

QUARTERMASTER CORPS
TENTATIVE
SPECIFICATION

C.Q.D. No. 55B
December 5, 1942
Superseding
C.Q.D. No. 55A
October 24, 1942

SQUARE BISCUIT TYPE "C"

A. APPLICABLE SPECIFICATIONS.

A-1. The following specifications, of the issue in effect on date of invitation for bids, shall form a part of this specification:

Federal Specification SS-S-31 - Salt; Table,
Federal Specification EE-S-571 - Soda; Baking.
Federal Specification JJJ-S-791 - Sugar; Beet or Cane.
Federal Specification LLL-C-631a- Boxes; Fiber, Corrugated.

Tentative U. S. Army Specification No. 22-42, "Supplies, Subsistence, for the United States Army, Conditions Governing the Purchase of."

U. S. Army Specification No. 100-2, "Standard Specifications for Marking Shipments."

Quartermaster Corps Tentative Specification OQMG No. 12-A, "Packing for Overseas Shipments."

Quartermaster Corps Tentative Specification dated August 20, 1942, "Milk, Dry, Powdered; Skimmed and Whole."

B. TYPE AND GRADE.

B-1. Shall be of the type and grade indicated herein.

C. MATERIAL AND WORKMANSHIP.

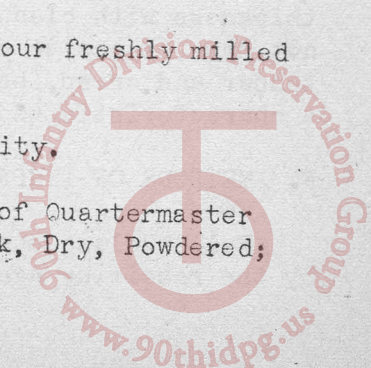
C-1. Material.

C-1a. The flour used shall be soft wheat flour, not lower than a "straight" grade milled from a No. 2 grade wheat or better.

C-1b. The whole wheat flour used shall be entire wheat flour freshly milled from No. 2 grade wheat or better.

C-1c. The invert sugar used shall be good commercial quality.

C-1d. The powdered milk used shall meet the requirements of Quartermaster Corps Tentative Specification dated August 20, 1942, Type I, Milk, Dry, Powdered; Skimmed and Whole.



C-1e. The shortening used shall be hydrogenated vegetable shortening with or without the addition of a suitable stabilizing agent and shall have an active oxygen keeping test of 100 hours minimum and shall retain satisfactory flavor after heating to a temperature of 400 degrees F.

C-1f. The sugar shall meet the requirements of Federal Specification JJJ-S-791 for Type I sugar.

C-1g. The tartaric acid used shall be U. S. P. grade.

C-1h. The soda used shall meet the requirements of Federal Specification EE-S-571.

C-1i. The malt, if used, shall be of best commercial grade.

C-2. Workmanship. Shall be prepared in accordance with best commercial practice, under strictly sanitary conditions.

D. GENERAL REQUIREMENTS.

D-1. All deliveries shall conform, in every respect, to the provisions of the Federal Food, Drug, and Cosmetic Act and regulations promulgated thereunder.

E. DETAIL REQUIREMENTS.

E-1. Biscuits. The product shall be prepared from ingredients in the following proportions:

Flour, soft wheat.....	75	pounds
Flour, whole wheat.....	25	pounds
Shortening.....	12	pounds
Sucrose.....	5	pounds
Invert sugar.....	5.5	pounds
Milk, dry, powdered, skimmed.....	8.0	pounds
Malt (Optional).....	3.5	pounds
Salt.....	1.5	pounds

Soda, tartaric acid and/or other leavening agents according to best commercial practice.
The finished product shall contain not more than 7 percent moisture.

E-2. The individual biscuits shall be 2-9/16 inches square by 5/16 inches thick and the count shall be from 24 to 26 per pound.

E-3. The biscuits shall be uniformly well baked, shall be of uniform size and thickness with clean cut edges, shall be reasonably free from "cripples" and shall not have excessive dusting flour. They shall be open, fully grained, reasonably tender and crisp, be reasonably free from checking after packaging, and shall have a characteristic and appetizing flavor.

F. METHODS OF INSPECTION AND TEST.

F-1. Unless otherwise specified, inspection shall be made at point of delivery by the receiving agencies.



F-2. Chemical analyses, if required by the purchaser in the examination or testing of samples and deliveries under this specification, shall be made in accordance with methods of the Association of Official Agricultural Chemists in effect on date of invitation for bids.

F-3. The active oxygen keeping test shall be conducted by the method of King, Roschen, and Irwin, described in "Oil and Soap", Volume 10, No. 6, Pages 105 to 109, (June 3, 1933).

G. PACKAGING, LABELING, PACKING, AND MARKING FOR SHIPMENT.

G-1. Packaging.

