0	1.313
13.6	.510			24.3	.911	29.8	1.118	35.1	1.316
13.7	.514	19.0	.713	24.4	.915	29.9	1.121	35.2	1.320
13.8	.518	19.1	.716	24.5	.919			35.3	1.324
13.9	.521	19.2	.720	24.6	.923	30.0	1.125	35.4	1.328
		19.3	.724	24.7	.926	30.1	1.129	35.5	1.331
14.0	.525	19.4	.728	24.8	.930	30.2	1.133	35.6	1.335
14.1	.529	19.5	.731	24.9	.934	30.3	1.136	35.7	1.339
14.2	.533	19.6	.735	25.0	.938	30.4	1.140	35.8	1.343
14.3	.536	19.7	.739	25.1	.941	30.5	1.144	35.9	1.346
14.4	.540	19.8	.743	25.2	.945	30.6	1.148		
14.5	.544	19.9	.746	25.3	.949	30.7	1.151	36.0	1.350
14.6	.548			25.4	.953	30.8	1.155	36.1	1.354
14.7	.551	20.0	.750	25.5	.956	30.9	1.159	36.2	1.358
14.8	.555	20.1	.754	25.6	.960			36.3	1.361
14.9	.559	20.2	.758	25.7	.964	31.0	1.163	36.4	1.365
		20.3	.761	25.8	.968	31.1	1.166	36.5	1.369
15.0	.563	20.4	.765	25.9	.971	31.2	1.170	36.6	1.373
15.1	.566	20.5	.769			31.3	1.174	36.7	1.376
15.2	.570	20.6	.773	26.0	.975	31.4	1.178	36.8	1.380
15.3	.574	20.7	.776	26.1	.979	31.5	1.181	36.9	1.384

Tables

NOTE.—The following tables have been prepared for the use of winemakers, storekeeper-gaugers, and examining officers. Table III gives the correction to be applied to the readings of the saccharometer when taken at other than the normal temperature; Table IV gives the specific gravity corresponding to the readings of the saccharometer at the normal temperature; Table V gives the specific gravity corresponding to the readings of the alcoholometer at the normal temperature; Table VI gives the correction to be applied to the readings of the alcoholometer when taken at other than the normal temperature; Table VII gives the alcohol tables for Juerst's ebulliometer; Table VIII gives the alcohol tables for the Lefco ebulliometer; and Table IX gives the wine gallons of brandy required to fortify each 100 wine gallons of wine according to the alcoholic content of the brandy and the wine before fortification, and the desired alcoholic content of the wine after fortification.

TABLE III.—*Correction to be applied to the reading of Balling's saccharometer for different temperatures*

	Temperature, ° F.	Degree Balling																				
		1°	2°	3°	4°	5°	6°	7°	8°	9°	10°	11°	12°	13°	14°	15°	16°	17°	18°	19°	20°	21°
To be subtracted from the indicated degree	50	0.17	0.17	0.18	0.19	0.20	0.20	0.21	0.21	0.22	0.22	0.22	0.23	0.23	0.24	0.24	0.24	0.25	0.25	0.25	0.26	0.26
	51	.16	.16	.17	.18	.19	.19	.20	.20	.21	.21	.21	.22	.22	.23	.23	.23	.24	.24	.24	.24	.25
	52	.15	.15	.16	.17	.18	.18	.18	.19	.19	.19	.19	.19	.20	.20	.21	.21	.22	.22	.22	.22	.23
	53	.14	.14	.14	.15	.16	.16	.16	.17	.17	.18	.18	.18	.18	.19	.19	.19	.19	.20	.20	.20	.20
	54	.12	.12	.13	.14	.15	.15	.15	.16	.16	.16	.16	.17	.17	.17	.17	.17	.18	.18	.18	.18	.18
	55	.09	.09	.09	.10	.11	.11	.11	.12	.12	.12	.12	.13	.13	.13	.14	.14	.14	.14	.14	.14	.15
	56	.07	.07	.07	.08	.09	.09	.09	.09	.10	.10	.10	.10	.11	.11	.11	.11	.11	.11	.11	.11	.11
	57	.06	.06	.06	.07	.07	.07	.07	.07	.08	.08	.08	.08	.08	.09	.09	.09	.09	.10	.10	.10	.10
	58	.04	.04	.04	.05	.05	.05	.05	.05	.06	.06	.06	.06	.06	.07	.07	.07	.07	.07	.07	.07	.07
	59	.02	.02	.02	.02	.02	.02	.02	.02	.03	.03	.03	.03	.03	.03	.03	.03	.03	.03	.03	.03	.03
	60																					
To be added to the indicated degree	61	0.02	0.02	0.02	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.30	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03
	62	.06	.06	.07	.07	.08	.08	.08	.08	.08	.08	.09	.09	.09	.09	.09	.09	.09	.09	.09	.09	.09
	63	.09	.10	.10	.11	.11	.11	.11	.11	.11	.11	.12	.11	.12	.12	.12	.12	.12	.12	.12	.12	.12
	64	.12	.12	.13	.13	.14	.14	.14	.14	.15	.15	.15	.12	.16	.16	.17	.17	.17	.17	.17	.17	.17
	65	.14	.15	.15	.16	.17	.17	.17	.17	.18	.18	.18	.19	.19	.19	.20	.20	.20	.20	.20	.20	.20
	66	.17	.17	.18	.19	.20	.20	.21	.21	.21	.22	.22	.23	.23	.23	.24	.24	.24	.24	.24	.24	.24
	67	.20	.21	.21	.22	.23	.23	.23	.24	.24	.28	.25	.25	.26	.26	.27	.27	.27	.27	.27	.27	.27
	68	.22	.23	.24	.25	.26	.26	.27	.28	.28	.29	.29	.30	.30	.31	.31	.31	.31	.31	.31	.31	.31
	69	.25	.26	.27	.28	.29	.29	.30	.31	.31	.32	.32	.33	.33	.34	.34	.34	.34	.34	.34	.34	.34
	70	.28	.29	.30	.31	.32	.32	.33	.34	.34	.35	.35	.36	.36	.37	.37	.37	.37	.38	.38	.38	.38
	71	.31	.32	.33	.34	.35	.35	.36	.37	.37	.38	.38	.39	.39	.40	.40	.40	.40	.40	.40	.40	.41
	72	.34	.35	.36	.37	.38	.39	.40	.41	.42	.42	.42	.43	.43	.43	.44	.44	.44	.44	.44	.44	.44
	73	.37	.38	.40	.41	.42	.43	.44	.44	.45	.46	.46	.46	.46	.47	.47	.47	.47	.47	.47	.47	.47
	74	.40	.42	.43	.45	.46	.47	.48	.48	.49	.50	.50	.50	.51	.51	.51	.51	.51	.52	.52	.52	.52
	75	.44	.46	.47	.49	.50	.51	.52	.52	.53	.54	.54	.54	.55	.55	.56	.56	.56	.57	.57	.58	.58
	76	.47	.48	.50	.52	.53	.54	.55	.55	.56	.57	.57	.58	.58	.59	.60	.60	.61	.61	.61	.62	.62
	77	.50	.52	.54	.56	.57	.58	.59	.60	.60	.61	.61	.62	.62	.63	.63	.63	.64	.64	.64	.65	.65
	78	.53	.54	.56	.58	.60	.61	.62	.62	.63	.64	.64	.65	.65	.66	.66	.66	.67	.67	.68	.68	.68
	79	.57	.58	.60	.62	.64	.65	.66	.66	.67	.68	.68	.69	.69	.70	.70	.70	.71	.71	.71	.72	.72
	80	.60	.62	.64	.66	.68	.69	.70	.70	.71	.72	.72	.72	.73	.73	.74	.74	.75	.75	.75	.76	.76
	81	.63	.65	.67	.69	.71	.72	.73	.73	.74	.75	.75	.76	.76	.77	.78	.78	.79	.79	.79	.79	.79
	82	.67	.69	.71	.73	.76	.76	.77	.77	.78	.78	.79	.80	.80	.81	.82	.82	.83	.83	.84	.84	.84
	82	.72	.74	.76	.78	.81	.81	.81	.82	.82	.82	.83	.84	.85	.86	.87	.87	.87	.87	.87	.87	.88
	84	.77	.79	.81	.83	.86	.86	.86	.86	.87	.87	.88	.89	.90	.91	.92	.92	.93	.93	.93	.93	.94
	85	.83	.85	.87	.89	.91	.92	.92	.92	.93	.93	.94	.95	.96	.97	.98	.98	.98	.99	.99	.99	.99
	86	.88	.90	.92	.94	.96	.96	.97	.98	.98	.99	1.00	1.01	1.02	1.02	1.03	1.03	1.04	1.04	1.04	1.05	1.05
	87	.94	.96	.98	.99	1.01	1.02	1.03	1.03	1.04	1.05	1.05	1.06	1.07	1.07	1.08	1.08	1.09	1.10	1.10	1.11	1.11
	88	.99	1.01	1.03	1.04	1.06	1.07	1.08	1.09	1.10	1.11	1.11	1.12	1.12	1.13	1.13	1.14	1.15	1.15	1.16	1.17	1.17
	89	1.05	1.07	1.09	1.10	1.11	1.15	1.13	1.14	1.15	1.16	1.16	1.17	1.17	1.18	1.18	1.19	1.21	1.21	1.22	1.23	1.23
	90	1.11	1.13	1.15	1.16	1.17	1.18	1.19	1.20	1.21	1.22	1.22	1.23	1.23	1.24	1.24	1.25	1.27	1.28	1.29	1.30	1.30
	91	1.15	1.17	1.19	1.20	1.21	1.22	1.23	1.24	1.26	1.27	1.27	1.27	1.28	1.28	1.29	1.30	1.32	1.33	1.34	1.35	1.36
	92	1.20	1.22	1.24	1.25	1.26	1.27	1.28	1.30	1.31	1.32	1.32	1.33	1.33	1.34	1.34	1.35	1.37	1.38	1.39	1.40	1.41
	93	1.24	1.26	1.28	1.29	1.31	1.32	1.33	1.34	1.36	1.37	1.37	1.38	1.39	1.39	1.40	1.40	1.42	1.43	1.44	1.44	1.45
	94	1.29	1.31	1.33	1.35	1.36	1.37	1.39	1.40	1.41	1.42	1.42	1.43	1.44	1.44	1.45	1.45	1.47	1.47	1.48	1.49	1.50
	95	1.33	1.35	1.37	1.39	1.41	1.42	1.44	1.45	1.46	1.47	1.47	1.48	1.49	1.49	1.50	1.50	1.51	1.52	1.53	1.54	1.54
	96	1.38	1.40	1.42	1.44	1.46	1.47	1.49	1.50	1.51	1.52	1.52	1.53	1.54	1.54	1.55	1.55	1.56	1.57	1.57	1.58	1.58
	97	1.42	1.44	1.46	1.48	1.51	1.52	1.54	1.55	1.56	1.57	1.57	1.58	1.59	1.59	1.60	1.60	1.62	1.62	1.63	1.63	1.64
	98	1.47	1.49	1.51	1.54	1.56	1.57	1.58	1.59	1.60	1.62	1.63	1.63	1.64	1.64	1.65	1.65	1.66	1.67	1.67	1.68	1.68
	99	1.51	1.53	1.55	1.58	1.61	1.62	1.63	1.64	1.66	1.67	1.68	1.68	1.69	1.70	1.71	1.71	1.72	1.73	1.73	1.73	1.74
	100	1.55	1.57	1.59	1.62	1.66	1.67	1.68	1.69	1.72	1.72	1.73	1.73	1.74	1.76	1.77	1.77	1.78	1.79	1.79	1.79	1.80

N. B.—The correction for indications between 21° and 30° Balling and 50° and 70° F. temperature may be made by adding 0.005 to each correction given in the above table, column 21°, for each increase in degree Balling. For instance, 25° Balling 79° F., correction to be added to column 21° and 70°. 0.02+0.38=0.40.

TABLE IV.—*Specific Gravity at 60° F., Corresponding to Readings of Balling's Saccharometer*

[W. Schultze, Dingler's Polytechnisches Journal 1878, 230, p. 421]

Balling	Specific gravity	Balling	Specific gravity	Balling	Specific gravity	Balling	Specific gravity	Balling	Specific gravity
0.00	1.0000	0.26	1.0010	0.52	1.0020	0.79	1.0030	1.05	1.0040
.03	1.0001	.29	1.0011	.55	1.0021	.81	1.0031	1.08	1.0041
.05	1.0002	.31	1.0012	.58	1.0022	.84	1.0032	1.10	1.0042
.08	1.0003	.34	1.0013	.60	1.0023	.87	1.0033	1.13	1.0043
.10	1.0004	.37	1.0014	.63	1.0024	.89	1.0034	1.15	1.0044
.13	1.0005	.39	1.0015	.66	1.0025	.92	1.0035	1.18	1.0045
.16	1.0006	.42	1.0016	.68	1.0026	.94	1.0036	1.21	1.0046
.18	1.0007	.45	1.0017	.71	1.0027	.97	1.0037	1.23	1.0047
.21	1.0008	.47	1.0018	.73	1.0028	1.00	1.0038	1.26	1.0048
.24	1.0009	.50	1.0019	.76	1.0029	1.02	1.0039	1.29	1.0049

TABLE IV.—*Specific Gravity at 60° F., Corresponding to Readings of Balling's Saccharometer*—Continued

[W. Schultze, Dingler's Polytechnisches Journal 1878, 230, p. 421]

Balling	Specific gravity	Balling	Specific gravity	Balling	Specific gravity	Balling	Specific gravity	Balling	Specific gravity
1.31	1.0050	1.56	1.0060	1.82	1.0070	2.07	1.0080	2.33	1.0090
1.34	1.0051	1.59	1.0061	1.84	1.0071	2.10	1.0081	2.35	1.0091
1.36	1.0052	1.62	1.0062	1.87	1.0072	2.12	1.0082	2.38	1.0092
1.39	1.0053	1.64	1.0063	1.90	1.0073	2.15	1.0083	2.41	1.0093
1.41	1.0054	1.67	1.0064	1.92	1.0074	2.17	1.0084	2.43	1.0094
1.44	1.0055	1.69	1.0065	1.95	1.0075	2.20	1.0085	2.46	1.0095
1.46	1.0056	1.72	1.0066	1.97	1.0076	2.23	1.0086	2.48	1.0096
1.49	1.0057	1.74	1.0067	2.00	1.0077	2.25	1.0087	2.51	1.0097
1.51	1.0058	1.77	1.0068	2.02	1.0078	2.28	1.0088	2.53	1.0098
1.54	1.0059	1.79	1.0069	2.05	1.0079	2.30	1.0089	2.56	1.0099

TABLE IV.—*Specific Gravity at 60° F., Corresponding to Readings of Balling's Saccharometer*—Continued

Balling	Specific gravity	Balling	Specific gravity	Balling	Specific gravity	Balling	Specific gravity	Balling	Specific gravity
2.58	1.0100	4.93	1.0190	7.26	1.0280	9.45	1.0370	11.65	1.0460
2.61	1.0101	4.96	1.0191	7.28	1.0281	9.48	1.0371	11.67	1.0461
2.64	1.0102	4.98	1.0192	7.30	1.0282	9.50	1.0372	11.70	1.0462
2.66	1.0103	5.01	1.0193	7.33	1.0283	9.52	1.0373	11.72	1.0463
2.69	1.0104	5.04	1.0194	7.35	1.0284	9.55	1.0374	11.75	1.0464
2.71	1.0105	5.06	1.0195	7.37	1.0285	9.57	1.0375	11.77	1.0465
2.74	1.0106	5.09	1.0196	7.39	1.0286	9.59	1.0376	11.79	1.0466
2.76	1.0107	5.12	1.0197	7.42	1.0287	9.62	1.0377	11.82	1.0467
2.79	1.0108	5.15	1.0198	7.44	1.0288	9.64	1.0378	11.84	1.0468
2.82	1.0109	5.17	1.0199	7.46	1.0289	9.66	1.0379	11.87	1.0469
2.84	1.0110	5.20	1.0200	7.48	1.0290	9.69	1.0380	11.89	1.0470
2.87	1.0111	5.23	1.0201	7.51	1.0291	9.71	1.0381	11.92	1.0471
2.89	1.0112	5.25	1.0202	7.53	1.0292	9.73	1.0382	11.94	1.0472
2.92	1.0113	5.28	1.0203	7.55	1.0293	9.76	1.0383	11.97	1.0473
2.94	1.0114	5.30	1.0204	7.57	1.0294	9.78	1.0384	11.99	1.0474
2.97	1.0115	5.33	1.0205	7.60	1.0295	9.81	1.0385	12.01	1.0475
2.99	1.0116	5.35	1.0206	7.62	1.0296	9.83	1.0386	12.04	1.0476
3.02	1.0117	5.38	1.0207	7.64	1.0297	9.85	1.0387	12.06	1.0477
3.05	1.0118	5.40	1.0208	7.66	1.0298	9.88	1.0388	12.09	1.0478
3.07	1.0119	5.43	1.0209	7.69	1.0299	9.90	1.0389	12.11	1.0479
3.10	1.0120	5.45	1.0210	7.71	1.0300	9.92	1.0390	12.14	1.0480
3.12	1.0121	5.48	1.0211	7.73	1.0301	9.95	1.0391	12.16	1.0481
3.15	1.0122	5.50	1.0212	7.75	1.0302	9.97	1.0392	12.19	1.0482
3.17	1.0123	5.53	1.0213	7.77	1.0303	9.99	1.0393	12.21	1.0483
3.20	1.0124	5.55	1.0214	7.80	1.0304	10.02	1.0394	12.23	1.0484
3.23	1.0125	5.57	1.0215	7.82	1.0305	10.04	1.0395	12.26	1.0485
3.25	1.0126	5.60	1.0216	7.84	1.0306	10.06	1.0396	12.28	1.0486
3.28	1.0127	5.62	1.0217	7.86	1.0307	10.09	1.0397	12.31	1.0487
3.30	1.0128	5.65	1.0218	7.89	1.0308	10.11	1.0398	12.33	1.0488
3.33	1.0229	5.67	1.0219	7.91	1.0309	10.13	1.0399	12.36	1.0489
3.35	1.0130	5.70	1.0220	7.93	1.0610	10.16	1.0400	12.38	1.0490
3.38	1.0131	5.72	1.0221	7.95	1.0311	10.18	1.0401	12.41	1.0491
3.41	1.0132	5.75	1.0222	7.98	1.0312	10.20	1.0402	12.43	1.0492
3.43	1.0133	5.77	1.0223	8.00	1.0313	10.23	1.0403	12.45	1.0493
3.46	1.0134	5.80	1.0224	8.02	1.0314	10.25	1.0404	12.48	1.0494
3.48	1.0135	5.82	1.0225	8.04	1.0315	10.27	1.0405	12.50	1.0495
3.51	1.0136	5.84	1.0226	8.07	1.0316	10.30	1.0406	12.53	1.0496
3.54	1.0137	5.87	1.0227	8.09	1.0317	10.32	1.0407	12.55	1.0497
3.56	1.0138	5.89	1.0228	8.11	1.0318	10.35	1.0408	12.58	1.0498
3.59	1.0139	5.92	1.0229	8.13	1.0319	10.37	1.0409	12.60	1.0499
								12.63	1.0500
3.61	1.0140	5.94	1.0230	8.16	1.0320	10.40	1.0410		
3.64	1.0141	5.97	1.0231	8.18	1.0321	10.42	1.0411	12.65	1.0501
3.66	1.0142	5.99	1.0232	8.20	1.0322	10.45	1.0412	12.67	1.0502
3.69	1.0143	6.02	1.0233	8.22	1.0323	10.47	1.0413	12.70	1.0503
3.72	1.0144	6.04	1.0234	8.25	1.0324	10.50	1.0414	12.72	1.0504
3.74	1.0145	6.07	1.0235	8.27	1.0225	10.52	1.0415	12.75	1.0505
3.77	1.0146	6.09	1.0236	8.29	1.0326	10.55	1.0416	12.77	1.0506
3.79	1.0147	6.11	1.0237	8.32	1.0327	10.57	1.0417	12.80	1.0507
3.82	1.0148	6.14	1.0238	8.34	1.0328	10.60	1.0418	12.82	1.0508
3.85	1.0149	6.16	1.0239	8.37	1.0329	10.62	1.0419	12.85	1.0509
								12.87	1.0510
3.87	1.0150	6.19	1.0240	8.40	1.0330	10.65	1.0420		
3.90	1.0151	6.21	1.0241	8.43	1.0331	10.67	1.0421	12 90	1.0511
3.92	1.0152	6.24	1.0242	8.45	1.0332	10.70	1.0422	12.92	1.0512
3.95	1.0153	6.26	1.0213	8.48	1.0333	10.72	1.0423	12.94	1.0513
3.97	1.0154	6.29	1.0244	8.51	1.0334	10.75	1.0424	12.97	1.0514
4.00	1.0155	6.31	1.0245	8.53	1.0335	10.77	1.0425	12.99	1.0515
4.03	1.0156	6.34	1.0246	8.56	1.0336	10.80	1.0426	13.02	1.0516
4.05	1.1057	6.36	1.0247	8.59	1.0337	10.82	1.0427	13.04	1.0517
4.08	1.0158	6.39	1.0248	8.61	1.0338	10.85	1.0428	13.07	1.0518
4.10	1.0159	6.41	1.0249	8.64	1.0339	10.88	1.0429	13.09	1.0519
						10.90	1.0430	13.12	1.0520
4.13	1.0160	6.44	1.0250	8.67	1.0340				
4.16	1.0161	6.47	1.0251	8.70	1.0341	10.93	1.0431	13.14	1.0521
4.18	1.0162	6.50	1.0252	8.72	1.0342	10.95	1.0432	13.16	1.0522
4.21	1.0163	6.52	1.0253	8.75	1.0343	10.98	1.0433	13.19	1.0523
4.23	1.0164	6.55	1.0254	8.78	1.0344	11.00	1.0434	13.21	1.0524
4.26	1.0165	6.58	1.0255	8.80	1.0345	11.03	1.6435	13.24	1.0525
4.28	1.0166	6.61	1.0256	8.83	1.0346	11.05	1.6436	13.26	1.0526
4.31	1.0167	6.63	1.0257	8.86	1.0347	11.08	1.0437	13.29	1.0527
4.34	1.0168	6.66	1.0258	8.88	1.0348	11.10	1.0438	13.31	1.0528
4.36	1.0169	6.69	1.0259	8.91	1.0349	11.13	1.0439	13.34	1.0529
						11.15	1.0440	13.36	1.0530
4.39	1.0170	6.71	1.0260	8.94	1.0350				
4.42	1.0171	6.74	1.0261	8.97	1.0351	11.18	1.0441	13.38	1.0531
4.44	1.0172	6.77	1.0262	8.99	1.0352	11.20	1.0442	13.41	1.0532
4.47	1.0173	6.80	1.0263	9.02	1.0353	11.23	1.0443	13.43	1.0533
4.50	1.0174	6.82	1.0264	9.05	1.0354	11.25	1.0444	13.46	1.0534
4.53	1.0175	6.85	1.0265	9.07	1.0355	11.28	1.0445	13.48	1.0535
4.55	1.0176	6.88	1.0266	9.10	1.0356	11.30	1.0446	13.51	1.0536
4.58	1.0177	6.91	1.0267	9.13	1.0357	11.33	1.0447	13.53	1.0537
4.61	1.0178	6.93	1.0268	9.15	1.0358	11.35	1.0448	13.56	1.0538
4.63	1.0179	6.96	1.0269	9.18	1.0359	11.38	1.0449	13.58	1.0539
								13.61	1.0540
4.66	1.0180	6.99	1.0270	9.21	1.0360	11.40	1.0450		
4.69	1.0181	7.01	1.0271	9.24	1.0361	11.43	1.0451	13.63	1.0541
4.71	1.0182	7.04	1.0272	9.26	1.0362	11.45	1.0452	13.66	1.0542
4.74	1.0183	7.07	1.0273	9.29	1.0363	11.48	1.0453	13.68	1.0543
4.77	1.0184	7.10	1.0274	9.31	1.0364	11.50	1.0454	13.71	1.0544
4.79	1.0185	7.12	1.0275	9.34	1.0365	11.53	1.0455	13.73	1.0545
4.82	1.0186	7.15	1.0276	9.36	1.0366	11.55	1.0456	13.76	1.0546
4.85	1.0187	7.18	1.0277	9.38	1.0367	11.57	1.0457	13.78	1.0547
4.88	1.0188	7.21	1.0278	9.41	1.0368	11.60	1.0458	13.81	1.0548
4.90	1.0189	7.23	1.0279	9.43	1.0369	11.62	1.0459	13.83	1.0549