G-1a. Domestic and Overseas Shipments. The biscuits shall be packaged about 2 pounds (net) in commercial cracker shells (packages) completely lined with waxed unbleached glassine paper and double overwrapped with waxed paper. The longitudinal seams of the two outer wraps shall be on opposite sides of the package, and the closure on each overwrap shall be heat-sealed.

The glassine liner shall be made from unbleached glassine of at least 25 pounds per ream (24" x 36" - 500) having a grease resistance (TAPPI, T454M-42) of over 600 seconds, waxed with 3 pounds per ream (24" x 36" - 500) of fully refined wax (1½ pounds per ream each side) having a melting point (ASTM D87-37) of not less than 132° F. The wax shall be odorless and tasteless. This liner shall overlap itself sufficiently to insure adequate protection of the contents from the board.

The two-pound packages shall be neatly fabricated from single ply folding boxboard, lined with news or manila on both faces, and shall be not less than 0.024 inch thick with at least a No. 3 finish (National Paperboard Association Standards) and heavily treated with sodium silicate. The board shall be clean and uniform in color and conform in all respects with the best commercial quality of board used for cracker shells. The materials used shall be absolutely free from objectionable odor.

The overwraps shall be made from a good quality sulphite or kraft wrapping paper, having a basis weight of at least 25 pounds per ream (24" x 36" - 500) waxed with not less than 4 pounds per ream on each side to give a finished sheet weighing at least 33 pounds (24" x 36" - 500). The wax used shall be fully refined paraffin having a melting point (ASTM, D87-37) of 132° F. The waxed sheet shall have a bursting strength (TAPPI, T403M-36) of at least 17 points, and a tearing resistance (TAPPI, T414M-40) in any direction of at least 22 grams per sheet.

G-2. Labeling. Each individual 2-pound package shall bear the following imprinted on the outside overwrap, or on the carton if legible through the overwraps.

Square Biscuit, Type "C"

Ingredients: Flour, Whole Wheat Flour,
Shortening, Sugar, Invert Sugar, Powdered
Skim Milk, Malt (if included) and Leavening.

Net Weight - 2 lbs.

Name and Address of Manufacturer.



G-3. Packing.

G-3a. Domestic Shipment. Unless otherwise requested, the individual 2-pound package shall be packed in suitable commercial containers so constructed as to insure acceptance by common or other carriers, for safe transportation, at the lowest rate, to the point of delivery.

G-3b. Overseas Shipment.

(1) Twelve 2-pound packages, as described under paragraph G-1, shall be packed in a solid fiber carton, sealed and made watertight.

The packages shall be packed in three tiers in a carton, four packages per tier, either two packages wide and two packages long or alternately four in a row; in either case, placed side by side with the ends and the major panels vertical (when the carton opening is up). Solid fiber pads at least 0.090 inch thick shall be placed on the top and bottom of the carton and between adjoining tiers (4 pads in all).

The solid fiber carton shall be of regular slotted construction, manufactured of board not less than 0.090-inch thick and meeting the requirements of Quartermaster Corps Tentative Specification OQMG No. 12-A. The carton shall bear an outside waterproofing liner consisting of not less than 60 pounds per ream (24" x 36" - 500) kraft, impregnated with not less than 25 pounds of asphalt per ream (24" x 36" - 500). This sheet shall be laminated to a second kraft sheet of not less than 30 pounds per ream (24" x 36" - 500), employing 30 pounds per ream of asphalt as the laminating agent. (The second kraft sheet is not impregnated). This liner shall be laminated to a solid fiber board, previously weatherproofed, in compliance with above specification OQMG No. 12-A and shall be part of the 0.090 inch of thickness.

This carton shall be securely closed by a water-resistant adhesive. Special attention shall be given to securing tight corners and closely abutted flaps. The distance between the ends of the outer flaps shall not exceed 1/8 inch; no overlap will be tolerated. The manufacturer's joint shall be along an edge having the greatest dimension. This carton shall be made watertight by the method described under G-3b(3).

(2) Two of the sealed watertight cartons described under paragraph G-3b(1) shall be inserted, closures horizontal (when the case opening is up) and major panel to major panel in a 0.090 inch regular slotted, weatherproof solid fiber case, constructed with the same liner and in the same manner as described for the carton in G-3b(1). If the alternate method of packing given in G-3b(1) is employed, then two of the sealed, watertight cartons shall be inserted in the case with their closures vertical (when the case opening is up) and with their side panels horizontal and adjoining. The case shall be securely closed by a water-resistant adhesive and shall be made watertight as described under paragraph G-3b(3). The manufacturer's joint shall be along an edge having the greatest dimension.

(3) The cartons described under paragraph G-3b(1) and the cases described under G-3b(2) shall be made watertight by one of the following procedures:

(a) The sealed carton and the case shall be generously coated with a hot asphaltic material along the manufacturer's joint. A three-inch wide strip of kraft paper, having a basis weight of 60 pounds per ream (24" x 36" - 500), a bursting test of not less than 55 points, and impregnated with 25 pounds of

Asphalt per ream shall be applied securely along the hot asphalted joint.