TABLE IV.—*Specific Gravity at 60° F., Corresponding to Readings of Balling's Saccharometer*—Continued

Balling	Specific gravity	Balling	Specific gravity	Balling	Specific gravity	Balling	Specific gravity	Balling	Specific gravity
13.86	1.0550	15.69	1.0625	17.43	1.0698	19.04	1.0771	22.8	1.0940
13.88	1.0551	15.72	1.0626	17.45	1.0699	19.06	1.0772	22.9	1.0944
13.91	1.0552	15.74	1.0627	17.48	1.0700	19.08	1.0773	23.0	1.0949
13.93	1.0553	15.76	1.0628			19.10	1.0774	23.1	1.0953
13.96	1.0554	15.78	1.0629	17.50	1.0701	19.12	1.0775	23.2	1.0958
13.98	1.0555	15.80	1.0630	17.52	1.0702	19.14	1.0776	23.3	1.0962
14.01	1.0556			17.54	1.0703	19.17	1.0777	23.4	1.0967
14.03	1.0557	15.83	1.0631	17.57	1.0704	19.19	1.0778		
14.06	1.0558	15.85	1.0632	17.59	1.0705	19.21	1.0779	23.5	1.0971
14.08	1.0559	15.87	1.0633	17.61	1.0706	19.23	1.0780	23.6	1.0976
14.11	1.0560	15.89	1.0634	17.63	1.0707			23.7	1.0980
		15.92	1.0635	17.66	1.0708	19.25	1.0781	23.8	1.0985
14.13	1.0561	15.94	1.0636	17.68	1.0709	19.27	1.0782		
14.16	1.0562	15.96	1.0637	17.70	1.0710	19.29	1.0783	23.9	1.0990
14.18	1.0563	15.98	1.0638			19.31	1.0784	24.0	1.0994
14.21	1.0564	16.01	1.0639	17.72	1.0711			24.1	1.0999
14.23	1.0565	16.03	1.0640	17.75	1.0712	19.33	1.0785	24.2	1.1003
14.26	1.0566			17.77	1.0713	19.36	1.0786	24.3	1.1008
14.28	1.0567	16.05	1.0641	17.79	1.0714	19.38	1.0787	24.4	1.1012
14.31	1.0568	16.07	1.0642	17.81	1.0715	19.40	1.0788	24.5	1.1017
14.33	1.0569	16.09	1.0643	17.84	1.0716	19.42	1.0789	24.6	1.1022
14.36	1.0570	16.12	1.0644	17.86	1.0717	19.44	1.0790	24.7	1.1026
14.38	1.0571	16.14	1.0645	17.78	1.0718	19.46	1.0791	24.8	1.1031
14.41	1.0572	16.16	1.0646	17.90	1.0719	19.49	1.0792		
14.44	1.0573	16.18	1.0647	17.93	1.0720	19.51	1.0793	24.9	1.1035
14.46	1.0574	16.21	1.0648			19.53	1.0794	25.0	1.1040
14.49	1.0575	16.23	1.0649	17.95	1.0721			25.1	1.1045
14.52	1.0576	16.25	1.0650	17.97	1.0722	19.56	1.0795	25.2	1.1049
14.54	1.0577			17.99	1.0723	19.58	1.0796	25.3	1.1054
14.57	1.0578	16.27	1.0651	18.02	1.0724	19.60	1.0797	25.4	1.1058
14.59	1.0579	16.30	1.0652	18.04	1.0725	19.63	1.0798	25.5	1.1063
14.62	1.0580	16.32	1.0653	18.06	1.0726	19.65	1.0799	25.6	1.1068
		16.35	1.0654	18.08	1.0727	19.67	1.0800	25.7	1.1072
14.65	1.0581	16.37	1.0655	18.11	1.0728	19.70	1.0801	25.8	1.1077
14.67	1.0582	16.40	1.0656	18.13	1.0729	19.72	1.0802		
14.70	1.0583	16.42	1.0657	18.15	1.0730	19.74	1.0803	25.9	1.1082
14.73	1.0584	16.45	1.0658			19.77	1.0804	26.0	1.1086
14.75	1.0585	16.47	1.0659	18.17	1.0731			26.1	1.1091
14.78	1.0586	16.50	1.0660	18.20	1.0732	19.79	1.0805	26.2	1.1096
14.81	1.0587			18.22	1.0733	19.81	1.0806	26.3	1.1100
14.83	1.0588	16.52	1.0661	18.24	1.0734	19.84	1.0807	26.4	1.1105
14.86	1.0589	16.54	1.0662	18.26	1.0735	19.86	1.0808	26.5	1.1109
14.89	1.0590	16.57	1.0663	18.29	1.0736	19.88	1.0809	26.6	1.1114
		16.59	1.0664	18.31	1.0737	19.91	1.0810	26.7	1.1119
14.91	1.0591	16.62	1.0665	18.33	1.0738	19.93	1.0811	26.8	1.1123
14.94	1.0592	16.64	1.0666	18.35	1.0739	19.96	1.0812		
14.96	1.0593	16.67	1.0667	18.38	1.0740	19.98	1.0813	26.9	1.1128
14.99	1.0594	16.69	1.0668			20.0	1.0814	27.0	1.1133
15.02	1.0595	16.72	1.0669	18.40	1.0741			27.1	1.1137
15.04	1.0596	16.74	1.0670	18.42	1.0742	20.1	1.0818	27.2	1.1142
15.07	1.0597			18.44	1.0743	20.2	1.0823	27.3	1.1147
15.09	1.5988	16.76	1.0671	18.47	1.0744	20.3	1.0827	27.4	1.1151
15.11	1.0599	16.79	1.0672	18.49	1.0745			27.5	1.1155
15.14	1.0600	16.81	1.0673	18.51	1.0746	20.4	1.0832	27.6	1.1161
15.16	1.0601	16.84	1.0674	18.53	1.0747	20.5	1.0836	27.7	1.1166
15.18	1.0602	16.86	1.0675	18.55	1.0748	20.6	1.0841	27.8	1.1170
15.20	1.0603	16.89	1.0676	18.57	1.0749	20.7	1.0845	27.9	1.1175
15.23	1.0604	16.91	1.0677	18.59	1.0750	20.8	1.0850	28.0	1.1180
15.25	1.0605	16.94	1.0678	18.62	1.0751	20.9	1.0854	28.1	1.1184
15.27	1.0606	16.96	1.0679	18.64	1.0752	21.0	1.0859	28.2	1.1189
15.29	1.0607	16.99	1.0680	18.66	1.0753	21.1	1.0863		
15.31	1.0608	17.01	1.0681	18.68	1.0754	21.2	1.0867	28.3	1.1194
15.34	1.0609	17.03	1.0682	18.70	1.0755	21.3	1.0872	28.4	1.1198
15.36	1.0610	17.06	1.0683	18.72	1.0756	21.4	1.0876	28.5	1.1203
15.38	1.0611	17.08	1.0684	18.74	1.0757			28.6	1.1208
15.40	1.0612	17.11	1.0685	18.76	1.0758	21.5	1.0881	28.7	1.1213
15.43	1.0613	17.13	1.0686	18.78	1.0759	21.6	1.0885	28.8	1.1217
15.45	1.0614	17.16	1.0687	18.81	1.0760	21.7	1.0889	28.9	1.1220
15.47	1.0615	17.18	1.0688			21.8	1.0894	29.0	1.1227
15.49	1.0616	17.21	1.0689	18.83	1.0761	21.9	1.0899	29.1	1.1232
15.52	1.0617	17.23	1.0690	18.85	1.0762	22.0	1.0903	29.2	1.1236
15.54	1.0618			18.87	1.0763	22.1	1.0908	29.3	1.1241
15.56	1.0619	17.25	1.0691	18.89	1.0764	22.2	1.0912	29.4	1.1246
15.58	1.0620	17.28	1.0692	18.91	1.0765	22.3	1.0917	29.5	1.1251
		17.30	1.0693	18.93	1.0766	22.4	1.0921	29.6	1.1255
15.60	1.0621	17.33	1.0694	18.95	1.0767			29.7	1.1260
15.63	1.0622	17.35	1.0695	18.97	1.0768	22.5	1.0926	29.8	1.1265
15.65	1.0623	17.38	1.0696	19.00	1.0769	22.6	1.0931	29.9	1.1270
15.67	1.0624	17.40	1.0697	19.02	1.0770	22.7	1.0935	30.0	1.1274

Table V.—*Specific gravity at* $\frac{60°}{60°}$ *F.* $\left(\frac{15°.56}{15°.56}\ C.\right)$ *of mixtures (by volume) of ethyl alcohol and water*

[From circular of the United States Bureau of Standards No. 19, April 1, 1913]

Per cent alcohol by volume at 60° F.	Tenths of per cent									
	0	1	2	3	4	5	6	7	8	9
0	1.00000	*985	*970	*955	*940	*925	*910	*895	*880	*865
1	.99850	835	820	806	791	776	761	747	732	717
2	.99703	688	674	659	645	630	616	602	587	573
3	.99559	545	531	516	502	488	474	460	446	432
4	.99419	405	391	378	364	350	336	323	309	296
5	.99282	269	255	242	228	215	202	189	176	163

* Indicates change in first two decimal places. See next line, column 0.

Table V.—*Specific gravity at* $\frac{60°}{60°}$ *F.* $\left(\frac{15°.56}{15°.56}\ C.\right)$ *of mixtures (by volume) of ethyl alcohol and water*—Continued

[From circular of the United States Bureau of Standards No. 19, April 1, 1913]

Per cent alcohol by volume at 60° F.	Tenths of per cent									
	0	1	2	3	4	5	6	7	8	9
6	0.99150	137	124	111	098	085	073	060	047	035
7	.99022	009	*997	*984	*972	*960	*947	*935	*923	*911
8	.98899	887	875	863	851	838	826	814	803	791
9	.98779	767	755	743	731	720	708	696	684	672
10	.98661	649	637	625	614	602	590	579	567	556
11	.98544	532	521	509	498	487	475	464	452	441
12	.98430	419	408	396	385	374	363	352	341	330
13	.98319	308	297	286	275	264	254	243	232	221
14	.98210	200	190	179	168	157	147	136	125	115
15	.98104	093	083	072	062	051	040	030	019	009
16	.97998	988	977	967	956	946	*936	925	915	905
17	.97895	885	875	864	854	844	834	824	814	804
18	.97794	784	774	764	754	744	734	724	714	704
19	.97694	684	674	654	654	645	635	625	615	605
20	.97596	586	576	566	556	546	536	526	516	506
21	.97496	486	476	466	456	446	436	425	415	405
22	.97395	385	375	365	354	344	334	324	313	303
23	.97293	283	272	262	252	241	231	221	210	200
24	.97189	179	168	158	147	137	126	116	105	095
25	.97084	073	063	052	042	031	020	010	*999	*988
26	.96978	967	957	946	935	924	914	903	892	881
27	.96870	859	848	837	826	815	804	793	782	771
28	.96760	749	738	727	715	704	693	682	671	659
29	.96648	637	625	614	603	591	580	568	557	546
30	.96534	522	511	499	488	476	464	453	441	429
31	.96418	406	394	382	370	358	346	334	321	309
32	.96296	284	271	259	246	234	221	209	196	183
33	.96170	157	144	132	119	106	093	080	067	054
34	.96041	028	015	002	*988	*975	*962	*948	*935	*921
35	.95908	894	881	867	854	840	826	812	798	784
36	.95770	756	742	728	714	700	685	671	657	643
37	.95628	614	599	585	570	556	541	526	512	497
38	.95482	467	452	437	423	408	393	378	362	347
39	.95332	317	302	286	271	256	240	225	209	194
40	.95178	162	147	131	115	100	084	068	052	036
41	.95020	004	*988	*972	*956	*940	*923	*907	*891	*875
42	.94858	842	825	809	792	776	759	743	726	710
43	.94693	676	660	643	626	609	592	575	558	541
44	.94524	507	490	473	455	438	421	403	386	369
45	.94351	334	316	298	281	263	245	228	210	192
46	.94174	156	138	120	102	084	066	048	030	011
47	.93993	975	956	938	920	901	883	864	845	827
48	.93808	789	771	752	733	714	695	676	657	638
49	.93619	600	581	562	543	523	504	485	465	446
50	.93426	407	387	368	348	328	309	289	270	250
51	.93230	210	190	171	151	131	111	091	071	051
52	.93031	011	*991	*971	*951	*931	*911	*820	*870	*850
53	.92830	810	789	769	749	728	708	688	677	647

*Indicates change in first two decimal places. See next line, column 0.

Table V.—*Specific gravity at* $\frac{60°}{60°}$ *F.* $\left(\frac{15°.56}{15°.56}\ C.\right)$ *of mixtures (by volume) of ethyl alcohol and water*—Continued

[From circular of the United States Bureau of Standards No. 19, April 1, 1913]

Per cent alcohol by volume at 60° F.	Tenths of per cent									
	0	1	2	3	4	5	6	7	8	9
54	0.92626	605	585	564	544	523	502	482	461	440
55	.92419	398	377	357	336	315	294	273	252	231
56	.92210	189	168	147	126	105	084	062	041	020
57	.91999	978	956	935	914	892	871	849	827	806
58	.91784	762	741	719	697	675	653	631	610	588
59	.91565	543	521	499	477	455	433	410	388	366
60	.91344	322	299	277	255	232	210	188	165	143
61	.91120	097	075	052	030	007	*984	*962	*939	*916
62	.90893	870	847	825	802	779	756	733	710	687
63	.90664	641	618	595	572	549	526	503	480	457
64	.90434	411	388	365	341	318	235	272	249	225
65	.90202	179	155	132	108	085	061	038	014	*991
66	.89967	943	920	896	872	848	825	801	777	753
67	.89729	705	681	657	633	609	585	561	537	513
68	.89489	465	441	416	392	368	343	319	295	270
69	.89245	220	196	171	147	122	098	073	048	024
70	.88999	974	950	925	900	875	850	825	801	776
71	.88751	725	700	675	650	625	600	574	549	524
72	.88499	474	448	423	397	372	346	321	296	270
73	.88244	218	193	167	141	116	090	064	039	013
74	.87987	961	935	910	884	858	832	806	780	754
75	.87728	702	676	650	623	597	571	545	518	492
76	.87465	439	412	386	359	332	306	279	252	226
77	.87199	172	145	118	092	065	038	011	*984	*957
78	.86929	902	875	847	820	793	766	738	711	684
79	.86656	629	601	574	546	518	491	463	435	408
80	.86380	352	324	296	269	241	213	185	157	129
81	.86100	072	044	015	*987	*959	*931	*902	*874	*846
82	.85817	789	760	732	703	674	646	617	588	560
83	.85531	502	473	444	415	386	357	328	299	270
84	.85240	211	181	152	122	093	063	033	004	*974
85	.84944	914	884	854	824	794	764	734	703	673
86	.84642	612	581	551	520	490	459	428	398	367
87	.84336	305	274	243	212	181	150	119	088	056
88	.84025	*994	*962	*930	*899	*867	*835	*803	*771	*739
89	.83707	675	643	610	578	545	513	480	447	415
90	.83382	349	315	282	249	216	183	150	116	083
91	.83049	015	*981	*947	*913	*879	*845	*810	*776	*741
92	.82705	670	635	600	565	529	494	458	423	387
93	.82351	315	279	243	206	170	133	096	059	022
94	.81984	947	909	871	834	796	757	719	681	642
95	.81603	564	525	486	446	407	367	327	287	247
96	.81206	165	125	084	042	001	*960	*918	*876	*834
97	.80792	750	707	664	620	577	533	489	445	401
98	.80356	311	265	219	173	127	080	033	*985	*937
99	.79889	841	792	743	693	643	593	543	492	441
100	.79389									

*Indicates change in first two decimal places. See next line, column 0.

TABLE VI.—*Temperature Corrections to Readings of Alcoholometers (Standard at 60° F.)*

[From circular of the United States Bureau of Standards, April 1, 1913]

[This table is calculated from the same data on the thermal expansion of ethyl alcohol as that from which Tables 2, 3, 4, 6, 7, and 8 are calculated. The hydrometer is assumed to be of Jena 16III glass. For the per cents not given between 40 and 80, linear interpolation of the tabulated corrections will give results sufficiently exact for most purposes]

Observed temperature in degrees Fahrenheit	Observed per cent alcohol by volume																							
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
	Add to observed per cent alcohol																							
50	0.37	0.38	0.39	0.40	0.42	0.45	0.48	0.52	0.56	0.61	0.66	0.74	0.81	0.90	0.99	1.09	1.19	1.30	1.41	1.52	1.62	1.72	1.82	1.90	1.98
51	.34	.35	.36	.37	.39	.41	.44	.47	.51	.56	.51	.68	.75	.82	.90	.99	1.08	1.18	1.28	1.38	1.47	1.56	1.64	1.71	1.79
52	.32	.32	.33	.34	.35	.38	.40	.43	.47	.51	.55	.62	.68	.74	.80	.89	.96	1.06	1.14	1.23	1.31	1.38	1.46	1.52	1.58
53	.29	.30	.30	.31	.32	.34	.36	.39	.42	.46	.49	.55	.60	.65	.71	.78	.85	.94	1.00	1.08	1.15	1.21	1.28	1.34	1.39
54	.26	.26	.26	.27	.28	.29	.32	.34	.36	.40	.43	.48	.52	.57	.62	.68	.74	.81	.86	.94	.99	1.04	1.10	1.15	1.20
55	.22	.22	.23	.23	.24	.25	.27	.29	.31	.34	.37	.40	.44	.48	.52	.57	.62	.68	.72	.78	.83	.87	.92	.96	1.00
56	.18	.18	.18	.18	.19	.20	.22	.24	.25	.28	.30	.33	.36	.38	.42	.46	.49	.54	.58	.63	.67	.69	.74	.77	.80
57	.14	.14	.14	.14	.14	.15	.17	.18	.19	.21	.23	.25	.27	.29	.32	.35	.37	.40	.44	.47	.51	.53	.56	.58	.60
58	.09	.10	.10	.10	.10	.10	.11	.12	.13	.14	.16	.16	.18	.19	.21	.23	.24	.26	.29	.32	.34	.35	.38	.40	.40
59	.05	.05	.05	.05	.05	.05	.06	.06	.06	.07	.08	.08	.09	.10	.11	.12	.12	.13	.14	.16	.17	.18	.19	.20	.20
	Subtract from observed per cent alcohol																							
61		0.05	0.05	0.06	0.06	0.07	0.07	0.07	0.08	0.08	0.08	0.09	0.10	0.10	0.11	0.12	0.13	0.14	0.14	0.15	0.16	0.17	0.17	0.18	0.18
62		.10	.11	.12	.12	.13	.14	.14	.16	.16	.17	.18	.20	.21	.22	.24	.26	.27	.29	.30	.32	.34	.36	.37	.38
63		.16	.17	.18	.19	.20	.20	.21	.23	.24	.25	.27	.29	.31	.32	.35	.38	.41	.44	.46	.49	.51	.53	.55	.56
64		.22	.23	.24	.25	.26	.27	.29	.31	.32	.34	.37	.39	.42	.44	.48	.52	.54	.58	.62	.66	.68	.71	.74	.77
65		.28	.29	.30	.32	.33	.34	.36	.39	.41	.43	.46	.49	.52	.55	.60	.65	.68	.73	.78	.82	.85	.90	.92	.96
66		.34	.35	.36	.38	.40	.42	.44	.47	.50	.52	.56	.59	.63	.66	.71	.77	.82	.88	.94	.98	1.02	1.07	1.11	1.16
67		.41	.42	.43	.45	.47	.50	.52	.55	.58	.61	.65	.70	.74	.78	.84	.90	.96	1.03	1.10	1.15	1.20	1.25	1.30	1.35
68		.48	.48	.50	.52	.54	.57	.60	.64	.67	.71	.75	.80	.85	.91	.97	1.03	1.10	1.18	1.26	1.33	1.38	1.44	1.49	1.54
69		.55	.56	.57	.59	.62	.66	.68	.73	.76	.80	.85	.91	.97	1.02	1.10	1.17	1.25	1.33	1.42	1.48	1.54	1.61	1.66	1.72
70		.62	.63	.64	.67	.70	.74	.77	.81	.86	.90	.96	1.02	1.08	1.14	1.23	1.31	1.40	1.49	1.58	1.65	1.72	1.78	1.84	1.91
72		.77	.78	.80	.83	.86	.90	.94	.99	1.04	1.10	1.16	1.23	1.31	1.39	1.50	1.60	1.70	1.80	1.90	2.00	2.06	2.13	2.20	2.27
74		.93	.94	.96	1.00	1.03	1.09	1.13	1.18	1.25	1.32	1.39	1.46	1.55	1.65	1.76	1.88	1.99	2.10	2.22	2.32	2.41	2.48	2.56	2.65
76			1.10	1.13	1.17	1.21	1.27	1.32	1.38	1.46	1.54	1.61	1.70	1.80	1.91	2.03	2.16	2.28	2.41	2.54	2.65	2.76	2.84	2.93	3.03

TABLE VI.—*Temperature Corrections to Readings of Alcoholometers (Standard at 60° F.)*—Continued

Observed temperature in degrees Fahrenheit	Observed per cent alcohol by volume																								
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
	Add to observed per cent alcohol																								
78	----	----	1.28	1.31	1.35	1.40	1.46	1.52	1.59	1.67	1.76	1.84	1.94	2.05	2.17	2.30	2.44	2.58	2.72	2.86	2.98	3.10	3.20	3.30	3.40
80	----	----	1.46	1.50	1.54	1.60	1.66	1.73	1.80	1.89	1.99	2.09	2.20	2.31	2.44	2.58	2.72	2.87	3.02	3.17	3.33	3.45	3.56	3.67	3.78
82	----	----	1.64	1.69	1.74	1.80	1.87	1.94	2.02	2.12	2.22	2.34	2.45	2.57	2.71	2.86	3.00	3.16	3.33	3.50	3.66	3.79	3.92	4.04	4.18
84	----	----	1.84	1.89	1.94	2.00	2.08	2.16	2.25	2.35	2.47	2.59	2.71	2.84	2.98	3.13	3.29	3.46	3.63	3.81	4.00	4.14	4.28	4.42	4.56
86	----	----	----	2.09	2.15	2.22	2.30	2.39	2.49	2.60	2.72	2.84	2.97	3.11	3.26	3.41	3.58	3.76	3.94	4.13	4.33	4.49	4.65	4.80	4.94
88	----	----	----	2.30	2.37	2.44	2.53	2.62	2.73	2.85	2.98	3.10	3.23	3.38	3.54	3.70	3.88	4.07	4.26	4.46	4.67	4.84	5.00	5.17	5.32
90	----	----	----	2.52	2.59	2.66	2.76	2.86	2.98	3.11	3.24	3.36	3.50	3.66	3.83	4.00	4.18	4.38	4.58	4.78	5.01	5.19	5.36	5.53	5.69
92	----	----	----	2.74	2.82	2.89	3.00	3.11	3.24	3.37	3.51	3.64	3.78	3.94	4.11	4.29	4.48	4.69	4.90	5.12	5.35	5.54	5.72	5.90	6.07
94	----	----	----	2.97	3.04	3.12	3.24	3.36	3.50	3.63	3.78	3.92	4.07	4.23	4.40	4.58	4.79	5.00	5.22	5.46	5.69	5.89	6.08	6.28	6.45
96	----	----	----	----	3.28	3.36	3.49	3.62	3.76	3.90	4.05	4.20	4.36	4.53	4.69	4.87	5.10	5.32	5.55	5.80	6.03	6.24	6.44	6.64	6.82
98	----	----	----	----	3.52	3.60	3.74	3.88	4.03	4.17	4.32	4.50	4.66	4.83	5.00	5.18	5.41	5.64	5.88	6.13	6.38	6.60	6.80	7.02	7.20
100	----	----	----	----	3.76	3.85	4.00	4.15	4.30	4.45	4.60	4.78	4.95	5.13	5.30	5.49	5.72	5.95	6.21	6.46	6.72	6.95	7.17	7.40	7.59

TABLE VII.—*Alcohol Tables for Juerst's Ebulliometer*

Difference between the boiling points	Per cent alcohol by volume	Percent alcohol by weight	Difference between the boiling points	Per cent alcohol by volume	Percent alcohol by weight	Difference between the boiling points	Per cent alcohol by volume	Percent alcohol by weight
0.05	0.05	0.040	0.77	0.78	0.623	3.50	3.88	3.10
.06	.06	.048	.78	.79	.631	3.55	3.94	3.15
.07	.07	.056	.79	.81	.638	3.60	4.00	3.20
.08	.08	.064	.80	.82	.645	3.65	4.07	3.25
.09	.09	.072	.81	.83	.654	3.70	4.14	3.31
.10	.10	.080	.82	.84	.662	3.75	4.21	3.36
.11	.11	.088	.83	.85	.670	3.80	4.27	3.42
.12	.12	.096	.84	.86	.678	3.85	4.34	3.47
.13	.13	.104	.85	.87	.686	3.90	4.41	3.52
.14	.14	.112	.86	.88	.694	3.95	4.47	3.58
.15	.15	.120	.87	.89	.702	4.00	4.53	3.63
.16	.16	.128	.88	.90	.710	4.05	4.60	3.68
.17	.17	.136	.89	.91	.718	4.10	4.67	3.73
.18	.18	.144	.90	.92	.726	4.15	4.74	3.78
.19	.19	.152	.91	.93	.734	4.20	4.80	3.84
.20	.20	.160	.92	.94	.742	4.25	4.87	3.89
.21	.21	.168	.93	.95	.750	4.30	4.93	3.95
.22	.22	.176	.94	.96	.758	4.35	5.00	4.00
.23	.23	.184	.95	.97	.766	4.40	5.08	4.06
.24	.24	.192	.96	.98	.774	4.45	5.15	4.12
.25	.25	.200	.97	.99	.782	4.50	5.22	4.17
.26	.26	.208	.98	1.00	.790	4.55	5.29	4.23
.27	.27	.216	.99	1.01	.800	4.60	5.36	4.29
.28	.28	.224	1.00	1.02	.806	4.65	5.43	4.34
.29	.29	.232	1.10	1.12	.950	4.70	5.50	4.40
.30	.30	.240	1.15	1.17	.990	4.75	5.57	4.45
.31	.31	.248	1.20	1.23	1.030	4.80	5.64	4.51
.32	.32	.256	1.25	1.28	1.014	4.85	5.71	4.57
.33	.33	.264	1.30	1.34	1.062	4.90	5.78	4.62
.34	.34	.272	1.35	1.39	1.102	4.95	5.88	4.68
.35	.35	.280	1.40	1.45	1.150	5.00	5.92	4.74
.36	.36	.288	1.45	1.50	1.190	5.05	5.99	4.79
.37	.37	.296	1.50	1.56	1.238	5.10	6.06	4.85
.38	.38	.304	1.55	1.61	1.278	5.15	6.13	4.90
.39	.39	.312	1.60	1.67	1.326	5.20	6.20	4.96
.40	.40	.320	1.65	1.72	1.366	5.25	6.27	5.02
.41	.41	.328	1.70	1.78	1.414	5.30	6.34	5.07
.42	.42	.336	1.75	1.83	1.454	5.35	6.41	5.13
.43	.43	.344	1.80	1.89	1.502	5.40	6.48	5.19
.44	.44	.352	1.85	1.94	1.542	5.45	6.55	5.25
.45	.45	.360	1.90	1.99	1.582	5.50	6.62	5.31
.46	.46	.369	1.95	2.04	1.622	5.55	6.69	5.36
.47	.47	.377	2.00	2.10	1.670	5.60	6.76	5.42
.48	.48	.386	2.05	2.15	1.710	5.65	6.83	5.48
.49	.49	.395	2.10	2.21	1.758	5.70	6.90	5.53
.50	.51	.404	2.15	2.27	1.806	5.75	6.98	5.59
.51	.52	.413	2.20	2.33	1.854	5.80	7.05	5.65
.52	.53	.422	2.25	2.39	1.902	5.85	7.12	5.71
.53	.54	.431	2.30	2.45	1.950	5.90	7.19	5.77
.54	.55	.440	2.35	2.51	1.998	5.95	7.26	5.83
.55	.56	.448	2.40	2.57	2.046	6.00	7.34	5.89
.56	.57	.456	2.45	2.63	2.092	6.05	7.42	5.95
.57	.58	.464	2.50	2.68	2.13	6.10	7.49	6.01
.58	.59	.472	2.55	2.74	2.18	6.15	7.57	6.07
.59	.60	.480	2.60	2.79	2.23	6.20	7.65	6.14
.60	.61	.488	2.65	2.85	2.27	6.25	7.73	6.21
.61	.62	.496	2.70	2.90	2.31	6.30	7.81	6.27
.62	.63	.504	2.75	2.96	2.36	6.35	7.89	6.34
.63	.64	.512	2.80	3.02	2.41	6.40	7.97	6.40
.64	.65	.520	2.85	3.09	2.46	6.45	8.06	6.47
.65	.66	.528	2.90	3.15	2.51	6.50	8.14	6.54
.66	.67	.536	2.95	3.21	2.56	6.55	8.22	6.60
.67	.68	.544	3.00	3.27	2.61	6.60	8.30	6.67
.68	.69	.552	3.05	3.34	2.66	6.65	8.38	6.73
.69	.70	.560	3.10	3.40	2.72	6.70	8.47	6.80
.70	.71	.568	3.15	3.45	2.76	6.75	8.55	6.87
.71	.72	.576	3.20	3.50	2.80	6.80	8.63	6.93
.72	.73	.584	3.25	3.56	2.85	6.85	8.72	7.00
.73	.74	.592	3.30	3.64	2.91	6.90	8.80	7.07
.74	.75	.600	3.35	3.70	2.96	6.95	8.89	7.14
.75	.76	.608	3.40	3.76	3.01	7.00	8.97	7.20
.76	.77	.615	3.45	3.82	3.06	7.05	9.05	7.27

TABLE VII.—*Alcohol Tables for Juerst's Ebulliometer*—Con.

Difference between the boiling points	Per cent alcohol by volume	Percent alcohol by weight	Difference between the boiling points	Per cent alcohol by volume	Percent alcohol by weight	Difference between the boiling points	Per cent alcohol by volume	Percent alcohol by weight
7.10	9.13	7.34	7.35	9.55	7.68	7.60	9.98	8.02
7.15	9.22	7.41	7.40	9.63	7.75	7.65	10.07	8.09
7.20	9.30	7.48	7.45	9.72	7.82	7.70	10.16	8.17
7.25	9.39	7.55	7.50	9.80	7.88	7.75	10.25	8.24
7.30	9.47	7.62	7.55	9.89	7.95			

TABLE VIII.—*Alcohol Tables for Lefco Ebulliometer*

Corrected boiling point ° C.	Per cent alcohol by volume	Per cent alcohol by weight	Corrected boiling point ° C.	Per cent alcohol by volume	Per cent alcohol by weight	Corrected boiling point ° C.	Per cent alcohol by volume	Per cent alcohol by weight
100.00	0.00	0.00	97.30	2.93	2.32	94.60	6.46	5.16
99.95	0.05	0.04	.25	3.00	2.38	.55	6.57	5.25
.90	0.10	0.08	.20	3.06	2.43	.50	6.60	5.27
.85	0.15	0.12	.15	3.11	2.47	.45	6.68	5.33
.80	0.20	0.16	.10	3.17	2.52	.40	6.74	5.38
.75	0.25	0.20	.05	3.22	2.56	.35	6.82	5.45
.70	0.30	0.24	97.00	3.28	2.60	.30	6.89	5.50
.65	0.35	0.28	96.95	3.33	2.64	.25	6.97	5.57
.60	0.40	0.32	.90	3.39	2.68	.20	7.04	5.62
.55	0.45	0.36	.85	3.44	2.73	.15	7.11	5.68
.50	0.50	0.40	.80	3.50	2.78	.10	7.19	5.74
.45	0.56	0.45	.75	3.56	2.83	.05	7.27	5.81
.40	0.61	0.48	.70	3.62	2.88	94.00	7.35	5.87
.35	0.67	0.53	.65	3.68	2.93	93.95	7.43	5.93
.30	0.72	0.57	.60	3.74	2.97	.90	7.51	6.00
.25	0.77	0.61	.55	3.81	3.03	.85	7.59	6.06
.20	0.83	0.66	.50	3.87	3.07	.80	7.67	6.13
.15	0.89	0.70	.45	3.94	3.13	.75	7.75	6.19
.10	0.94	0.74	.40	4.00	3.18	.70	7.83	6.26
.05	1.00	0.79	.35	4.07	3.24	.65	7.90	6.32
99.00	1.05	0.83	.30	4.12	3.28	.60	7.98	6.38
98.95	1.10	0.87	.25	4.19	3.33	.55	8.06	6.45
.90	1.15	0.91	.20	4.25	3.38	.50	8.14	6.51
.85	1.20	0.95	.15	4.33	3.44	.45	8.22	6.58
.80	1.25	0.99	.10	4.39	3.49	.40	8.30	6.64
.75	1.30	1.03	.05	4.45	3.54	.35	8.38	6.70
.70	1.36	1.08	96.00	4.52	3.60	.30	8.46	6.77
.65	1.41	1.12	95.95	4.59	3.65	.25	8.59	6.87
.60	1.46	1.16	.90	4.66	3.71	.20	8.60	6.88
.55	1.52	1.21	.85	4.73	3.76	.15	8.70	6.96
.50	1.57	1.25	.80	4.80	3.82	.10	8.78	7.02
.45	1.63	1.29	.75	4.87	3.88	.05	8.86	7.09
.40	1.66	1.32	.70	4.93	3.92	93.00	8.94	7.15
.35	1.73	1.37	.65	5.00	3.98	92.95	9.02	7.22
.30	1.79	1.42	.60	5.06	4.03	.90	9.10	7.29
.25	1.84	1.46	.55	5.14	4.09	.85	9.18	7.35
.20	1.90	1.51	.50	5.21	4.15	.80	9.26	7.42
.15	1.95	1.55	.45	5.28	4.20	.75	9.35	7.49
.10	2.00	1.59	.40	5.37	4.28	.70	9.43	7.55
.05	2.06	1.64	.35	5.43	4.32	.65	9.51	7.62
98.00	2.11	1.68	.30	5.50	4.38	.60	9.60	7.69
97.95	2.17	1.73	.25	5.57	4.44	.55	9.68	7.75
.90	2.22	1.77	.20	5.66	4.51	.50	9.77	7.83
.85	2.28	1.80	.15	5.71	4.55	.45	9.85	7.89
.80	2.33	1.84	.10	5.77	4.60	.40	9.93	7.95
.75	2.39	1.89	.05	5.86	4.67	.35	10.02	8.04
.70	2.45	1.94	95.00	5.93	4.72	.30	10.11	8.11
.65	2.50	1.98	94.95	6.00	4.78	.25	10.19	8.17
.60	2.56	2.03	.90	6.07	4.84	.20	10.28	8.25
.55	2.63	2.08	.85	6.13	4.89	.15	10.37	8.32
.50	2.69	2.13	.80	6.19	4.94	.10	10.45	8.38
.45	2.75	2.18	.75	6.26	5.00	.05	10.54	8.45
.40	2.81	2.23	.70	6.33	5.05	92.00	10.63	8.52
.35	2.87	2.28	.65	6.39	5.10	91.95	10.72	8.60

TABLE VIII.—*Alcohol Tables for Lefco Ebulliometer*—Con.

Corrected boiling point ° C.	Per cent alcohol by volume	Per cent alcohol by weight	Corrected boiling point ° C.	Per cent alcohol by volume	Per cent alcohol by weight	Corrected boiling point ° C.	Per cent alcohol by volume	Per cent alcohol by weight
91.90	10.81	8.67	90.10	14.34	11.55	88.30	19.14	15.50
.85	10.89	8.74	.05	14.46	11.65	.25	19.28	15.62
.80	10.98	8.82	90.00	14.58	11.75	.20	19.42	15.79
.75	11.07	8.89	89.95	14.70	11.85	.15	19.56	15.84
.70	11.16	8.96	.90	14.82	11.95	.10	19.71	15.98
.65	11.25	9.03	.85	14.93	12.03	.05	19.85	16.05
.60	11.34	9.10	.80	15.05	12.13	88.00	20.00	16.21
.55	11.43	9.17	.75	15.17	12.23	87.95	20.15	16.34
.50	11.51	9.24	.70	15.30	12.34	.90	20.32	16.48
.45	11.60	9.32	.65	15.43	12.44	.85	20.48	16.61
.40	11.69	9.39	.60	15.56	12.55	.80	20.69	16.79
.35	11.78	9.46	.55	15.69	12.66	.75	20.81	16.89
.30	11.87	9.54	.50	15.82	12.77	.70	20.97	17.02
.25	11.96	9.61	.45	15.94	12.86	.65	21.13	17.15
.20	12.06	9.69	.40	16.08	12.98	.60	21.29	17.28
.15	12.16	9.77	.35	16.21	13.09	.55	21.46	17.43
.10	12.26	9.85	.30	16.35	13.20	.50	21.62	17.56
.05	12.36	9.94	.25	16.48	13.31	.45	21.79	17.70
91.00	12.46	10.02	.20	16.62	13.43	.40	22.00	17.88
90.95	12.56	10.10	.15	16.75	13.53	.35	22.17	18.02
.90	12.66	10.18	.10	16.89	13.65	.30	22.35	18.17
.85	12.76	10.26	.05	17.03	13.77	.25	22.52	18.31
.80	12.86	10.34	89.00	17.16	13.87	.20	22.70	18.46
.75	12.96	10.43	88.95	17.30	13.98	.15	22.87	18.60
.70	13.06	10.51	.90	17.44	14.10	.10	23.04	18.74
.65	13.16	10.59	.85	17.58	14.21	.05	23.22	18.90
.60	13.26	10.67	.80	17.72	14.33	87.00	23.40	19.04
.55	13.37	10.75	.75	17.86	14.45	86.95	23.58	19.19
.50	13.47	10.84	.70	18.00	14.56	.90	23.76	19.34
.45	13.58	10.93	.65	18.14	14.67	.85	23.93	19.48
.40	13.68	11.01	.60	18.23	14.75	.80	24.12	19.65
.35	13.79	11.10	.55	18.42	14.91	.75	24.32	19.82
.30	13.89	11.18	.50	18.57	15.03	.70	24.53	19.98
.25	14.00	11.28	.45	18.71	15.15	.65	24.73	20.15
.20	14.11	11.37	.40	18.86	15.27	.60	24.93	20.32
.15	14.22	11.45	.35	19.00	15.39	.55	25.12	20.49

TABLE IX

Number of Wine Gallons of Brandy To Be Added to 100 Wine Gallons of Wine Containing 1 Per Cent of Alcohol

Percent of alcohol in brandy	To produce a resulting fortified wine containing per cent of alcohol													
	14	13	12	11	10	9	8	7	6	5	4	3	2	1
95	16.04	14.63	13.25	11.90	10.58	9.30	8.04	6.81	5.61	4.44	3.29	2.17	1.07	0
94	16.25	14.81	13.41	12.04	10.71	9.41	8.13	6.89	5.68	4.49	3.33	2.19	1.08	0
93	16.45	15.00	13.58	12.19	10.84	9.52	8.23	6.97	5.74	4.54	3.37	2.22	1.09	0
92	16.66	15.18	13.75	12.34	10.97	9.63	8.33	7.05	5.81	4.59	3.40	2.24	1.11	0
91	16.88	15.38	13.92	12.50	11.11	9.75	8.43	7.14	5.88	4.65	3.44	2.27	1.12	0
90	17.10	15.58	14.10	12.66	11.25	9.87	8.53	7.23	5.95	4.70	3.49	2.30	1.13	0
89	17.33	15.80	14.28	12.82	11.40	10.00	8.64	7.31	6.02	4.76	3.52	2.32	1.15	0
88	17.56	16.00	14.47	12.99	11.53	10.12	8.75	7.40	6.09	4.82	3.57	2.35	1.16	0
87	17.80	16.21	14.66	13.16	11.70	10.25	8.86	7.50	6.17	4.87	3.61	2.38	1.17	0
86	18.05	16.43	14.86	13.33	11.84	10.40	8.97	7.60	6.25	4.93	3.65	2.41	1.19	0
85	18.31	16.66	15.06	13.51	12.00	10.52	9.09	7.70	6.33	5.00	3.70	2.44	1.20	0
84	18.57	16.90	15.27	13.70	12.16	10.66	9.21	7.79	6.41	5.06	3.75	2.47	1.22	0
83	18.84	17.14	15.50	13.89	12.33	10.81	9.33	7.90	6.50	5.12	3.80	2.50	1.23	0
82	19.11	17.40	15.71	14.08	12.50	10.96	9.46	8.00	6.58	5.20	3.84	2.53	1.25	0
81	19.40	17.64	15.94	14.29	12.67	11.11	9.57	8.10	6.66	5.26	3.90	2.56	1.27	0
80	19.70	17.91	16.17	14.49	12.87	11.26	9.72	8.22	6.75	5.33	3.94	2.60	1.28	0
79	20.00	18.18	16.41	14.71	13.04	11.42	9.86	8.33	6.85	5.40	4.00	2.63	1.30	0
78	20.31	18.46	16.66	14.93	13.23	11.59	10.00	8.45	6.94	5.48	4.05	2.66	1.32	0
77	20.63	18.75	16.92	15.15	13.43	11.76	10.14	8.57	7.04	5.55	4.10	2.70	1.33	0
76	20.96	19.04	17.18	15.30	13.63	11.94	10.29	8.69	7.14	5.63	4.16	2.74	1.35	0
75	21.31	19.35	17.46	15.63	13.84	12.12	10.44	8.82	7.24	5.71	4.22	2.77	1.37	0
74	21.66	19.67	17.74	15.87	14.06	12.30	10.60	8.95	7.35	5.79	4.28	2.81	1.39	0
73	22.03	20.00	18.03	16.13	14.28	12.50	10.76	9.09	7.46	5.88	4.34	2.85	1.41	0
72	22.41	20.33	18.33	16.39	14.51	12.69	10.93	9.23	7.57	5.97	4.41	2.89	1.43	0
71	22.80	20.69	18.64	16.66	14.75	12.90	11.11	9.37	7.69	6.06	4.47	2.94	1.45	0
70	23.21	21.05	18.96	16.95	15.00	13.11	11.29	9.52	7.81	6.15	4.54	2.98	1.47	0
69	23.63	21.43	19.30	17.24	15.25	13.33	11.47	9.67	7.93	6.25	4.61	3.03	1.49	0
68	24.07	21.81	19.64	17.54	15.51	13.55	11.66	9.83	8.06	6.35	4.68	3.07	1.52	0
67	24.52	22.22	20.00	17.86	15.79	13.79	11.86	10.00	8.19	6.45	4.76	3.12	1.54	0
66	25.00	22.64	20.37	18.18	16.07	14.03	12.07	10.17	8.33	6.55	4.84	3.17	1.56	0
65	25.49	23.07	20.75	18.52	16.36	14.28	12.28	10.34	8.47	6.66	4.91	3.22	1.59	0
64	26.00	23.53	21.15	18.87	16.66	14.54	12.50	10.52	8.62	6.78	5.00	3.27	1.61	0
63	26.53	24.00	21.56	19.23	16.98	14.83	12.72	10.71	8.77	6.90	5.08	3.33	1.64	0
62	27.08	24.49	22.00	19.61	17.38	15.09	12.96	10.90	8.93	7.01	5.17	3.40	1.66	0
61	27.66	25.00	22.45	20.00	17.64	15.38	13.20	11.11	9.09	7.14	5.26	3.44	1.69	0
60	28.26	25.53	22.91	20.41	18.00	15.68	13.46	11.32	9.26	7.27	5.36	3.50	1.72	0
59	28.88	26.08	23.40	20.83	18.36	16.00	13.72	11.53	9.43	7.40	5.45	3.57	1.75	0
58	29.54	26.66	23.91	21.28	18.75	16.32	14.00	11.76	9.61	7.55	5.55	3.63	1.79	0
57	30.23	27.27	24.44	21.74	19.15	16.66	14.29	12.00	9.80	7.69	5.66	3.70	1.82	0
56	30.95	27.88	25.00	22.22	19.56	17.01	14.58	12.24	10.00	7.84	5.77	3.77	1.85	0
55	31.70	28.57	25.58	22.72	20.00	17.39	14.89	12.50	10.20	8.00	5.88	3.84	1.89	0
54	32.50	29.26	26.19	23.26	20.45	17.77	15.21	12.76	10.41	8.16	6.00	3.92	1.92	0
53	33.33	30.00	26.82	23.81	20.93	18.18	15.55	13.04	10.64	8.33	6.12	4.00	1.96	0
52	34.21	30.77	27.50	24.39	21.42	18.60	15.90	13.33	10.87	8.51	6.25	4.08	2.00	0
51	35.13	31.58	28.20	25.00	21.95	19.04	16.28	13.63	11.11	8.69	6.38	4.16	2.04	0
50	36.11	32.43	28.95	25.64	22.50	19.51	16.66	13.95	11.36	8.88	6.51	4.25	2.08	0

TABLE IX—Continued

Number of Wine Gallons of Brandy To Be Added to 100 Wine Gallons of Wine Containing 2 Per Cent of Alcohol

Per cent of alcohol in brandy	To produce a resulting fortified wine containing per cent of alcohol													
	15	14	13	12	11	10	9	8	7	6	5	4	3	2
95	16.25	14.81	13.41	12.04	10.71	9.41	8.13	6.89	5.68	4.49	3.33	2.19	1.08	0
94	16.45	15.00	13.58	12.19	10.84	9.52	8.23	6.97	5.74	4.54	3.37	2.22	1.09	0
93	16.66	15.18	13.75	12.34	10.97	9.63	8.33	7.05	5.81	4.59	3.40	2.24	1.11	0
92	16.88	15.38	13.92	12.50	11.11	9.75	8.43	7.14	5.88	4.65	3.44	2.27	1.12	0
91	17.10	15.58	14.10	12.65	11.25	9.87	8.53	7.21	5.95	4.70	3.48	2.29	1.13	0
90	17.33	15.80	14.28	12.82	11.40	10.00	8.64	7.31	6.02	4.76	3.52	2.32	1.15	0
89	17.56	16.00	14.47	12.99	11.53	10.12	8.75	7.40	6.09	4.82	3.57	2.35	1.16	0
88	17.80	16.21	14.66	13.16	11.70	10.25	8.86	7.50	6.17	4.87	3.61	2.38	1.17	0
87	18.05	16.43	14.86	13.33	11.84	10.40	8.97	7.60	6.25	4.93	3.65	2.41	1.19	0
86	18.31	16.66	15.06	13.51	12.00	10.52	9.09	7.70	6.33	5.00	3.70	2.44	1.20	0
85	18.57	16.90	15.27	13.70	12.16	10.66	9.21	7.79	6.41	5.06	3.75	2.47	1.22	0
84	18.84	17.14	15.50	13.89	12.33	10.81	9.33	7.90	6.50	5.12	3.80	2.50	1.23	0
83	19.11	17.40	15.71	14.08	12.50	10.96	9.46	8.00	6.58	5.20	3.84	2.53	1.25	0
82	19.40	17.64	15.94	14.29	12.67	11.11	9.57	8.10	6.66	5.26	3.90	2.56	1.27	0
81	19.70	17.91	16.17	14.49	12.87	11.26	9.72	8.22	6.75	5.33	3.94	2.60	1.28	0
80	20.00	18.18	16.41	14.71	13.04	11.42	9.86	8.33	6.85	5.40	4.00	2.63	1.30	0
79	20.31	18.46	16.66	14.93	13.23	11.59	10.00	8.45	6.94	5.48	4.05	2.66	1.32	0
78	20.63	18.75	16.92	15.15	13.43	11.76	10.14	8.57	7.04	5.55	4.10	2.70	1.33	0
77	20.96	19.04	17.18	15.39	13.63	11.94	10.29	8.69	7.14	5.63	4.16	2.74	1.35	0
76	21.31	19.35	17.46	15.63	13.84	12.12	10.44	8.82	7.24	5.71	4.22	2.77	1.37	0
75	21.66	19.67	17.74	15.87	14.06	12.30	10.60	8.95	7.35	5.79	4.28	2.81	1.39	0
74	22.03	20.00	18.03	16.13	14.28	12.50	10.76	9.09	7.46	5.88	4.34	2.85	1.41	0
73	22.41	20.33	18.33	16.39	14.51	12.69	10.93	9.23	7.57	5.97	4.41	2.89	1.43	0
72	22.80	20.69	18.64	16.66	14.75	12.90	11.11	9.37	7.69	6.06	4.47	2.94	1.45	0
71	23.21	21.05	18.96	16.95	15.00	13.11	11.29	9.52	7.81	6.15	4.54	2.98	1.47	0
70	23.63	21.43	19.30	17.24	15.25	13.33	11.47	9.67	7.93	6.25	4.61	3.03	1.49	0
69	24.07	21.81	19.64	17.54	15.51	13.55	11.66	9.83	8.06	6.35	4.68	3.07	1.52	0
68	24.52	22.22	20.00	17.86	15.79	13.79	11.86	10.00	8.19	6.45	4.76	3.12	1.54	0
67	25.00	22.64	20.37	18.18	16.07	14.03	12.07	10.17	8.33	6.55	4.84	3.17	1.56	0
66	25.49	23.07	20.75	18.52	16.36	14.28	12.28	10.34	8.47	6.66	4.91	3.22	1.59	0
65	26.00	23.53	21.15	18.87	16.66	14.54	12.50	10.52	8.62	6.78	5.00	3.27	1.61	0
64	26.53	24.00	21.56	19.23	16.98	14.83	12.72	10.71	8.77	6.90	5.08	3.33	1.64	0
63	27.08	24.49	22.00	19.61	17.38	15.09	12.96	10.90	8.93	7.01	5.17	3.40	1.66	0
62	27.66	25.00	22.45	20.00	17.64	15.38	13.20	11.11	9.09	7.14	5.26	3.44	1.69	0
61	28.26	25.53	22.91	20.41	18.00	15.68	13.46	11.32	9.26	7.27	5.36	3.50	1.72	0
60	28.88	26.08	23.40	20.83	18.36	16.00	13.72	11.53	9.43	7.40	5.45	3.57	1.75	0
59	29.54	26.66	23.91	21.28	18.75	16.32	14.00	11.76	9.61	7.55	5.55	3.63	1.79	0
58	30.23	27.27	24.44	21.74	19.15	16.66	14.29	12.00	9.80	7.69	5.66	3.70	1.82	0
57	30.95	27.88	25.00	22.22	19.56	17.01	14.58	12.24	10.00	7.84	5.77	3.77	1.85	0
56	31.70	28.57	25.58	22.72	20.00	17.39	14.89	12.50	10.20	8.00	5.88	3.84	1.89	0
55	32.50	29.26	26.19	23.26	20.45	17.77	15.21	12.76	10.41	8.16	6.00	3.92	1.92	0
54	33.33	30.00	26.82	23.81	20.93	18.18	15.55	13.04	10.64	8.33	6.12	4.00	1.96	0
53	34.21	30.77	27.50	24.39	21.42	18.60	15.90	13.33	10.87	8.51	6.25	4.08	2.00	0
52	35.13	31.58	28.20	25.00	21.95	19.04	16.28	13.63	11.11	8.69	6.38	4.16	2.04	0
51	36.11	32.43	28.95	25.64	22.50	19.51	16.66	13.95	11.36	8.88	6.51	4.25	2.08	0
50	37.14	33.33	29.73	26.32	23.07	20.00	17.07	14.28	11.62	9.09	6.66	4.34	2.13	0

Number of Wine Gallons of Brandy To Be Added to 100 Wine Gallons of Wine Containing 3 Per Cent of Alcohol

Per cent of alcohol in brandy	To produce a resulting fortified wine containing per cent of alcohol													
	16	15	14	13	12	11	10	9	8	7	6	5	4	3
95	16.45	15.00	13.58	12.19	10.84	9.52	8.23	6.97	5.74	4.54	3.37	2.22	1.09	0
94	16.66	15.18	13.75	12.34	10.97	9.63	8.33	7.05	5.81	4.59	3.40	2.24	1.11	0
93	16.88	15.38	13.92	12.50	11.11	9.75	8.43	7.14	5.88	4.65	3.44	2.27	1.12	0
92	17.10	15.58	14.10	12.65	11.25	9.87	8.53	7.22	5.95	4.70	3.48	2.29	1.13	0
91	17.33	15.75	14.28	12.82	11.39	10.00	8.64	7.31	6.02	4.76	3.52	2.32	1.14	0
90	17.56	16.00	14.47	12.99	11.53	10.12	8.75	7.40	6.09	4.82	3.57	2.35	1.16	0
89	17.80	16.21	14.66	13.16	11.70	10.25	8.86	7.50	6.17	4.87	3.61	2.38	1.17	0
88	18.05	16.43	14.86	13.33	11.84	10.40	8.97	7.60	6.25	4.93	3.65	2.41	1.19	0
87	18.31	16.66	15.06	13.51	12.00	10.52	9.09	7.70	6.33	5.00	3.70	2.44	1.20	0
86	18.57	16.90	15.27	13.70	12.16	10.66	9.21	7.79	6.41	5.06	3.75	2.47	1.22	0
85	18.84	17.14	15.50	13.89	12.33	10.81	9.33	7.90	6.50	5.12	3.80	2.50	1.23	0
84	19.11	17.40	15.71	14.08	12.50	10.96	9.46	8.00	6.58	5.20	3.84	2.53	1.25	0
83	19.40	17.64	15.94	14.29	12.67	11.11	9.57	8.10	6.66	5.26	3.90	2.56	1.27	0
82	19.70	17.91	16.17	14.49	12.87	11.26	9.72	8.22	6.75	5.33	3.94	2.60	1.28	0
81	20.00	18.18	16.41	14.71	13.04	11.42	9.86	8.33	6.85	5.40	4.00	2.63	1.30	0
80	20.31	18.46	16.66	14.93	13.23	11.59	10.00	8.45	6.94	5.48	4.05	2.66	1.32	0
79	20.63	18.75	16.92	15.15	13.43	11.76	10.14	8.57	7.04	5.55	4.10	2.70	1.33	0
78	20.96	19.04	17.18	15.39	13.63	11.94	10.29	8.69	7.14	5.63	4.16	2.74	1.35	0
77	21.31	19.35	17.46	15.63	13.84	12.12	10.44	8.82	7.24	5.71	4.22	2.77	1.37	0
76	21.66	19.67	17.74	15.87	14.06	12.30	10.60	8.95	7.35	5.79	4.28	2.81	1.39	0
75	22.03	20.00	18.03	16.13	14.28	12.50	10.76	9.09	7.46	5.88	4.34	2.85	1.41	0
74	22.41	20.33	18.33	16.39	14.51	12.69	10.93	9.23	7.57	5.97	4.41	2.89	1.43	0
73	22.80	20.69	18.64	16.66	14.75	12.90	11.11	9.37	7.69	6.06	4.47	2.94	1.45	0
72	23.21	21.05	18.96	16.95	15.00	13.11	11.29	9.52	7.81	6.15	4.54	2.98	1.47	0
71	23.63	21.43	19.30	17.24	15.25	13.33	11.47	9.67	7.93	6.25	4.61	3.03	1.49	0
70	24.07	21.81	19.64	17.54	15.51	13.55	11.66	9.83	8.06	6.35	4.68	3.07	1.52	0
69	24.52	22.22	20.00	17.86	15.79	13.79	11.86	10.00	8.19	6.45	4.76	3.12	1.54	0
68	25.00	22.64	20.37	18.18	16.07	14.03	12.07	10.17	8.33	6.55	4.84	3.17	1.56	0
67	25.49	23.07	20.75	18.52	16.36	14.28	12.28	10.34	8.47	6.66	4.91	3.22	1.59	0
66	26.00	23.53	21.15	18.87	16.66	14.54	12.50	10.52	8.62	6.78	5.00	3.27	1.61	0
65	26.53	24.00	21.56	19.23	16.98	14.83	12.72	10.71	8.77	6.90	5.08	3.33	1.64	0
64	27.08	24.49	22.00	19.61	17.38	15.09	12.96	10.90	8.93	7.01	5.17	3.40	1.66	0
63	27.66	25.00	22.45	20.00	17.64	15.38	13.20	11.11	9.09	7.14	5.26	3.44	1.69	0
62	28.26	25.53	22.91	20.41	18.00	15.68	13.46	11.32	9.26	7.27	5.36	3.50	1.72	0
61	28.88	26.08	23.40	20.83	18.36	16.00	13.72	11.53	9.43	7.40	5.45	3.57	1.75	0

TABLE IX—Continued

Number of Wine Gallons of Brandy To Be Added to 100 Wine Gallons of Wine Containing 3 Per Cent of Alcohol—Con.

Per cent of alcohol in brandy	To produce a resulting fortified wine containing per cent of alcohol													
	16	15	14	13	12	11	10	9	8	7	6	5	4	3
60	29.54	26.66	23.91	21.28	18.75	16.32	14.00	11.76	9.61	7.55	5.55	3.63	1.79	0
59	30.23	27.27	24.44	21.74	19.15	16.66	14.29	12.00	9.80	7.69	5.66	3.70	1.82	0
58	30.95	27.88	25.00	22.22	19.56	17.01	14.58	12.24	10.00	7.84	5.77	3.77	1.85	0
57	31.70	28.57	25.58	22.72	20.00	17.39	14.89	12.50	10.20	8.00	5.88	3.84	1.89	0
56	32.50	29.26	26.19	23.26	20.45	17.77	15.21	12.76	10.41	8.16	6.00	3.92	1.92	0
55	33.33	30.00	26.82	23.81	20.93	18.18	15.55	13.04	10.64	8.33	6.12	4.00	1.96	0
54	34.21	30.77	27.50	24.39	21.42	18.60	15.90	13.33	10.87	8.51	6.25	4.08	2.00	0
53	35.13	31.58	28.20	25.00	21.95	19.04	16.28	13.63	11.11	8.69	6.38	4.16	2.04	0
52	36.11	32.43	28.95	25.64	22.50	19.51	16.66	13.95	11.36	8.88	6.51	4.25	2.08	0
51	37.14	33.33	29.73	26.32	23.07	20.00	17.07	14.28	11.62	9.09	6.66	4.34	2.13	0
50	38.23	34.28	30.55	27.03	23.69	20.51	17.50	14.63	11.90	9.30	6.81	4.44	2.17	0

Number of Wine Gallons of Brandy To Be Added to 100 Wine Gallons of Wine Containing 4 Per Cent of Alcohol

Per cent of alcohol in brandy	To produce a resulting fortified wine containing per cent of alcohol													
	17	16	15	14	13	12	11	10	9	8	7	6	5	4
95	16.66	15.18	13.75	12.34	10.97	9.63	8.33	7.05	5.81	4.59	3.40	2.24	1.11	0
94	16.88	15.38	13.93	12.50	11.11	9.75	8.43	7.14	5.88	4.65	3.44	2.27	1.12	0
93	17.10	15.58	14.10	12.65	11.25	9.87	8.53	7.22	5.95	4.70	3.48	2.29	1.13	0
92	17.33	15.78	14.28	12.82	11.39	10.00	8.64	7.31	6.02	4.76	3.52	2.32	1.14	0
91	17.56	16.00	14.47	12.98	11.53	10.12	8.75	7.40	6.09	4.81	3.57	2.35	1.16	0
90	17.80	16.21	14.66	13.16	11.70	10.25	8.86	7.50	6.17	4.87	3.61	2.38	1.17	0
89	18.05	16.43	14.86	13.33	11.84	10.40	8.97	7.60	6.25	4.93	3.65	2.41	1.19	0
88	18.31	16.66	15.06	13.51	12.00	10.52	9.09	7.70	6.33	5.00	3.70	2.44	1.20	0
87	18.57	16.90	15.27	13.70	12.16	10.66	9.21	7.79	6.41	5.06	3.75	2.47	1.22	0
86	18.84	17.14	15.50	13.89	12.33	10.81	9.33	7.90	6.50	5.12	3.80	2.50	1.23	0
85	19.11	17.40	15.71	14.08	12.50	10.96	9.46	8.00	6.58	5.20	3.84	2.53	1.25	0
84	19.40	17.64	15.94	14.29	12.67	11.11	9.57	8.10	6.66	5.26	3.90	2.56	1.27	0
83	19.70	17.91	16.17	14.49	12.87	11.26	9.72	8.22	6.75	5.33	3.94	2.60	1.28	0
82	20.00	18.18	16.41	14.71	13.04	11.42	9.86	8.33	6.85	5.40	4.00	2.63	1.30	0
81	20.31	18.46	16.66	14.93	13.23	11.59	10.00	8.45	6.94	5.48	4.05	2.66	1.32	0
80	20.63	18.75	16.92	15.15	13.43	11.76	10.14	8.57	7.04	5.55	4.10	2.70	1.33	0
79	20.96	19.04	17.18	15.39	13.63	11.94	10.29	8.69	7.14	5.63	4.16	2.74	1.35	0
78	21.31	19.35	17.46	15.63	13.84	12.12	10.44	8.82	7.24	5.71	4.22	2.77	1.37	0
77	21.66	19.67	17.74	15.87	14.06	12.30	10.60	8.95	7.35	5.79	4.28	2.81	1.39	0
76	22.03	20.00	18.03	16.13	14.28	12.50	10.76	9.09	7.46	5.88	4.34	2.85	1.41	0
75	22.41	20.33	18.33	16.39	14.51	12.69	10.93	9.23	7.57	5.97	4.41	2.89	1.43	0
74	22.80	20.69	18.64	16.66	14.75	12.90	11.11	9.37	7.69	6.06	4.47	2.94	1.45	0
73	23.21	21.05	18.96	16.95	15.00	13.11	11.29	9.52	7.81	6.15	4.54	2.98	1.47	0
72	23.63	21.43	19.30	17.24	15.25	13.33	11.47	9.67	7.93	6.25	4.61	3.03	1.49	0
71	24.07	21.81	19.64	17.54	15.51	13.55	11.66	9.83	8.06	6.35	4.68	3.07	1.52	0
70	24.52	22.22	20.00	17.86	15.79	13.79	11.86	10.00	8.19	6.45	4.76	3.12	1.54	0
69	25.00	22.64	20.37	18.18	16.07	14.03	12.07	10.17	8.33	6.55	4.84	3.17	1.56	0
68	25.49	23.07	20.75	18.52	16.36	14.28	12.28	10.34	8.47	6.66	4.91	3.22	1.59	0
67	26.00	23.53	21.15	18.87	16.66	14.54	12.50	10.52	8.62	6.78	5.00	3.27	1.61	0
66	26.53	24.00	21.56	19.23	16.98	14.83	12.72	10.71	8.77	6.90	5.08	3.33	1.64	0
65	27.08	24.49	22.00	19.61	17.38	15.09	12.96	10.90	8.93	7.01	5.17	3.40	1.66	0
64	27.66	25.00	22.45	20.00	17.64	15.38	13.20	11.11	9.09	7.14	5.26	3.44	1.69	0
63	28.26	25.53	22.91	20.41	18.00	15.68	13.46	11.32	9.26	7.27	5.36	3.50	1.72	0
62	28.88	26.08	23.40	20.83	18.36	16.00	13.72	11.53	9.43	7.40	5.45	3.57	1.75	0
61	29.54	26.66	23.91	21.28	18.75	16.32	14.00	11.76	9.61	7.55	5.55	3.63	1.79	0
60	30.23	27.27	24.44	21.74	19.15	16.66	14.29	12.00	9.80	7.69	5.66	3.70	1.82	0
59	30.95	27.88	25.00	22.22	19.56	17.01	14.58	12.24	10.00	7.84	5.77	3.77	1.85	0
58	31.70	28.57	25.58	22.72	20.00	17.39	14.89	12.50	10.20	8.00	5.88	3.84	1.89	0
57	32.50	29.26	26.19	23.26	20.45	17.77	15.21	12.76	10.41	8.16	6.00	3.92	1.92	0
56	33.33	30.00	26.82	23.81	20.93	18.18	15.55	13.04	10.64	8.33	6.12	4.00	1.96	0
55	-----	30.77	27.50	24.39	21.42	18.60	15.90	13.33	10.87	8.51	6.25	4.08	2.00	0
54	-----	31.58	28.20	25.00	21.95	19.04	16.28	13.63	11.11	8.69	6.38	4.16	2.04	0
53	-----	32.43	28.95	25.64	22.50	19.51	16.66	13.95	11.36	8.88	6.51	4.25	2.08	0
52	-----	33.33	29.73	26.32	23.07	20.00	17.07	14.28	11.62	9.09	6.66	4.34	2.13	0
51	-----	34.28	30.55	27.03	23.69	20.51	17.50	14.63	11.90	9.30	6.81	4.44	2.17	0
50	-----	35.29	31.42	27.78	24.32	21.05	17.94	15.00	12.19	9.52	6.97	4.54	2.22	0

Number of Wine Gallons of Brandy to Be Added to 100 Wine Gallons of Wine Containing 5 Per Cent of Alcohol

Per cent of alcohol in brandy	To produce a resulting fortified wine containing per cent of alcohol													
	18	17	16	15	14	13	12	11	10	9	8	7	6	5
95	16.88	15.38	13.92	12.50	11.11	9.75	8.43	7.14	5.89	4.65	3.44	2.27	1.12	0
94	17.10	15.58	14.10	12.65	11.25	9.87	8.53	7.22	5.95	4.70	3.48	2.29	1.13	0
93	17.33	15.78	14.28	12.82	11.39	10.00	8.64	7.31	6.02	4.76	3.52	2.32	1.14	0
92	17.56	16.00	14.47	12.98	11.53	10.12	8.75	7.40	6.09	4.81	3.57	2.35	1.16	0
91	17.80	16.21	14.66	13.15	11.68	10.25	8.86	7.50	6.17	4.87	3.61	2.38	1.17	0
90	18.05	16.43	14.86	13.33	11.84	10.40	8.97	7.60	6.25	4.93	3.65	2.41	1.19	0
89	18.31	16.66	15.06	13.51	12.00	10.52	9.09	7.70	6.33	5.00	3.70	2.44	1.20	0
88	18.57	16.90	15.27	13.70	12.16	10.66	9.21	7.79	6.41	5.06	3.75	2.47	1.22	0
87	18.84	17.14	15.50	13.89	12.33	10.81	9.33	7.90	6.50	5.12	3.80	2.50	1.23	0
86	19.11	17.40	15.71	14.08	12.50	10.96	9.46	8.00	6.58	5.20	3.84	2.53	1.25	0
85	19.40	17.64	15.94	14.29	12.67	11.11	9.57	8.10	6.66	5.26	3.90	2.56	1.27	0

TABLE IX—Continued

Number of Wine Gallons of Brandy to Be Added to 100 Wine Gallons of Wine Containing 5 Per Cent of Alcohol—Con.

Per cent of alcohol in brandy	To produce a resulting fortified wine containing per cent of alcohol													
	18	17	16	15	14	13	12	11	10	9	8	7	6	5
84	19.70	17.91	16.17	14.49	12.87	11.26	9.72	8.22	6.75	5.33	3.94	2.60	1.28	0
83	20.00	19.18	16.41	14.71	13.04	11.42	9.86	8.33	6.85	5.40	4.00	2.63	1.30	0
82	20.31	18.46	16.66	14.93	13.23	11.59	10.00	8.45	6.94	5.48	4.05	2.66	1.32	0
81	20.63	18.75	16.92	15.15	13.43	11.76	10.14	8.57	7.04	5.55	4.10	2.70	1.33	0
80	20.96	19.04	17.18	15.39	13.63	11.94	10.29	8.69	7.14	5.63	4.16	2.74	1.35	0
79	21.31	19.35	17.46	15.63	13.84	12.12	10.44	8.82	7.24	5.71	4.22	2.77	1.37	0
78	21.66	19.67	17.74	15.87	14.06	12.30	10.60	8.95	7.35	5.79	4.28	2.81	1.39	0
77	22.03	20.00	18.03	16.13	14.28	12.50	10.76	9.09	7.46	5.88	4.34	2.85	1.41	0
76	22.41	20.33	18.33	16.39	14.51	12.69	10.93	9.23	7.57	5.97	4.41	2.89	1.43	0
75	22.80	20.69	18.64	16.66	14.75	12.90	11.11	9.37	7.69	6.06	4.47	2.94	1.45	0
74	23.21	21.05	18.96	16.95	15.00	13.11	11.29	9.52	7.81	6.15	4.54	2.98	1.47	0
73	23.63	21.43	19.30	17.24	15.25	13.33	11.47	9.67	7.93	6.25	4.61	3.03	1.49	0
72	24.07	21.81	19.64	17.54	15.51	13.55	11.66	9.83	8.06	6.35	4.68	3.07	1.52	0
71	24.52	22.22	20.00	17.86	15.79	13.79	11.86	10.00	8.19	6.45	4.76	3.12	1.54	0
70	25.00	22.64	20.37	18.18	16.07	14.03	12.07	10.17	8.33	6.55	4.84	3.17	1.56	0
69	25.49	23.07	20.75	18.52	16.36	14.28	12.28	10.34	8.47	6.66	4.91	3.22	1.59	0
68	26.00	23.53	21.15	18.87	16.66	14.54	12.50	10.52	8.62	6.78	5.00	3.27	1.61	0
67	26.53	24.00	21.56	19.23	16.98	14.83	12.72	10.71	8.77	6.90	5.08	3.33	1.64	0
66	27.08	24.49	22.00	19.61	17.38	15.09	12.96	10.90	8.93	7.01	5.17	3.40	1.66	0
65	27.66	25.00	22.45	20.00	17.64	15.38	13.20	11.11	9.09	7.14	5.26	3.44	1.69	0
64	28.26	25.53	22.91	20.41	18.00	15.68	13.46	11.32	9.26	7.27	5.36	3.50	1.72	0
63	28.88	26.08	23.40	20.83	18.36	16.00	13.72	11.53	9.43	7.40	5.45	3.57	1.75	0
62	29.54	26.66	23.91	21.28	18.75	16.32	14.00	11.76	9.61	7.55	5.55	3.63	1.79	0
61	30.23	27.27	24.44	21.74	19.15	16.66	14.29	12.00	9.80	7.69	5.66	3.70	1.82	0
60	30.95	27.88	25.00	22.22	19.56	17.01	14.58	12.24	10.00	7.84	5.77	3.77	1.85	0
59	31.70	28.57	25.58	22.72	20.00	17.39	14.89	12.50	10.20	8.00	5.88	3.84	1.89	0
58	32.50	29.26	26.19	23.26	20.45	17.77	15.21	12.76	10.41	8.16	6.00	3.92	1.92	0
57	33.33	30.00	26.82	23.81	20.93	18.18	15.55	13.04	10.64	8.33	6.12	4.00	1.96	0
56	-----	30.77	27.50	24.39	21.42	18.60	15.90	13.33	10.87	8.51	6.25	4.08	2.00	0
55	-----	31.58	28.20	25.00	21.95	19.04	16.28	13.63	11.11	8.69	6.38	4.16	2.04	0
54	-----	32.43	28.95	25.64	22.50	19.51	16.66	13.95	11.36	8.88	6.51	4.25	2.08	0
53	-----	33.33	29.73	26.32	23.07	20.00	17.07	14.28	11.62	9.09	6.66	4.34	2.13	0
52	-----	34.28	30.55	27.03	23.69	20.51	17.50	14.63	11.90	9.30	6.81	4.44	2.17	0
51	-----	35.29	31.42	27.78	24.32	21.05	17.94	15.00	12.19	9.52	6.97	4.54	2.22	0
50	-----	36.36	32.35	28.57	25.00	21.62	18.42	15.38	12.50	9.75	7.14	4.65	2.27	0

Number of Wine Gallons of Brandy To Be Added to 100 Wine Gallons of Wine Containing 6 Per Cent of Alcohol.

Per cent of alcohol in brandy	To produce a resulting fortified wine containing per cent of alcohol													
	19	18	17	16	15	14	13	12	11	10	9	8	7	6
95	17.10	15.61	14.10	12.65	11.25	9.87	8.53	7.22	5.95	4.70	3.48	2.29	1.13	0
94	17.33	15.78	14.28	12.81	11.39	10.00	8.64	7.31	6.02	4.76	3.52	2.32	1.14	0
93	17.56	16.00	14.47	12.98	11.53	10.12	8.75	7.40	6.09	4.81	3.57	2.35	1.16	0
92	17.80	16.21	14.66	13.15	11.68	10.25	8.86	7.50	6.17	4.87	3.61	2.38	1.17	0
91	18.05	16.43	14.86	13.33	11.84	10.38	8.97	7.59	6.25	4.93	3.65	2.40	1.19	0
90	18.31	16.66	15.06	13.51	12.00	10.52	9.09	7.70	6.33	5.00	3.70	2.44	1.20	0
89	18.57	16.90	15.27	13.70	12.16	10.66	9.21	7.79	6.41	5.06	3.75	2.47	1.22	0
88	18.84	17.14	15.50	13.89	12.33	10.81	9.33	7.90	6.50	5.12	3.80	2.50	1.23	0
87	19.11	17.40	15.71	14.08	12.50	10.96	9.46	8.00	6.58	5.20	3.84	2.53	1.25	0
86	19.40	17.64	15.94	14.29	12.67	11.11	9.57	8.10	6.66	5.26	3.90	2.56	1.27	0
85	19.70	17.91	16.17	14.49	12.87	11.26	9.72	8.22	6.75	5.33	3.94	2.60	1.28	0
84	20.00	18.18	16.41	14.71	13.04	11.42	9.86	8.33	6.85	5.40	4.00	2.63	1.30	0
83	-----	18.46	16.66	14.93	13.23	11.59	10.00	8.45	6.94	5.48	4.05	2.66	1.32	0
82	-----	18.75	16.92	15.15	13.43	11.76	10.14	8.57	7.04	5.55	4.10	2.70	1.33	0
81	-----	19.04	17.18	15.39	13.63	11.94	10.29	8.69	7.14	5.63	4.16	2.74	1.35	0
80	-----	19.35	17.46	15.63	13.84	12.12	10.44	8.82	7.24	5.71	4.22	2.77	1.37	0
79	-----	19.67	17.74	15.87	14.06	12.30	10.60	8.95	7.35	5.79	4.28	2.81	1.39	0
78	-----	20.00	18.03	16.13	14.28	12.50	10.76	9.09	7.46	5.88	4.34	2.85	1.41	0
77	-----	20.33	18.33	16.39	14.51	12.69	10.93	9.23	7.57	5.97	4.41	2.89	1.43	0
76	-----	20.69	18.64	16.66	14.75	12.90	11.11	9.37	7.69	6.06	4.47	2.94	1.45	0
75	-----	21.05	18.96	16.95	15.00	13.11	11.29	9.52	7.81	6.15	4.54	2.98	1.47	0
74	-----	21.43	19.30	17.24	15.25	13.33	11.47	9.67	7.93	6.25	4.61	3.03	1.49	0
73	-----	21.81	19.64	17.54	15.51	13.55	11.66	9.83	8.06	6.35	4.68	3.07	1.52	0
72	-----	22.22	20.00	17.86	15.79	13.79	11.86	10.00	8.19	6.45	4.76	3.12	1.54	0
71	-----	22.64	20.37	18.18	16.07	14.03	12.07	10.17	8.33	6.55	4.84	3.17	1.56	0
70	-----	23.07	20.75	18.52	16.36	14.28	12.28	10.34	8.47	6.66	4.91	3.22	1.59	0
69	-----	23.53	21.15	18.87	16.66	14.54	12.50	10.52	8.62	6.78	5.00	3.27	1.61	0
68	-----	24.00	21.56	19.23	16.98	14.83	12.72	10.71	8.77	6.90	5.08	3.33	1.64	0
67	-----	24.49	22.00	19.61	17.38	15.09	12.96	10.90	8.93	7.01	5.17	3.40	1.66	0
66	-----	25.00	22.45	20.00	17.64	15.38	13.20	11.11	9.00	7.14	5.26	3.44	1.69	0
65	-----	25.53	22.91	20.41	18.00	15.68	13.46	11.32	9.26	7.27	5.36	3.50	1.72	0
64	-----	26.08	23.40	20.83	18.36	16.00	13.72	11.53	9.43	7.40	5.45	3.57	1.75	0
63	-----	26.66	23.91	21.28	18.75	16.32	14.00	11.76	9.61	7.55	5.55	3.63	1.79	0
62	-----	27.27	24.44	21.74	19.15	16.66	14.29	12.00	9.80	7.69	5.66	3.70	1.82	0
61	-----	27.88	25.00	22.22	19.56	17.01	14.58	12.24	10.00	7.84	5.77	3.77	1.85	0
60	-----	28.57	25.58	22.72	20.00	17.39	14.89	12.50	10.20	8.00	5.88	3.84	1.89	0
59	-----	29.26	26.19	23.26	20.45	17.77	15.21	12.76	10.41	8.16	6.00	3.92	1.92	0
58	-----	30.00	26.82	23.81	20.93	18.18	15.55	13.04	10.64	8.33	6.12	4.00	1.96	0
57	-----	30.77	27.50	24.39	21.42	18.60	15.90	13.33	10.87	8.51	6.25	4.08	2.00	0
56	-----	31.58	28.20	25.00	21.95	19.04	16.28	13.63	11.11	8.69	6.38	4.16	2.04	0
55	-----	32.42	28.95	25.64	22.50	19.51	16.66	13.95	11.36	8.88	6.51	4.25	2.08	0
54	-----	33.33	29.73	26.32	23.07	20.00	17.07	14.28	11.62	9.09	6.66	4.34	2.13	0
53	-----	34.28	30.55	27.03	23.69	20.51	17.50	14.63	11.90	9.30	6.81	4.44	2.17	0
52	-----	35.29	31.42	27.78	24.32	21.05	17.94	15.00	12.19	9.52	6.97	4.54	2.22	0
51	-----	36.36	32.35	28.57	25.00	21.62	18.42	15.38	12.50	9.75	7.14	4.65	2.27	0
50	-----	37.50	33.33	29.41	25.71	22.22	18.91	15.79	12.82	10.00	7.31	4.76	2.33	0

TABLE IX—Continued

Number of Wine Gallons of Brandy To Be Added To 100 Wine Gallons of Wine Containing 7 Per Cent of Alcohol

Per cent of alcohol in brandy	To produce a resulting fortified wine containing per cent of alcohol												
	19	18	17	16	15	14	13	12	11	10	9	8	7
95	15.78	14.28	12.82	11.39	10.00	8.64	7.19	6.02	4.76	3.52	2.32	1.14	0
94	16.00	14.47	12.98	11.53	10.12	8.75	7.40	6.09	4.81	3.57	2.35	1.16	0
93	16.21	14.66	13.15	11.68	10.25	8.86	7.50	6.17	4.87	3.61	2.38	1.17	0
92	16.43	14.86	13.33	11.84	10.39	8.97	7.59	6.25	4.93	3.65	2.40	1.19	0
91	16.66	15.06	13.51	12.00	10.52	9.09	7.69	6.32	5.00	3.70	2.43	1.20	0
90	16.90	15.27	13.70	12.16	10.66	9.21	7.79	6.41	5.06	3.75	2.47	1.22	0
89	17.14	15.50	13.89	12.33	10.81	9.33	7.90	6.50	5.12	3.80	2.50	1.23	0
88	17.40	15.71	14.08	12.50	10.96	9.46	8.00	6.58	5.20	3.84	2.53	1.25	0
87	17.64	15.94	14.29	12.67	11.11	9.57	8.10	6.66	5.26	3.90	2.56	1.27	0
86	17.91	16.17	14.49	12.87	11.26	9.72	8.22	6.75	5.33	3.94	2.60	1.28	0
85	18.18	16.41	14.71	13.04	11.42	9.86	8.33	6.85	5.40	4.00	2.63	1.30	0
84	18.46	16.66	14.93	13.23	11.59	10.00	8.45	6.94	5.48	4.05	2.66	1.32	0
83	18.75	16.92	15.15	13.43	11.76	10.14	8.57	7.04	5.55	4.10	2.70	1.33	0
82	19.04	17.18	15.39	13.63	11.94	10.29	8.69	7.14	5.63	4.16	2.74	1.35	0
81	19.35	17.46	15.63	13.84	12.12	10.44	8.82	7.24	5.71	4.22	2.77	1.37	0
80	19.67	17.74	15.87	14.06	12.30	10.60	8.95	7.35	5.79	4.28	2.81	1.39	0
79	20.00	18.03	16.13	14.28	12.50	10.76	9.09	7.46	5.88	4.34	2.85	1.41	0
78	20.33	18.33	16.39	14.51	12.69	10.93	9.23	7.57	5.97	4.41	2.89	1.43	0
77	20.69	18.64	16.66	14.75	12.90	11.11	9.37	7.69	6.06	4.47	2.94	1.45	0
76	21.05	18.96	16.95	15.00	13.11	11.29	9.52	7.81	6.15	4.54	2.98	1.47	0
75	21.43	19.30	17.24	15.25	13.33	11.47	9.67	7.93	6.25	4.61	3.03	1.49	0
74	21.81	19.64	17.54	15.51	13.55	11.66	9.83	8.06	6.35	4.68	3.07	1.52	0
73	22.22	20.00	17.86	15.79	13.79	11.86	10.00	8.19	6.45	4.76	3.12	1.54	0
72	22.64	20.37	18.18	16.07	14.03	12.07	10.17	8.33	6.55	4.84	3.17	1.56	0
71	23.07	20.75	18.52	16.36	14.28	12.28	10.34	8.47	6.66	4.91	3.22	1.59	0
70	23.53	21.15	18.87	16.66	14.54	12.50	10.52	8.62	6.78	5.00	3.27	1.61	0
69	24.00	21.56	19.23	16.98	14.83	12.72	10.71	8.77	6.90	5.08	3.33	1.64	0
68	24.49	22.00	19.61	17.38	15.09	12.96	10.90	8.93	7.01	5.17	3.40	1.66	0
67	25.00	22.45	20.00	17.64	15.38	13.20	11.11	9.09	7.14	5.26	3.44	1.69	0
66	25.53	22.91	20.41	18.00	15.68	13.46	11.32	9.26	7.27	5.36	3.50	1.72	0
65	26.08	23.40	20.83	18.36	16.00	13.72	11.53	9.43	7.40	5.45	3.57	1.75	0
64	26.66	23.91	21.28	18.75	16.32	14.00	11.76	9.61	7.55	5.55	3.63	1.79	0
63	27.27	24.44	21.74	19.15	16.66	14.29	12.00	9.80	7.69	5.66	3.70	1.82	0
62	27.88	25.00	22.22	19.56	17.01	14.58	12.24	10.00	7.84	5.77	3.77	1.85	0
61	28.57	25.58	22.72	20.00	17.39	14.89	12.50	10.20	8.00	5.88	3.84	1.89	0
60	29.26	26.19	23.26	20.45	17.77	15.21	12.76	10.41	8.16	6.00	3.92	1.92	0
59	30.00	26.82	23.81	20.93	18.18	15.55	13.04	10.64	8.33	6.12	4.00	1.96	0
58	30.77	27.50	24.39	21.42	18.60	15.90	13.33	10.87	8.51	6.25	4.08	2.00	0
57	31.58	28.20	25.00	21.95	19.04	16.28	13.63	11.11	8.69	6.38	4.16	2.04	0
56	32.43	28.95	25.64	22.50	19.51	16.66	13.95	11.36	8.88	6.51	4.25	2.08	0
55	33.33	29.73	26.32	23.07	20.00	17.07	14.28	11.62	9.09	6.66	4.34	2.13	0
54	34.28	30.55	27.03	23.69	20.51	17.50	14.63	11.90	9.30	6.81	4.44	2.17	0
53	35.29	31.42	27.78	24.32	21.05	17.94	15.00	12.19	9.52	6.97	4.54	2.22	0
52	36.36	32.35	28.57	25.00	21.62	18.42	15.38	12.50	9.75	7.14	4.65	2.27	0
51	37.50	33.33	29.41	25.71	22.22	18.91	15.79	12.82	10.00	7.31	4.76	2.33	0
50	.....	34.37	30.30	26.43	22.85	19.44	16.21	13.16	10.25	7.50	4.88	2.38	0

Number of Wine Gallons of Brandy To Be Added To 100 Wine Gallons of Wine Containing 8 Per Cent of Alcohol

Per cent of alcohol in brandy	To produce a resulting fortified wine containing per cent of alcohol												
	20	19	18	17	16	15	14	13	12	11	10	9	8
95	16.00	14.46	12.98	11.53	10.12	8.75	7.40	6.09	4.81	3.57	2.35	1.16	0
94	16.21	14.66	13.15	11.68	10.25	8.86	7.50	6.17	4.87	3.61	2.38	1.17	0
93	16.43	14.86	13.33	11.84	10.38	8.97	7.59	6.25	4.93	3.65	2.40	1.19	0
92	16.66	15.06	13.51	12.00	10.52	9.09	7.69	6.32	5.00	3.70	2.43	1.20	0
91	16.90	15.27	13.69	12.15	10.66	9.21	7.79	6.41	5.06	3.75	2.46	1.21	0
90	17.14	15.50	13.89	12.33	10.81	9.33	7.90	6.50	5.12	3.80	2.50	1.23	0
89	17.40	15.71	14.08	12.50	10.96	9.46	8.00	6.58	5.20	3.84	2.53	1.25	0
88	17.64	15.94	14.29	12.67	11.11	9.57	8.10	6.66	5.26	3.90	2.56	1.27	0
87	17.91	16.17	14.49	12.87	11.26	9.72	8.22	6.75	5.33	3.94	2.60	1.28	0
86	18.18	16.41	14.71	13.04	11.42	9.86	8.33	6.85	5.40	4.00	2.63	1.30	0
85	18.46	16.66	14.93	13.23	11.59	10.00	8.45	6.94	5.48	4.05	2.66	1.32	0
84	18.75	16.92	15.15	13.43	11.76	10.14	8.57	7.04	5.55	4.10	2.70	1.33	0
83	19.04	17.18	15.39	13.63	11.94	10.29	8.69	7.14	5.63	4.16	2.74	1.35	0
82	19.35	17.46	15.63	13.84	12.12	10.44	8.82	7.24	5.71	4.22	2.77	1.37	0
81	19.67	17.74	15.87	14.06	12.30	10.60	8.95	7.35	5.79	4.28	2.81	1.39	0
80	20.00	18.03	16.13	14.28	12.50	10.76	9.09	7.46	5.88	4.34	2.85	1.41	0
79	20.33	18.33	16.39	14.51	12.69	10.93	9.23	7.57	5.97	4.41	2.89	1.43	0
78	20.69	18.64	16.66	14.75	12.90	11.11	9.37	7.69	6.06	4.47	2.94	1.45	0
77	21.05	18.96	16.95	15.00	13.11	11.29	9.52	7.81	6.15	4.54	2.98	1.47	0
76	21.43	19.30	17.24	15.25	13.33	11.47	9.67	7.93	6.25	4.61	3.03	1.49	0
75	21.81	19.64	17.54	15.51	13.55	11.66	9.83	8.06	6.35	4.68	3.07	1.52	0
74	22.22	20.00	17.86	15.79	13.79	11.86	10.00	8.19	6.45	4.76	3.12	1.54	0
73	22.64	20.37	18.18	16.07	14.03	12.07	10.17	8.33	6.55	4.84	3.17	1.56	0
72	23.07	20.75	18.52	16.36	14.28	12.28	10.34	8.47	6.66	4.91	3.22	1.59	0
71	23.53	21.15	18.87	16.66	14.54	12.50	10.52	8.62	6.78	5.00	3.27	1.61	0
70	24.00	21.56	19.23	16.98	14.83	12.72	10.71	8.77	6.90	5.08	3.33	1.64	0
69	24.49	22.00	19.61	17.38	15.00	12.96	10.90	8.93	7.01	5.17	3.40	1.66	0
68	25.00	22.45	20.00	17.64	15.38	13.20	11.11	9.09	7.14	5.26	3.44	1.69	0
67	25.53	22.91	20.41	18.00	15.68	13.46	11.32	9.26	7.27	5.36	3.50	1.72	0
66	26.08	23.40	20.83	18.36	16.00	13.72	11.53	9.43	7.40	5.45	3.57	1.75	0
65	26.66	23.91	21.28	18.75	16.32	14.00	11.76	9.61	7.55	5.55	3.63	1.79	0
64	27.27	24.44	21.74	19.15	16.66	14.29	12.00	9.80	7.69	5.66	3.70	1.82	0
63	27.88	25.00	22.22	19.56	17.01	14.58	12.24	10.00	7.84	5.77	3.77	1.85	0
62	28.57	25.58	22.72	20.00	17.39	14.89	12.50	10.20	8.00	5.88	3.84	1.89	0
61	29.26	26.19	23.26	20.45	17.77	15.21	12.76	10.41	8.16	6.00	3.92	1.92	0
60	30.00	26.82	23.81	20.93	18.18	15.55	13.04	10.64	8.33	6.12	4.00	1.96	0
59	30.77	27.50	24.39	21.42	18.60	15.90	13.33	10.87	8.51	6.25	4.08	2.00	0
58	31.58	28.20	25.00	21.95	19.04	16.28	13.63	11.11	8.69	6.38	4.16	2.04	0

TABLE IX—Continued

Number of Wine Gallons of Brandy to Be Added to 100 Wine Gallons of Wine Containing 8 Per Cent of Alcohol—Con.

Per cent of alcohol in brandy	To produce a resulting fortified wine containing per cent of alcohol												
	19	18	17	16	15	14	13	12	11	10	9	8	7
57	32.43	28.95	25.64	22.50	19.51	16.66	13.95	11.36	8.88	6.51	4.25	2.08	0
56	33.33	29.73	26.32	23.07	20.00	17.07	14.28	11.62	9.09	6.66	4.34	2.13	0
55	.....	30.55	27.73	23.69	20.51	17.50	14.63	11.90	9.30	6.81	4.44	2.17	0
54	.....	31.42	27.78	24.32	21.05	17.94	15.00	12.19	9.52	6.97	4.54	2.22	0
53	.....	32.35	28.57	25.00	21.62	18.42	15.38	12.50	9.75	7.14	4.65	2.27	0
52	.....	33.33	29.41	25.71	22.22	18.91	15.79	12.82	10.00	7.31	4.76	2.33	0
51	.....	34.37	30.30	26.43	22.85	19.44	16.21	13.16	10.25	7.50	4.88	2.38	0
50	.....	35.48	31.25	27.27	23.52	20.00	16.66	13.51	10.52	7.70	5.00	2.44	0

Number of Wine Gallons of Brandy To Be Added to 100 Wine Gallons of Wine Containing 9 Per Cent of Alcohol

Per cent of alcohol in brandy	To produce a resulting fortified wine containing per cent of alcohol												
	21	20	19	18	17	16	15	14	13	12	11	10	9
95	16.21	14.66	13.02	11.67	10.20	8.85	7.50	6.17	4.88	3.61	2.38	1.17	0
94	16.43	14.85	13.33	11.84	10.38	8.97	7.59	6.25	4.93	3.65	2.40	1.19	0
93	16.66	15.06	13.51	12.00	10.52	9.03	7.69	6.33	5.00	3.70	2.43	1.20	0
92	16.90	15.27	13.69	12.16	10.66	9.21	7.79	6.41	5.06	3.75	2.46	1.21	0
91	17.14	15.49	13.88	12.32	10.81	9.33	7.89	6.49	5.12	3.79	2.50	1.23	0
90	17.40	15.71	14.08	12.50	10.96	9.46	8.00	6.58	5.20	3.84	2.53	1.25	0
89	17.64	15.94	14.29	12.67	11.11	9.57	8.10	6.66	5.26	3.90	2.56	1.27	0
88	17.91	16.17	14.49	12.87	11.26	9.72	8.22	6.75	5.33	3.94	2.60	1.28	0
87	18.18	16.41	14.71	13.04	11.42	9.86	8.33	6.85	5.40	4.00	2.63	1.30	0
86	18.46	16.66	14.93	13.23	11.59	10.00	8.45	6.94	5.48	4.05	2.66	1.32	0
85	18.75	16.92	15.15	13.43	11.76	10.14	8.57	7.04	5.55	4.10	2.70	1.33	0
84	19.04	17.18	15.39	13.63	11.94	10.29	8.69	7.14	5.63	4.16	2.74	1.35	0
83	19.35	17.46	15.63	13.84	12.12	10.44	8.82	7.24	5.71	4.22	2.77	1.37	0
82	19.67	17.74	15.87	14.06	12.30	10.60	8.95	7.35	5.79	4.28	2.81	1.39	0
81	20.00	18.03	16.13	14.28	12.50	10.76	9.09	7.46	5.88	4.34	2.85	1.41	0
80	20.33	18.33	16.39	14.51	12.69	10.93	9.23	7.57	5.97	4.41	2.89	1.43	0
79	20.69	18.64	16.66	14.75	12.90	11.11	9.37	7.69	6.06	4.47	2.94	1.45	0
78	21.05	18.96	16.95	15.00	13.11	11.29	9.52	7.81	6.15	4.54	2.98	1.47	0
77	21.43	19.30	17.24	15.25	13.33	11.47	9.67	7.93	6.25	4.61	3.03	1.49	0
76	21.81	19.64	17.54	15.51	13.55	11.66	9.83	8.06	6.35	4.68	3.07	1.52	0
75	22.22	20.00	17.86	15.79	13.79	11.86	10.00	8.19	6.45	4.76	3.12	1.54	0
74	22.64	20.37	18.18	16.07	14.03	12.07	10.17	8.33	6.55	4.84	3.17	1.56	0
73	23.07	20.75	18.52	16.36	14.28	12.28	10.34	8.47	6.66	4.91	3.22	1.59	0
72	23.53	21.15	18.87	16.66	14.54	12.50	10.52	8.62	6.78	5.00	3.27	1.61	0
71	24.00	21.56	19.23	16.98	14.83	12.72	10.71	8.77	6.90	5.08	3.33	1.64	0
70	24.49	22.00	19.61	17.38	15.09	12.96	10.90	8.93	7.01	5.17	3.40	1.66	0
69	25.00	22.45	20.00	17.64	15.38	13.20	11.11	9.09	7.14	5.26	3.44	1.69	0
68	.....	22.91	20.41	18.00	15.68	13.46	11.32	9.26	7.27	5.36	3.50	1.72	0
67	.....	23.40	20.83	18.36	16.00	13.72	11.53	9.43	7.40	5.45	3.57	1.75	0
66	.....	23.91	21.28	18.75	16.32	14.00	11.76	9.61	7.55	5.55	3.63	1.79	0
65	.....	24.44	21.74	19.15	16.66	14.29	12.00	9.80	7.69	5.66	3.70	1.82	0
64	.....	25.00	22.22	19.56	17.01	14.58	12.24	10.00	7.84	5.77	3.77	1.85	0
63	.....	25.58	22.72	20.00	17.39	14.89	12.50	10.20	8.00	5.88	3.84	1.89	0
62	.....	26.19	23.26	20.45	17.77	15.21	12.76	10.41	8.16	6.00	3.92	1.92	0
61	.....	26.82	23.81	20.93	18.18	15.55	13.04	10.64	8.33	6.12	4.00	1.96	0
60	.....	27.50	24.39	21.42	18.60	15.90	13.33	10.87	8.51	6.25	4.08	2.00	0
59	.....	28.20	25.00	21.95	19.04	16.28	13.63	11.11	8.69	6.38	4.16	2.04	0
58	.....	28.95	25.64	22.50	19.51	16.66	13.95	11.36	8.88	6.51	4.25	2.08	0
57	.....	29.73	26.32	23.07	20.00	17.07	14.28	11.62	9.09	6.66	4.34	2.13	0
56	.....	30.55	27.03	23.69	20.51	17.50	14.63	11.90	9.30	6.81	4.44	2.17	0
55	.....	31.42	27.78	24.32	21.05	17.94	15.00	12.19	9.52	6.97	4.54	2.22	0
54	.....	32.35	28.57	25.00	21.62	18.42	15.38	12.50	9.75	7.14	4.65	2.27	0
53	.....	33.33	29.41	25.71	22.22	18.91	15.79	12.82	10.00	7.31	4.76	2.33	0
52	.....	34.37	30.30	26.43	22.85	19.44	16.21	13.16	10.25	7.50	4.88	2.38	0
51	.....	35.48	31.25	27.27	23.52	20.00	16.66	13.51	10.52	7.70	5.00	2.44	0
50	.....	36.66	32.26	28.12	24.24	20.59	17.14	13.89	10.81	7.90	5.13	2.50	0

Number of Wine Gallons of Brandy To Be Added to 100 Wine Gallons of Wine Containing 10 Per Cent of Alcohol

Per cent of alcohol in brandy	To produce a resulting fortified wine containing per cent of alcohol												
	22	21	20	19	18	17	16	15	14	13	12	11	10
95	16.43	14.86	13.33	11.84	10.58	8.97	7.59	6.25	4.93	3.65	2.40	1.19	0
94	16.66	15.06	13.51	12.00	10.62	9.09	7.69	6.32	5.00	3.70	2.44	1.20	0
93	17.04	15.27	13.69	12.16	10.66	9.21	7.79	6.41	5.06	3.75	2.46	1.21	0
92	17.14	15.49	13.88	12.32	10.81	9.33	7.89	6.49	5.12	3.81	2.50	1.23	0
91	17.39	15.71	14.08	12.50	10.95	9.45	8.00	6.57	5.19	3.84	2.53	1.25	0
90	17.64	15.94	14.29	12.67	11.11	9.57	8.10	6.66	5.26	3.90	2.56	1.27	0
89	17.91	16.17	14.49	12.87	11.26	9.72	8.22	6.75	5.33	3.94	2.60	1.28	0
88	18.18	16.41	14.71	13.04	11.42	9.86	8.33	6.85	5.40	4.00	2.63	1.30	0
87	18.46	16.66	14.93	13.23	11.59	10.00	8.45	6.94	5.48	4.05	2.66	1.32	0
86	18.75	16.92	15.15	13.43	11.76	10.14	8.57	7.94	5.55	4.10	2.70	1.33	0
85	19.04	17.18	15.39	13.63	11.94	10.29	8.69	7.14	5.63	4.16	2.74	1.35	0
84	19.35	17.46	15.63	13.84	12.12	10.44	8.82	7.24	5.71	4.22	2.77	1.37	0
83	19.67	17.74	15.87	14.06	12.30	10.60	8.95	7.35	5.79	4.28	2.81	1.39	0
82	20.00	18.03	16.13	14.28	12.50	10.76	9.09	7.46	5.88	4.34	2.85	1.41	0
81	20.33	18.33	16.39	14.51	12.69	10.93	9.23	7.57	5.97	4.41	2.89	1.43	0
80	20.69	18.64	16.66	14.75	12.90	11.11	9.37	7.69	6.06	4.47	2.94	1.45	0
79	21.05	18.96	16.95	15.00	13.11	11.29	9.52	7.81	6.15	4.54	2.98	1.47	0

TABLE IX—Continued

Number of Wine Gallons of Brandy to be Added to 100 Wine Gallons of Wine Containing 10 Per Cent of Alcohol—Con.

Per cent of alcohol in brandy	To produce a resulting fortified wine containing per cent of alcohol												
	22	21	20	19	18	17	16	15	14	13	12	11	10
78	21.43	19.30	17.24	15.25	13.33	11.47	9.67	7.93	6.25	4.61	3.03	1.49	0
77	21.81	19.64	17.54	15.51	13.55	11.66	9.83	8.06	6.35	4.68	3.07	1.52	0
76	22.22	20.00	17.86	15.79	13.79	11.86	10.00	8.19	6.45	4.76	3.12	1.54	0
75	22.64	20.37	18.18	16.07	14.03	12.07	10.17	8.33	6.55	4.84	3.17	1.56	0
74	23.07	20.75	18.52	16.36	14.28	12.28	10.34	8.47	6.66	4.91	3.22	1.59	0
73	23.53	21.15	18.87	16.66	14.54	12.50	10.52	8.62	6.78	5.00	3.27	1.61	0
72	24.00	21.56	19.23	16.98	14.83	12.72	10.71	8.77	6.90	5.08	3.33	1.64	0
71	24.49	22.00	19.61	17.38	15.09	12.96	10.90	8.93	7.01	5.17	3.40	1.66	0
70	25.00	22.45	20.00	17.64	15.38	13.20	11.11	9.09	7.14	5.26	3.44	1.69	0
69	.....	22.91	20.41	18.00	15.68	13.46	11.32	9.26	7.27	5.36	3.50	1.72	0
68	.....	23.40	20.83	18.36	16.00	13.72	11.53	9.43	7.40	5.45	3.57	1.75	0
67	.....	23.91	21.28	18.75	16.32	14.00	11.76	9.61	7.55	5.55	3.63	1.79	0
66	.....	24.44	21.74	19.15	16.66	14.29	12.00	9.80	7.69	5.66	3.70	1.82	0
65	.....	25.00	22.22	19.56	17.01	14.58	12.24	10.00	7.84	5.77	3.77	1.85	0
64	.....	25.58	22.72	20.00	17.39	14.89	12.50	10.20	8.00	5.88	3.84	1.89	0
63	.....	26.19	23.26	20.45	17.77	15.21	12.76	10.41	8.16	6.00	3.92	1.92	0
62	.....	26.82	23.81	20.93	18.18	15.55	13.04	10.64	8.33	6.12	4.00	1.96	0
61	.....	27.50	24.39	21.42	18.60	15.90	13.33	10.87	8.51	6.25	4.08	2.00	0
60	.....	28.20	25.00	21.95	19.04	16.28	13.63	11.11	8.69	6.38	4.16	2.04	0
59	.....	28.95	25.64	22.50	19.51	16.66	13.95	11.36	8.88	6.51	4.25	2.08	0
58	.....	29.73	26.32	23.07	20.00	17.07	14.28	11.62	9.09	6.66	4.34	2.13	0
57	.....	30.55	27.03	23.69	20.51	17.50	14.63	11.90	9.30	6.81	4.44	2.17	0
56	.....	31.42	27.78	24.32	21.05	17.94	15.00	12.19	9.52	6.97	4.54	2.22	0
55	.....	32.35	28.57	25.00	21.62	18.42	15.38	12.50	9.75	7.14	4.65	2.27	0
54	.....	33.33	29.41	25.71	22.22	18.91	15.79	12.82	10.00	7.31	4.76	2.33	0
53	.....	34.37	30.30	26.43	22.85	19.44	16.21	13.16	10.25	7.50	4.88	2.38	0
52	.....	35.48	31.25	27.27	23.52	20.00	16.66	13.51	10.52	7.70	5.00	2.44	0
51	.....	36.66	32.26	28.12	24.24	20.59	17.14	13.89	10.81	7.90	5.13	2.50	0
50	.....	37.93	33.33	29.03	25.00	21.21	17.64	14.27	11.11	8.10	5.26	2.56	0

Number of Wine Gallons of Brandy To Be Added to 100 Wine Gallons of Wine Containing 11 Per Cent of Alcohol

Per cent of alcohol in brandy	To produce a resulting fortified wine containing per cent of alcohol												
	23	22	21	20	19	18	17	16	15	14	13	12	11
95	16.66	15.06	13.51	12.00	10.52	9.09	7.69	6.32	5.00	3.70	2.43	1.20	0
94	16.90	15.27	13.69	12.16	10.66	9.21	7.79	6.41	5.06	3.75	2.46	1.21	0
93	17.14	15.49	13.88	12.32	10.81	9.33	7.89	6.49	5.12	3.79	2.50	1.23	0
92	17.39	15.71	14.08	12.50	10.95	9.45	8.00	6.57	5.19	3.84	2.53	1.25	0
91	17.64	15.94	14.28	12.67	11.11	9.58	8.10	6.66	5.26	3.89	2.56	1.26	0
90	17.91	16.17	14.49	12.87	11.26	9.72	8.22	6.75	5.33	3.94	2.60	1.28	0
89	18.18	16.41	14.71	13.04	11.42	9.86	8.33	6.85	5.40	4.00	2.63	1.30	0
88	18.46	16.67	14.93	13.23	11.59	10.00	8.45	6.94	5.48	4.05	2.66	1.32	0
87	18.75	16.92	15.15	13.43	11.76	10.14	8.57	7.04	5.55	4.10	2.70	1.33	0
86	19.04	17.18	15.39	13.63	11.94	10.29	8.69	7.14	5.63	4.16	2.74	1.35	0
85	19.35	17.40	15.63	13.84	12.12	10.44	8.82	7.24	5.71	4.22	2.77	1.37	0
84	19.67	17.74	15.87	14.06	12.30	10.60	8.95	7.35	5.79	4.28	2.81	1.39	0
83	20.00	18.03	16.13	14.28	12.50	10.76	9.09	7.46	5.88	4.34	2.85	1.41	0
82	20.33	18.33	16.30	14.51	12.69	10.93	9.23	7.57	5.97	4.41	2.89	1.43	0
81	20.69	18.64	16.66	14.75	12.90	11.11	9.37	7.69	6.06	4.47	2.94	1.45	0
80	21.05	18.90	16.95	15.00	13.11	11.29	9.52	7.81	6.15	4.54	2.98	1.47	0
79	21.43	19.30	17.24	15.25	13.33	11.47	9.67	7.93	6.25	4.61	3.03	1.49	0
78	21.81	19.64	17.54	15.51	13.55	11.66	9.83	8.06	6.35	4.68	3.07	1.52	0
77	22.22	20.00	17.86	15.79	13.79	11.86	10.00	8.19	6.45	4.76	3.12	1.54	0
76	.....	20.37	18.18	16.07	14.03	12.07	10.17	8.33	6.55	4.84	3.17	1.56	0
75	.....	20.75	18.52	16.36	14.28	12.28	10.34	8.47	6.66	4.91	3.22	1.59	0
74	.....	21.15	18.87	16.66	14.54	12.50	10.52	8.62	6.78	5.00	3.27	1.61	0
73	.....	21.56	19.23	16.98	14.83	12.72	10.71	8.77	6.90	5.08	3.33	1.64	0
72	.....	22.00	19.61	17.38	15.09	12.96	10.90	8.93	7.01	5.17	3.40	1.66	0
71	.....	22.45	20.00	17.64	15.38	13.20	11.11	9.09	7.14	5.26	3.44	1.69	0
70	.....	22.91	20.41	18.00	15.68	13.46	11.32	9.26	7.27	5.36	3.50	1.72	0
69	.....	23.40	20.83	18.36	16.00	13.72	11.53	9.43	7.40	5.45	3.57	1.75	0
68	.....	23.91	21.28	18.75	16.32	14.00	11.76	9.61	7.55	5.55	3.63	1.79	0
67	.....	24.44	21.74	19.15	16.66	14.29	12.00	9.80	7.69	5.66	3.70	1.82	0
66	.....	25.00	22.22	19.56	17.01	14.58	12.24	10.00	7.84	5.77	3.77	1.85	0
65	.....	25.58	22.72	20.00	17.39	14.89	12.50	10.20	8.00	5.88	3.84	1.89	0
64	.....	26.19	23.26	20.45	17.77	15.21	12.76	10.41	8.16	6.00	3.92	1.92	0
63	.....	26.82	23.81	20.93	18.18	15.55	13.04	10.64	8.33	6.12	4.00	1.96	0
62	.....	27.50	24.39	21.42	18.60	15.90	13.33	10.87	8.51	6.25	4.08	2.00	0
61	.....	28.20	25.00	21.95	19.04	16.28	13.63	11.11	8.69	6.38	4.16	2.04	0
60	.....	28.95	25.64	22.50	19.51	16.66	13.95	11.36	8.88	6.51	4.25	2.08	0
59	.....	29.73	26.32	23.07	20.00	17.07	14.28	11.62	9.09	6.66	4.34	2.13	0
58	.....	30.55	27.03	23.69	20.51	17.50	14.63	11.90	9.30	6.81	4.44	2.17	0
57	.....	31.42	27.78	24.32	21.05	17.94	15.00	12.19	9.52	6.97	4.54	2.22	0
56	.....	32.35	28.57	25.00	21.62	18.42	15.38	12.50	9.75	7.14	4.65	2.27	0
55	.....	33.33	29.41	25.71	22.22	18.91	15.79	12.82	10.00	7.31	4.76	2.33	0
54	.....	34.37	30.30	26.43	22.85	19.44	16.21	13.16	10.25	7.50	4.88	2.38	0
53	.....	35.48	31.25	27.27	23.54	20.00	16.66	13.51	10.52	7.70	5.00	2.44	0
52	.....	36.66	32.26	28.12	24.24	20.59	17.14	13.89	10.81	7.90	5.13	2.50	0
51	.....	.....	33.33	29.03	25.00	21.21	17.64	14.27	11.11	8.10	5.26	2.56	0
50	.....	.....	34.48	30.00	25.80	21.87	18.18	14.71	11.42	8.33	5.40	2.63	0

TABLE IX—Continued

Number of Wine Gallons of Brandy To Be Added to 100 Wine Gallons of Wine Containing 12 Per Cent of Alcohol

Per cent of alcohol in brandy	To produce a resulting fortified wine containing per cent of alcohol												
	24	23	22	21	20	19	18	17	16	15	14	13	12
95	16.90	15.27	13.69	12.16	10.66	9.21	7.79	6.41	5.06	3.75	2.46	1.21	0
94	17.14	15.49	13.88	12.32	10.81	9.33	7.89	6.49	5.12	3.79	2.50	1.23	0
93	17.39	15.71	14.08	12.50	10.95	9.45	8.00	6.57	5.19	3.84	2.53	1.25	0
92	17.64	15.94	14.28	12.67	11.11	9.58	8.10	6.66	5.26	3.89	2.56	1.26	0
91	17.91	16.17	14.49	12.85	11.26	9.72	8.21	6.75	5.33	3.94	2.59	1.28	0
90	18.18	16.41	14.71	13.04	11.42	9.86	8.33	6.85	5.40	4.00	2.63	1.30	0
89	18.46	16.66	14.93	13.23	11.59	10.00	8.45	6.94	5.48	4.05	2.66	1.32	0
88	18.75	16.92	15.15	13.43	11.76	10.14	8.57	7.04	5.55	4.10	2.70	1.33	0
87	19.04	17.18	15.39	13.63	11.94	10.29	8.69	7.14	5.63	4.16	2.74	1.35	0
86	19.35	17.46	15.63	13.84	12.12	10.44	8.82	7.24	5.71	4.22	2.77	1.37	0
85	19.67	17.74	15.87	14.06	12.30	10.60	8.95	7.35	5.79	4.28	2.81	1.39	0
84	20.00	18.03	16.13	14.28	12.50	10.76	9.09	7.46	5.88	4.34	2.85	1.41	0
83	.....	18.33	16.39	14.51	12.69	10.93	9.23	7.57	5.97	4.41	2.89	1.43	0
82	.....	18.64	16.66	14.75	12.90	11.11	9.37	7.69	6.06	4.47	2.94	1.45	0
81	.....	18.96	16.95	15.00	13.11	11.29	9.52	7.81	6.15	4.54	2.98	1.47	0
80	.....	19.30	17.24	15.25	13.33	11.47	9.67	7.93	6.25	4.61	3.03	1.49	0
79	.....	19.64	17.54	15.51	13.55	11.66	9.83	8.06	6.35	4.68	3.07	1.52	0
78	.....	20.00	17.86	15.79	13.79	11.86	10.00	8.19	6.45	4.76	3.12	1.54	0
77	.....	20.37	18.18	16.07	14.03	12.07	10.17	8.33	6.55	4.84	3.17	1.56	0
76	.....	20.75	18.52	16.36	14.28	12.28	10.34	8.47	6.66	4.91	3.22	1.59	0
75	.....	21.15	18.87	16.66	14.54	12.50	10.52	8.62	6.78	5.00	3.27	1.61	0
74	.....	21.56	19.23	16.98	14.83	12.72	10.71	8.77	6.90	5.08	3.33	1.64	0
73	.....	22.00	19.61	17.38	15.09	12.96	10.90	8.93	7.01	5.17	3.40	1.66	0
72	.....	22.45	20.00	17.64	15.38	13.20	11.11	9.09	7.14	5.26	3.44	1.69	0
71	.....	22.91	20.41	18.00	15.68	13.46	11.32	9.26	7.27	5.36	3.50	1.72	0
70	.....	23.40	20.83	18.36	16.00	13.72	11.53	9.43	7.40	5.45	3.57	1.75	0
69	.....	23.91	21.28	18.75	16.32	14.00	11.76	9.61	7.55	5.55	3.63	1.79	0
68	.....	24.44	21.74	19.15	16.66	14.29	12.00	9.80	7.69	5.66	3.70	1.82	0
67	.....	25.00	22.22	19.56	17.01	14.58	12.24	10.00	7.84	5.77	3.77	1.85	0
66	.....	25.58	22.72	20.00	17.39	14.89	12.50	10.20	8.00	5.88	3.84	1.89	0
65	.....	26.19	23.26	20.45	17.77	15.21	12.76	10.41	8.16	6.00	3.92	1.92	0
64	.....	26.82	23.81	20.93	18.18	15.55	13.04	10.64	8.33	6.12	4.00	1.96	0
63	.....	27.50	24.39	21.42	18.60	15.90	13.33	10.87	8.51	6.25	4.08	2.00	0
62	.....	28.20	25.00	21.95	19.04	16.28	13.63	11.11	8.69	6.38	4.16	2.04	0
61	.....	28.95	25.64	22.50	19.51	16.66	13.95	11.36	8.88	6.51	4.25	2.08	0
60	.....	29.73	26.32	23.07	20.00	17.07	14.28	11.62	9.09	6.66	4.34	2.13	0
59	.....	30.55	27.03	23.69	20.51	17.50	14.63	11.90	9.30	6.81	4.44	2.17	0
58	.....	31.42	27.78	24.32	21.05	17.94	15.00	12.19	9.52	6.97	4.54	2.22	0
57	.....	32.35	28.57	25.00	21.62	18.42	15.38	12.50	9.75	7.14	4.65	2.27	0
56	.....	33.33	29.41	25.71	22.22	18.91	15.79	12.82	10.00	7.31	4.76	2.33	0
55	.....	.....	30.30	26.43	22.85	19.44	16.21	13.16	10.25	7.50	4.88	2.38	0
54	.....	.....	31.25	27.27	23.52	20.00	16.66	13.51	10.52	7.70	5.00	2.44	0
53	.....	.....	32.26	28.12	24.24	20.59	17.14	13.89	10.81	7.90	5.13	2.50	0
52	.....	.....	33.33	29.03	25.00	21.21	17.64	14.27	11.11	8.10	5.26	2.56	0
51	.....	.....	34.48	30.00	25.80	21.87	18.18	14.71	11.42	8.33	5.40	2.63	0
50	.....	.....	35.71	31.03	26.66	22.58	18.75	15.15	11.76	8.57	5.55	2.70	0

Number of Wine Gallons of Brandy To Be Added to 100 Wine Gallons of Wine Containing 13 Per Cent of Alcohol

Per cent of alcohol in brandy	To produce a resulting fortified wine containing per cent of alcohol											
	24	23	22	21	20	19	18	17	16	15	14	13
95	15.49	13.88	12.32	10.81	9.33	7.89	6.49	5.12	3.79	2.50	1.23	0
94	15.71	14.08	12.50	10.95	9.45	8.00	6.58	5.19	3.84	2.53	1.25	0
93	15.94	14.28	12.67	11.11	9.58	8.10	6.66	5.26	3.89	2.56	1.26	0
92	16.17	14.49	12.85	11.26	9.72	8.21	6.75	5.33	3.94	2.59	1.28	0
91	16.41	14.70	13.04	11.42	9.85	8.33	6.84	5.40	4.00	2.63	1.29	0
90	16.66	14.93	13.23	11.59	10.00	8.45	6.94	5.48	4.05	2.66	1.32	0
89	16.92	15.15	13.43	11.76	10.14	8.57	7.04	5.55	4.10	2.70	1.33	0
88	17.18	15.39	13.63	11.94	10.29	8.69	7.14	5.63	4.16	2.74	1.35	0
87	17.46	15.63	13.84	12.12	10.44	8.82	7.24	5.71	4.22	2.77	1.37	0
86	17.74	15.87	14.06	12.30	10.60	8.95	7.35	5.79	4.28	2.81	1.39	0
85	18.03	16.13	14.28	12.50	10.76	9.09	7.46	5.88	4.34	2.85	1.41	0
84	18.33	16.39	14.51	12.69	10.93	9.23	7.57	5.97	4.41	2.89	1.43	0
83	18.64	16.66	14.75	12.90	11.11	9.37	7.69	6.06	4.47	2.94	1.45	0
82	18.96	16.95	15.00	13.11	11.29	9.52	7.81	6.15	4.54	2.98	1.47	0
81	19.30	17.24	15.25	13.33	11.47	9.67	7.93	6.25	4.61	3.03	1.49	0
80	19.64	17.54	15.51	13.55	11.66	9.83	8.06	6.35	4.68	3.07	1.52	0
79	20.00	17.86	15.79	13.79	11.86	10.00	8.19	6.45	4.76	3.12	1.54	0
78	20.37	18.18	16.07	14.03	12.07	10.17	8.33	6.55	4.84	3.17	1.56	0
77	20.75	18.52	16.36	14.28	12.28	10.34	8.47	6.66	4.91	3.22	1.59	0
76	21.15	18.87	16.66	14.54	12.50	10.52	8.62	6.78	5.00	3.27	1.61	0
75	21.56	19.23	16.98	14.83	12.72	10.71	8.77	6.90	5.08	3.33	1.64	0
74	22.00	19.61	17.38	15.09	12.96	10.90	8.93	7.01	5.17	3.40	1.66	0
73	22.45	20.00	17.64	15.38	13.20	11.11	9.09	7.14	5.26	3.44	1.69	0
72	22.91	20.41	18.00	15.68	13.46	11.32	9.26	7.27	5.36	3.50	1.72	0
71	23.40	20.83	18.36	16.00	13.72	11.53	9.43	7.40	5.45	3.57	1.75	0
70	23.91	21.28	18.75	16.32	14.00	11.76	9.61	7.55	5.55	3.63	1.79	0
69	24.44	21.74	19.15	16.66	14.29	12.00	9.80	7.69	5.66	3.70	1.82	0
68	25.00	22.22	19.56	17.01	14.58	12.24	10.00	7.84	5.77	3.77	1.85	0
67	25.58	22.72	20.00	17.39	14.89	12.50	10.20	8.00	5.88	3.84	1.89	0
66	26.19	23.26	20.45	17.77	15.21	12.76	10.41	8.16	6.00	3.92	1.92	0
65	26.82	23.81	20.93	18.18	15.55	13.04	10.64	8.33	6.12	4.00	1.96	0

TABLE IX—Continued

Number of Wine Gallons of Brandy To Be Added to 100 Wine Gallons of Wine Containing 13 Per Cent of Alcohol—Con.

Per cent of alcohol in brandy	To produce a resulting fortified wine containing per cent of alcohol											
	24	23	22	21	20	19	18	17	16	15	14	13
64	27.50	24.39	21.42	18.60	15.90	13.33	10.87	8.51	6.25	4.08	2.00	0
63	28.20	25.00	21.95	19.04	16.28	13.63	11.11	8.69	6.38	4.16	2.04	0
62	28.95	25.64	22.50	19.51	16.66	13.95	11.36	8.88	6.51	4.25	2.08	0
61	29.73	26.32	23.07	20.00	17.07	14.28	11.62	9.09	6.66	4.34	2.13	0
60		27.03	23.69	20.51	17.50	14.63	11.90	9.30	6.81	4.44	2.17	0
59		27.78	24.32	21.05	17.94	15.00	12.19	9.52	6.97	4.54	2.22	0
58		28.57	25.00	21.62	18.42	15.38	12.50	9.75	7.14	4.65	2.27	0
57		29.41	25.71	22.22	18.91	15.79	12.82	10.00	7.31	4.76	2.33	0
56		30.30	26.43	22.85	19.44	16.21	13.16	10.25	7.50	4.88	2.38	0
55		31.25	27.27	23.52	20.00	16.66	13.51	10.52	7.70	5.00	2.44	0
54		32.26	28.12	24.24	20.59	17.14	13.89	10.81	7.90	5.13	2.50	0
53		33.33	29.03	25.00	21.21	17.64	14.27	11.11	8.10	5.26	2.56	0
52		34.48	30.00	25.80	21.87	18.18	14.71	11.42	8.33	5.40	2.63	0
51		35.71	31.03	26.66	22.58	18.75	15.15	11.76	8.57	5.55	2.70	0
50		37.03	32.14	27.58	23.33	19.35	15.63	12.12	8.82	5.71	2.77	0

Number of Wine Gallons of Brandy To Be Added to 100 Wine Gallons of Wine Containing 14 Per Cent of Alcohol

Per cent of alcohol in brandy	To produce a resulting fortified wine containing per cent of alcohol										
	24	23	22	21	20	19	18	17	16	15	14
95	14.08	12.50	10.95	9.45	8.00	6.57	5.18	3.84	2.53	1.25	0
94	14.28	12.67	11.11	9.59	8.10	6.66	5.26	3.89	2.56	1.26	0
93	14.49	12.85	11.26	9.72	8.21	6.75	5.33	3.96	2.59	1.28	0
92	14.70	13.04	11.42	9.85	8.33	6.84	5.40	4.00	2.63	1.29	0
91	14.92	13.23	11.59	10.00	8.45	6.94	5.43	4.05	2.66	1.30	0
90	15.15	13.43	11.76	10.14	8.57	7.04	5.55	4.10	2.70	1.33	0
89	15.39	13.63	11.94	10.29	8.69	7.14	5.63	4.16	2.74	1.35	0
88	15.63	13.84	12.12	10.44	8.82	7.24	5.71	4.22	2.77	1.37	0
87	15.87	14.06	12.30	10.60	8.95	7.35	5.79	4.28	2.81	1.39	0
86	16.13	14.28	12.50	10.76	9.09	7.46	5.88	4.34	2.85	1.41	0
85	16.39	14.51	12.69	10.93	9.23	7.57	5.97	4.41	2.89	1.43	0
84	16.66	14.75	12.90	11.11	9.37	7.69	6.06	4.47	2.94	1.45	0
83	16.95	15.00	13.11	11.29	9.52	7.81	6.15	4.54	2.98	1.47	0
82	17.24	15.25	13.33	11.47	9.67	7.93	6.25	4.61	3.03	1.49	0
81	17.54	15.51	13.55	11.66	9.83	8.06	6.35	4.68	3.07	1.52	0
80	17.86	15.79	13.79	11.86	10.00	8.19	6.45	4.76	3.12	1.54	0
79	18.18	16.07	14.03	12.07	10.17	8.33	6.55	4.84	3.17	1.56	0
78	18.52	16.36	14.28	12.28	10.34	8.47	6.66	4.91	3.22	1.59	0
77	18.87	16.66	14.54	12.50	10.52	8.62	6.78	5.00	3.27	1.61	0
76	19.23	16.98	14.83	12.72	10.71	8.77	6.90	5.08	3.33	1.64	0
75	19.61	17.38	15.09	12.96	10.90	8.93	7.01	5.17	3.40	1.66	0
74	20.00	17.64	15.38	13.20	11.11	9.09	7.14	5.26	3.44	1.69	0
73	20.41	18.00	15.68	13.46	11.32	9.26	7.27	5.36	3.50	1.72	0
72	20.83	18.36	16.00	13.72	11.53	9.43	7.40	5.45	3.57	1.75	0
71	21.28	18.75	16.32	14.00	11.76	9.61	7.55	5.55	3.63	1.79	0
70	21.74	19.15	16.66	14.29	12.00	9.80	7.69	5.66	3.70	1.82	0
69	22.22	19.56	17.01	14.58	12.24	10.00	7.84	5.77	3.77	1.85	0
68	22.72	20.00	17.39	14.89	12.50	10.20	8.00	5.88	3.84	1.89	0
67	23.26	20.45	17.77	15.21	12.76	10.41	8.16	6.00	3.92	1.92	0
66	23.81	20.93	18.18	15.55	13.04	10.64	8.33	6.12	4.00	1.96	0
65	24.39	21.42	18.60	15.90	13.33	10.87	8.51	6.25	4.08	2.00	0
64	25.00	21.95	19.04	16.28	13.63	11.11	8.69	6.38	4.16	2.04	0
63	25.64	22.50	19.51	16.66	13.95	11.36	8.88	6.51	4.25	2.08	0
62	26.32	23.07	20.00	17.07	14.28	11.62	9.09	6.66	4.34	2.13	0
61	27.03	23.69	20.51	17.50	14.63	11.90	9.30	6.81	4.44	2.17	0
60	27.78	24.32	21.05	17.94	15.00	12.19	9.52	6.97	4.54	2.22	0
59	28.57	25.00	21.62	18.42	15.38	12.50	9.75	7.14	4.65	2.27	0
58	29.41	25.71	22.22	18.91	15.79	12.82	10.00	7.31	4.76	2.33	0
57	30.30	26.43	22.85	19.44	16.21	13.16	10.25	7.50	4.88	2.38	0
56	31.25	27.27	23.52	20.00	16.66	13.51	10.52	7.70	5.00	2.44	0
55	32.26	28.12	24.24	20.59	17.14	13.89	10.81	7.90	5.13	2.50	0
54	33.33	29.03	25.00	21.21	17.64	14.27	11.11	8.10	5.26	2.56	0
53	34.48	30.00	25.80	21.87	18.18	14.71	11.42	8.33	5.40	2.63	0
52	35.71	31.03	26.66	22.58	18.75	15.15	11.76	8.57	5.55	2.70	0
51	37.03	32.14	27.58	23.33	19.35	15.63	12.12	8.82	5.71	2.77	0
50	38.46	33.33	28.57	24.14	20.00	16.13	12.50	9.09	5.88	2.85	0

Number of Wine Gallons of Brandy To Be Added to 100 Wine Gallons of Wine Containing 15 Per Cent of Alcohol

Percent of alcohol in brandy	To produce a resulting fortified wine containing per cent of alcohol									
	24	23	22	21	20	19	18	17	16	15
95	12.67	11.11	9.58	8.10	6.66	5.26	3.90	2.56	1.26	0
94	12.85	11.26	9.72	8.21	6.75	5.33	3.94	2.59	1.28	0
93	13.04	11.42	9.85	8.33	6.84	5.40	4.00	2.63	1.29	0
92	13.23	11.59	10.00	8.45	6.94	5.47	4.05	2.66	1.31	0
91	13.43	11.76	10.14	8.57	7.04	5.55	4.10	2.70	1.33	0
90	13.63	11.94	10.29	8.69	7.14	5.63	4.16	2.74	1.35	0
89	13.84	12.12	10.44	8.82	7.24	5.71	4.22	2.77	1.37	0
88	14.06	12.30	10.60	8.95	7.35	5.79	4.28	2.81	1.39	0

TABLE IX—Continued

Number of Wine Gallons of Brandy To Be Added to 100 Wine Gallons of Wine Containing 15 Per Cent of Alcohol—Con.

Percent of alcohol in brandy	To produce a resulting fortified wine containing per cent of alcohol									
	24	23	22	21	20	19	18	17	16	15
87	14.28	12.50	10.76	9.09	7.46	5.88	4.34	2.85	1.41	0
86	14.51	12.69	10.93	9.23	7.57	5.97	4.41	2.89	1.43	0
85	14.75	12.90	11.11	9.37	6.69	6.06	4.47	2.94	1.45	0
84	15.00	13.11	11.29	9.52	7.81	6.15	4.54	2.98	1.47	0
83	15.25	13.33	11.47	9.67	7.93	6.25	4.61	3.03	1.49	0
82	15.51	13.55	11.66	9.83	8.06	6.35	4.68	3.07	1.52	0
81	15.79	13.79	11.86	10.00	8.19	6.45	4.76	3.12	1.54	0
80	16.07	14.03	12.07	10.17	8.33	6.55	4.84	3.17	1.56	0
79	16.36	14.28	12.28	10.34	8.47	6.66	4.91	3.22	1.59	0
78	16.66	14.54	12.50	10.52	8.62	6.78	5.00	3.27	1.61	0
77	16.98	14.83	12.72	10.71	8.77	6.90	5.08	3.33	1.64	0
76	17.38	15.09	12.96	10.90	8.93	7.01	5.17	3.40	1.66	0
75	17.64	15.38	13.20	11.11	9.09	7.14	5.26	3.44	1.69	0
74	18.00	15.68	13.46	11.32	9.26	7.27	5.36	3.50	1.72	0
73	18.36	16.00	13.72	11.53	9.43	7.40	5.45	3.57	1.75	0
72	18.75	16.32	14.00	11.76	9.61	7.55	5.55	3.63	1.79	0
71	19.15	16.66	14.29	12.00	9.80	7.69	5.66	3.70	1.82	0
70	19.56	17.01	14.58	12.24	10.00	7.84	5.77	3.77	1.85	0
69	20.00	17.39	14.89	12.50	10.20	8.00	5.88	3.84	1.89	0
68	20.45	17.77	15.21	12.76	10.41	8.16	6.00	3.92	1.92	0
67	20.93	18.18	15.55	13.04	10.64	8.33	6.12	4.00	1.96	0
66	21.42	18.60	15.90	13.33	10.87	8.51	6.25	4.08	2.00	0
65	21.95	19.04	16.28	13.63	11.11	8.69	6.38	4.16	2.04	0
64	22.50	19.51	16.66	13.95	11.36	8.88	6.51	4.25	2.08	0
63	23.07	20.00	17.07	14.28	11.62	9.09	6.66	4.34	2.13	0
62	23.69	20.51	17.50	14.63	11.90	9.30	6.81	4.44	2.17	0
61	24.32	21.05	17.94	15.00	12.19	9.52	6.97	4.54	2.22	0
60	25.00	21.62	18.42	15.38	12.50	9.75	7.14	4.65	2.27	0
59	25.71	22.22	18.91	15.79	12.82	10.00	7.31	4.76	2.33	0
58	26.43	22.85	19.44	16.21	13.16	10.25	7.50	4.88	2.38	0
57	27.27	23.52	20.00	16.66	13.51	10.52	7.70	5.00	2.44	0
56	28.12	24.24	20.59	17.14	13.89	10.81	7.90	5.13	2.50	0
55	29.03	25.00	21.21	17.64	14.27	11.11	8.10	5.26	2.56	0
54	30.00	25.80	21.87	18.18	14.71	11.42	8.33	5.40	2.63	0
53	31.03	26.66	22.58	18.75	15.15	11.76	8.57	5.55	2.70	0
52	32.14	27.58	23.33	19.35	15.63	12.12	8.82	5.71	2.77	0
51	33.33	28.57	24.14	20.00	16.13	12.50	9.09	5.88	2.85	0
50	34.61	29.62	25.00	20.69	16.66	12.90	9.37	6.06	2.94	0

[T. D. 4766]

INCOME TAX

REGULATIONS WITH RESPECT TO THE TAXATION OF NONRESIDENT ALIEN INDIVIDUALS AND FOREIGN CORPORATIONS NOT ENGAGED IN TRADE OR BUSINESS WITHIN THE UNITED STATES AND NOT HAVING AN OFFICE OR PLACE OF BUSINESS THEREIN AS AFFECTED BY THE RECIPROCAL TAX CONVENTION BETWEEN THE UNITED STATES AND CANADA, EFFECTIVE JANUARY 1, 1936

To Collectors of Internal Revenue and others concerned:

PARAGRAPH A. The reciprocal tax convention between the United States and Canada which was ratified August 13, 1937, provides as follows:

"Article I

"The High Contracting Parties mutually agree that the income taxation imposed in the two States shall be subject to the following reciprocal provisions:

'(*a*) The rate of income tax imposed by one of the Contracting States, in respect of income derived from sources therein, upon individuals residing in the other State, who are not engaged in trade or business in the taxing State and have no office or place of business therein, shall not exceed five per centum for each taxable year, so long as an equivalent or lower rate of income taxation is imposed by the other State upon individuals residing in the former State who are not engaged in trade or business in such other State and do not have an office or place of business therein.

"(*b*) The rate of income tax imposed by one of the Contracting States, in respect of dividends derived from sources therein, upon nonresident foreign corporations organized under the laws of the other State, which are not engaged in trade or business in the taxing State and have no office or place of business therein, shall not exceed five per centum for each taxable year, so long as an equivalent or lower rate of income taxation on dividends is imposed by the other State upon corporations organized under the laws of the

former State which are not engaged in trade or business in such other State and do not have an office or place of business therein.

"(c) Either State shall be at liberty to increase the rate of taxation prescribed by paragraphs (a) and (b) of this article, and in such case the other State shall be released from the requirements of the said paragraphs (a) and (b).

"(d) Effect shall be given to the foregoing provisions by both States as and from the first day of January, nineteen hundred and thirty-six.

"Article II

"The provisions of this Convention shall not apply to citizens of the United States of America domiciled or resident in Canada.

"Article III

"This Convention shall be ratified and shall take effect immediately upon the exchange of ratifications which shall take place at Washington as soon as possible.

"Signed, in duplicate, at Washington by the duly authorized representatives of Canada and the United States of America, this thirtieth day of December, in the year of our Lord, one thousand nine hundred and thirty-six."

PARAGRAPH B. Section 211 (a) of the Revenue Act of 1936 provides:

No United States business or office.—There shall be levied, collected, and paid for each taxable year, in lieu of the tax imposed by sections 11 and 12, upon the amount received, by every nonresident alien individual not engaged in trade or business within the United States and not having an office or place of business therein, from sources within the United States as interest (except interest on deposits with persons carrying on the banking business), dividends, rents, salaries, wages, premiums, annuities, compensations, remunerations, emoluments, or other fixed or determinable annual or periodical gains, profits, and income, a tax of 10 per centum of such amount, except that such rate shall be reduced, in the case of a resident of a contiguous country, to such rate (not less than 5 per centum) as may be provided by treaty with such country.

Section 501 of the Revenue Act of 1937 provides:

"(a) Section 211 (a) of the Revenue Act of 1936 is amended by adding at the end thereof a new sentence to read as follows: 'The tax imposed by this subsection shall not apply to any individual if the aggregate amount received during the taxable year from the sources above specified is more than $21,600.'

"(b) Section 211 of the Revenue Act of 1936, is further amended by adding at the end thereof a new subsection to read as follows:

"'(c) No United States Business or Office and Gross Income of More Than $21,600.—A nonresident alien individual not engaged in trade or business within the United States and not having an office or place of business therein who has a gross income for any taxable year of more than $21,600 from the sources specified in subsection (a), shall be taxable without regard to the provisions of subsection (a), except that—

"'(1) The gross income shall include only income from the sources specified in subsection (a); and

"'(2) The deductions (other than the so-called "charitable deduction" provided in section 213 (c) shall be allowed only if and to the extent that they are properly allocable to the gross income from the sources specified in subsection (a); and

"'(3) The aggregate of the normal and surtax under sections 11 and 12 shall, in no case, be less than 10 per centum of the gross income from the sources specified in subsection (a).'

"(c) The amendments made by subsections (a) and (b)—

"(1) Shall apply only to taxable years beginning after December 31, 1936; and

"(2) Shall not apply to a resident of a contiguous country so long as there is in effect a treaty with such country (ratified prior to the date of the enactment of this Act) under which rates of tax under section 211 (a), prior to its amendment by subsection (a), were reduced."

PARAGRAPH C. Section 231 (a) of the Revenue Act of 1936 provides:

Nonresident corporations.—There shall be levied, collected, and paid for each taxable year, in lieu of the tax imposed by sections 13 and 14, upon the amount received by every foreign corporation not engaged in trade or business within the United States and not having an office or place of business therein, from sources within the United States as interest (except interest on deposits with persons carrying on the banking business), dividends, rents, salaries, wages, premiums, annuities, compensations, remunerations, emoluments, or other fixed or determinable annual or periodical gains, profits, and income, a tax of 15 per centum of such amount, except that in the case of dividends the rate shall be 10 per centum, and except that in the case of corporations organized under the laws of a contiguous country such rate of 10 per centum with respect to dividends shall be reduced to such rate (not less than 5 per centum) as may be provided by treaty with such country.

PARAGRAPH D. Section 143 (a) of the Revenue Act of 1936 provides in part:

Tax-free covenant bonds.—(1) Requirement of Withholding.—In any case where bonds, mortgages, or deeds of trust, or other similar obligations of a corporation, issued before January 1, 1934, contain a contract or provision by which the obligor agrees to pay any portion of the tax imposed by this title upon the obligee, or to reimburse the obligee for any portion of the tax, or to pay the interest without deduction for any tax which the obligor may be required or permitted to pay thereon, or to retain therefrom under any law of the United States, the obligor shall deduct and withhold a tax equal to 2 per centum of the interest upon such bonds, mortgages, deeds of trust, or other obligations, whether such interest is payable annually or at shorter or longer periods, if payable to an individual, a partnership, or a foreign corporation not engaged in trade or business within the United States and not having an office or place of business therein: *Provided*, That if the liability assumed by the obligor does not exceed 2 per centum of the interest, then the deduction and withholding shall be at the following rates: (A) 10 per centum in the case of a nonresident alien individual (except that such rate shall be reduced, in the case of a resident of a contiguous country, to such rate, not less than 5 per centum, as may be provided by treaty with such country), or of any partnership not engaged in trade or business within the United States and not having any office or place of business therein and composed in whole or in part of nonresident aliens, (B) in the case of such a foreign corporation, 15 per centum, and (C) 2 per centum in the case of other individuals and partnerships: *Provided further*, That if the owners of such obligations are not known to the withholding agent the Commissioner may authorize such deduction and withholding to be at the rate of 2 per centum, or, if the liability assumed by the obligor does not exceed 2 per centum of the interest, then at the rate of 10 per centum.

Paragraph E. Section 143 (b) of the Revenue Act of 1936 provides:

Nonresident aliens.—All persons, in whatever capacity acting, including lessees or mortgagors of real or personal property, fiduciaries, employers, and all officers and employees of the United States, having the control, receipt, custody, disposal, or payment of interest (except interest on deposits with persons carrying on the banking business paid to persons not engaged in business in the United States and not having an office or place of business therein), dividends, rent, salaries, wages, premiums, annuities, compensations, remunerations, emoluments, or other fixed or determinable annual or periodical gains, profits, and income (but only to the extent that any of the above items constitutes gross income from sources within the United States), of any nonresident alien individual, or of any partnership not engaged in trade or business within the United States and not having any office or place of business therein and composed in whole or in part of nonresident aliens, shall (except in the cases provided for in subsection (a) of this section and except as otherwise provided in regulations prescribed by the Commissioner under section 215) deduct and withhold from annual or periodical gains, profits, and income a tax equal to 10 per centum thereof, except that such rate (not less than 5 per centum) as may be provided by treaty with such country: Provided, That no such deduction or withholding shall be required in the case of dividends paid by a foreign corporation unless (1) such corporation is engaged in trade or business within the United States or has an office or place of business therein, and (2) more than 85 per centum of the gross income of such corporation for the three-year period ending with the close of its taxable year preceding the declaration of such dividends (or for such part of such period as the corporation has been in existence) was derived from sources within the United States as determined under the provisions of section 119: Provided further, That the Commissioner may authorize such tax to be deducted and withheld from the interest upon any securities the owners of which are not known to the withholding agent. Under regulations prescribed by the Commissioner, with the approval of the Secretary, there may be exempted from such deduction and withholding the compensation for personal services of nonresident alien individuals who enter and leave the United States at frequent intervals.

PARAGRAPH F. Section 143 (c) of the Revenue Act of 1936 provides:

Return and payment.—Every person required to deduct and withhold any tax under this section shall make return thereof on or before March 15 of each year and shall on or before June 15, in lieu of the time prescribed in section 56, pay the tax to the official of the United States Government authorized to receive it. Every such person is hereby made liable for such tax and is hereby indemnified against the claims and demands of any person for the amount of any payments made in accordance with the provisions of this section.

PARAGRAPH G. Section 144 (a) of the Revenue Act of 1936 provides:

General rule.—In the case of foreign corporations subject to taxation under this title not engaged in trade or business within the United States and not having any office or place of business therein, there shall be deducted and withheld at the source in the same manner and upon the same items of income as is provided in section 143 a tax equal to 15 per centum thereof, except that in the case of dividends the rate shall be 10 per centum, and except that in the case of corporations organized under the laws of a contiguous country such rate of 10 per centum with respect to dividends shall be reduced to such rate (not less than 5 per centum) as may be provided by treaty with such country; and such tax shall be returned and paid in the same manner and subject to the same conditions as provided in that section: *Provided*, That in the case of interest described in subsection (a) of that section (relating to tax-free covenant bonds) the deduction and withholding shall be at the rate specified in such subsection.

Paragraph H. Section 322 of the Revenue Act of 1936 provides in part:

(a) *Authorization.*—Where there has been an overpayment of any tax imposed by this title, the amount of such overpayment shall be credited against any income, war-profits, or excess-profits tax or installment thereof then due from the taxpayer, and any balance shall be refunded immediately to the taxpayer.

(b) *Limitation on allowance.*—

(1) *Period of limitation.*—Unless a claim for credit or refund is filed by the taxpayer within three years from the time the return was filed by the taxpayer or within two years from the time the tax was paid, no credit or refund shall be allowed or made after the expiration of whichever of such periods expires the later. If no return is filed by the taxpayer, then no credit or refund shall be allowed or made after two years from the time the tax was paid, unless before the expiration of such period a claim therefor is filed by the taxpayer.

(2) *Limit on amount of credit or refund.*—The amount of the credit or refund shall not exceed the portion of the tax paid during the three years immediately preceding the filing of the claim, or, if no claim was filed, then during the three years immediately preceding the allowance of the credit or refund.

PARAGRAPH I. Section 1001 of the Revenue Act of 1936 provides in part:

(a) When used in this Act—

(1) The term "person" means an individual, a trust or estate, a partnership, or a corporation.

(2) The term "corporation" includes associations, joint-stock companies, and insurance companies.

(3) The term "partnership" includes a syndicate, group, pool, joint venture, or other unincorporated organization, through or by means of which any business, financial operation, or venture is carried on, and which is not, within the meaning of this Act, a trust or estate or a corporation; and the term "partner" includes a member in such a syndicate, group, pool, joint venture, or organization.

(4) The term "domestic" when applied to a corporation or partnership means created or organized in the United States or under the law of the United States or of any State or Territory.

(5) The term "foreign" when applied to a corporation or partnership means a corporation or partnership which is not domestic.

(6) The term "fiduciary" means a guardian, trustee, executor, administrator, receiver, conservator, or any person acting in any fiduciary capacity for any person.

(7) The term "withholding agent" means any person required to deduct and withhold any tax under the provisions of section 143 or 144.

* * * * *

(b) The terms "includes" and "including" when used in a definition contained in this Act shall not be deemed to exclude other things otherwise within the meaning of the term defined.

Pursuant to the provisions of section 62 of the Revenue Act of 1936 the following regulations are hereby prescribed to carry into effect the quoted provisions of the Convention between the United States of America and Canada, and all regulations inconsistent herewith are modified accordingly:

ART. 1. *Rate of tax.*—The Convention was ratified and became effective August 13, 1937. Under the terms of the Convention, the provisions of which are retroactive to January 1, 1936, the tax at the rate of 10 percent imposed by section 211 (*a*) is reduced to 5 percent with respect to the amount received from sources within the United States as interest (except interest on deposits with persons carrying on the banking business), dividends, rents, salaries, wages, premiums, annuities, compensations, remunerations, emoluments, or other fixed or determinable annual or periodical gains, profits, and income, by every nonresident alien individual not engaged in trade or business within the United States and not having an office or place of business therein, provided he is a resident of Canada.

Under the terms of the Convention the tax at the rate of 10 percent imposed by section 231 (*a*) is reduced to 5 percent with respect to the amount received from sources within the United States as dividends, by every foreign corporation not engaged in trade or business within the United States and not having an office or place of business therein, provided it is organized under the laws of Canada.

ART. 2. *Withholding in general.*—The items of income from sources within the United States enumerated in sections 211 (*a*) and 231 (*a*) are subject to the withholding provisions of sections 143 and 144, at the rates specified therein, with the exception that all items of fixed or determinable annual or periodical income paid to nonresident alien individuals who are residents of Canada (other than the compensation for personal services received by such residents who enter and leave the United States at frequent intervals) and dividends paid to nonresident foreign corporations which are organized under the laws of Canada are subject to withholding at the reduced rate of 5 percent. In general, the provisions of Article 143–1 to Article 143–9, and Articles 144–1 and 144–2 of Regulations 94[1] are applicable in administering the provisions of the Convention.

ART. 3. *Resident of Canada or corporations organized under the laws of Canada.*—For the purpose of withholding, every individual addressee in Canada (including a nonresident alien individual, fiduciary, or partnership) shall be considered by United States withholding agents as a resident of Canada, and every corporation whose address is in Canada shall be considered by such withholding agents as a corporation organized under the laws of Canada. These provisions relative to Canadian residents and Canadian corporations are based upon the assumption that the payee is the actual owner of the property from which the income is derived and consequently is the person liable to the tax upon such income.

A person receiving income which is distributable to an organization exempt from Federal income tax under section 101 of the Revenue Act of 1936 or corresponding sections of prior revenue acts, shall be considered merely a conduit through which the income flows and not a taxable entity. In preparing ownership certificate, Form 1001, the person receiving the income should make a notation thereon substantially as follows: "As this organization has been held to be exempt from the payment of income tax by the Commissioner of Internal Revenue under date of _____, the interest on this certificate is not subject to withholding", giving the date of the official letter in which the organization was held to be exempt. A similar statement made with respect to other items of fixed or determinable annual or periodical income which are subject to withholding will relieve the withholding agent from liability to withhold the tax.

ART. 4. *Addressee not actual owner.*—If the addressee in Canada is a nominee or agent through whom the income flows to a person who is not entitled to the reduced rate of 5 percent, i. e., a nonresident alien individual who is not a resident of Canada, or a nonresident foreign corporation not organized under the laws of Canada, the addressee in Canada from whom a tax of only 5 percent was withheld,

[1] 1 F. R. 1908–1911; 2 F. R. 2135 (DI).

becomes in turn a withholding agent, and is required to withhold an additional tax of 5 percent (10 percent on income other than dividends received for such foreign corporation) before transmitting the income.

(*a*) *Fiduciaries and partnerships.*—Fiduciaries and partnerships with an address in Canada are liable to have 5 percent income tax deducted at the source. If the fiduciary or partnership is acting as a nominee or agent receiving the income for and on behalf of a person other than a resident of Canada or a corporation organized under the laws of Canada, an additional tax of 5 percent or 10 percent, as the case may be, must be deducted by such Canadian fiduciary or partnership and remitted to the United States Treasury. If the fiduciary or partnership receives the income in its own right and distributes its income under a trust deed or partnership agreement, then no further tax in Canada need be deducted.

(*b*) *Tax-free covenant bonds.*—No additional withholding is required with respect to interest on so-called tax-free covenant bonds issued prior to January 1, 1934, where the liability assumed by the obligor exceeds 2 percent but under section 143 (*a*) of the Revenue Act of 1936 only 2 percent income tax is required to be withheld at the source. An additional tax of 5 percent or 10 percent, as the case may be, is required to be withheld, however, by Canadian withholding agents as above provided, (1) where the bonds were issued prior to January 1, 1934, and the liability assumed by the obligor does not exceed 2 percent; (2) where the bonds were issued on or after January 1, 1934, irrespective of the liability assumed by the obligor; (3) where the bonds do not contain a tax-free covenant, regardless of the date of issue.

ART. 5. *Refund of excess tax.*—Although the higher rates of tax imposed by sections 211 (a) and 231 (a) of the Revenue Act of 1936 were retroactive to income received on and after January 1, 1936, withholding at the higher rates of tax was not in effect until July 2, 1936. Consequently, and since during the period January 1 to July 1, 1936 (both dates inclusive), no tax was deducted from dividends paid to nonresident alien individuals, the full amount of tax imposed was not withheld at the source.

The following is a schedule of the rates of tax which, in general, were required to be withheld during the year 1936 from nonresident alien individuals, nonresident partnerships, and nonresident foreign corporations:

Tax Withheld at Source During 1936 Expressed in Percentages of the Gross Amount of the Income

Kind of income	Period January 1–July 1, 1936, both dates inclusive (under the Revenue Act of 1934 and that Act as amended by the Revenue Act of 1935)		Period July 2–December 31, 1936 (under the Revenue Act of 1936)	
	Corporations	Individuals and partnerships	Corporations	Individuals and partnerships
Dividends	15% of 10% (1½%) (d)	None	10% (c)	10% (c)
Corporate Bond interest:				
(a)	15%	4% (d)	15%	10% (c)
(b)	2% (e)	2% (d)	2% (e)	2% (d)
All other fixed or determinable annual or periodical income including Rents, Royalties, Annuities, Other Interest	15%	4% (d)	15%	10% (c)

(a) 1, Bonds issued on or after January 1, 1934, irrespective of liability assumed by obligor;
2, Bonds issued before January 1, 1934, and liability assumed by obligor does not exceed 2%;
3, Bonds without tax-free covenant irrespective of date of issue.
(b) Bonds issued before January 1, 1934, and liability assumed by obligor exceeds 2%.
(c) The withholding rates applicable to this kind of income, are by reason of the Convention, reduced to 5%.
(d) The tax imposed on such income is 5%. The taxpayer is liable for the difference between 5% and the rate withheld.
(e) The tax imposed on such income is 15%. The taxpayer is liable for the difference between 15% and the rate withheld.

In cases where the tax paid (whether paid directly or withheld at the source) is in excess of the tax due from the taxpayer under the Convention, in order to compute the tax properly it will be necessary for the taxpayer to file an income tax return, Form 1040NB, for individuals and Form 1120NB, for corporations, whether or not an income tax return for the year 1936 was filed. In cases where a return has been filed for 1936, the return to be filed under these regulations should be marked "Amended." *The taxpayer's total fixed or determinable annual or periodical income from sources within the United States for the year 1936 should be reported.* In the case of income reported on Form 1040NB, the tax on the income should be computed at the rate of 5 percent. In the case of income reported on Form 1120NB, a tax at the rate of 5 percent should be computed on the dividends only, a tax at the rate of 15 percent being computed on the other items of income reported on the return. Where there has been an overpayment of income-tax claim therefor on Form 843 should accompany the return in order to protect the taxpayers against the running of the statute of limitations provided by section 322 of the Revenue Act of 1936. Any tax paid for the year 1936 in excess of that due from the owner of the income will be refunded by the United States Government as required by law. Where there is a deficiency in tax notice thereof will be sent by the United States Government.

ART. 6. *Release of excess tax withheld.*—Every withholding agent shall immediately release to Canadian addressees (other than corporations) any income tax withheld since December 31, 1936, in excess of 5 percent, and in the case of corporations any income tax withheld since such date in excess of 5 percent with respect to dividends. In such cases claims need not be filed with the withholding agent.

A statement should be attached to annual withholding returns, Form 1013, explaining the discrepancy between the amount of the tax reported as withheld on monthly returns, Form 1012, and the total amount of such tax as shown on Form 1013, resulting from the release of tax in excess of 5 percent.

ART. 7. *Return of tax withheld from Canadian addressees.*—Every United States withholding agent shall make and file with the collector, in duplicate, an information return on Form 1042B, for the calendar year 1937 and each subsequent calendar year, in addition to withholding return, Form 1042, with respect to the items of income from which a tax of only 5 percent was withheld from Canadian addressees. There shall be reported on Form 1042B not only such items of income listed on Form 1042, but also such items of interest listed on monthly returns, Form 1012, including items of interest where the liability for withholding is only 2 percent. In the case of corporations whose addresses are within Canada, only the fixed or determinable income from sources within the United States consisting of dividends should be reported.

ART. 8. *Returns filed by Canadian withholding agents.*—Form 1042 is the form to be prepared annually for the calendar year 1937 and each subsequent calendar year by persons in Canada who receive for the account of any person (other than a resident of Canada or a corporation organized under the laws of Canada) fixed or determinable annual or periodical income from sources within the United States which is subject to tax at the rate of 10 percent or 15 percent, as the case may be, but from which only 5 percent has been withheld as a result of the Convention. Annual withholding return, Form 1042, should be forwarded to the Collector of Internal Revenue, Baltimore, Maryland, accompanied by the tax shown to be due in United States dollars. An extension of time to June 15 is hereby granted to Canadian withholding agents in which to file such returns.

[SEAL] GUY T. HELVERING,
Commissioner of Internal Revenue.

Approved, October 7, 1937.

ROSWELL MAGILL,
Acting Secretary of the Treasury.

[F. R. Doc. 37-2994; Filed, October 9, 1937; 10:44 a. m.]