Both closures shall be dipped in an asphaltic mixture, kept at the optimum temperature, to a depth of not less than 1-1/2 nor more than 2 inches. The coated closure shall then be covered with a sheet of kraft paper, having a basis weight of 60 pounds per ream (24" x 36" - 500), a bursting strength of at least 55 points and impregnated with 25 pounds of asphalt per ream. The paper shall be folded over the sides of the case to a distance of two inches, the corners being neatly tucked.

(b) The case or carton shall be provided with a tight fitting outer sleeve, covering the top, bottom and sides. The sleeve shall be made from a scored single strip of fiber material between 0.060 and 0.070 inch thick, constructed with an asphaltic barrier similar to the board used for the case or carton described in G-3b(1). The width of the sleeve shall be equal to the outside width of the case or carton and shall not exceed this width by more than 1/8 inch. The manufacturer's joint on the sleeve shall be on the outside and shall be metal stitched.

After sealing the case or carton, the sleeve shall be slipped over it into position. By means of a special applicator, comprising a metal sheet having an approximate width of either one-half or the full width of the case or carton and provided with a suitable handle, a film of asphalt at the optimum temperature (about 270° F.) shall be applied along and over the manufacturer's joint and stitches.

A strip of No. 2 kraft paper (untreated), having a basis weight of about 60 pounds (24" x 36" - 500) shall be placed over the asphalted joint, the strip being the length of the joint, and wide enough to protrude two inches beyond the edges of the asphalt on the joint.

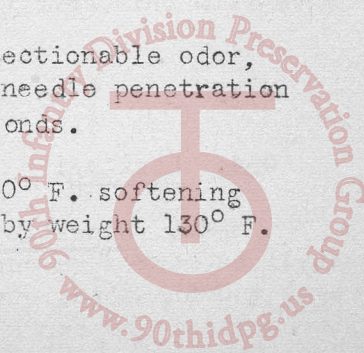
The box and sleeve shall then be stood on end and with an applicator of suitable width, hot asphalt shall be applied across the edges of the sleeve in sufficient quantity to fill the four channels formed by each outside edge of the box and each edge of the sleeve. Enough asphalt shall be applied so that after cooling, the strip of asphalt around the end of the box shall be at least one inch wide. A sheet of No. 2 kraft paper (untreated), having a basis weight of about 60 pounds (24" x 36" - 500), and of such a size as to overlap each edge of the end of the box by not less than 2 inches, shall be placed over the asphalted end. The purpose of the kraft paper is to cover the hot asphalt seal and thus facilitate handling and prevent blocking of the asphalt.

The box shall then be reversed and the other end of the box and sleeve similarly sealed and paper applied.

(4) The asphaltic material employed under G-3b(1) and G-3b(3) shall be one of the following:

(a) Steam refined asphalt, free from objectionable odor, having a softening point (ASTM D126-36) of 150 to 160° F. and a needle penetration (ASTM D5-25) of 35 to 45 at 77° F. with a 100 gm. load for 5 seconds.

(b) A mixture of 85 percent by weight 190° F. softening point (ASTM, D126-36) odorless oxidized asphalt, and 15 percent by weight 130° F. melting point (ASTM, D127-30) petrolatum.



(5) ~~Weatherproof~~ (2) shall be packed in a special weatherproof corrugated outer container, complying with applicable portions of Federal Specification LLL-B-631a as amended, and the following requirements:

(a) The case shall be Style No. 1 (LLL-B-631a), of special slotted construction, and either have both the inner and outer flaps meeting (allowable distance apart $1/8$ ") or have the inner flaps meeting and the outer flaps providing a full overlap as in National Container Association Style No. 7.

(b) The manufacturer's joint shall be wire stitched.

(c) The corrugating material shall be not less than 0.010 inch thick.

(d) The flutes on the corrugations shall be either "B" (approximately 50 per foot) or "C" (approximately 42 per foot).

(e) The thickness of both facings shall be not less than 0.023 inches.

(f) Both the facing and corrugating material shall be dense and specially treated for water resistance, and the adhesive used for corrugating shall be highly water resistant. The finished board shall comply with the following test requirements:

(1) Bursting Strength (TAPPI 403m-36) not less than 400 points when tested dry.

(2) Samples of board 6 x 10 inches, cut from sound unscored portions of the cases and completely submerged in water at room temperature for 24 hours shall then have a bursting strength of not less than 150 points when tested wet. After this submersion the adhesive used shall be such as not to allow the facings to be separated without offering appreciable resistance.

(g) After packing the cartons, the flaps of the outer case shall be securely sealed by means of metal stitches or a water resistant adhesive (other than asphalt) applied over all areas of contact between the flaps.

(h) The case shall be strapped with two curved edge or flat metal straps $3/8$ " x 0.015" or pieces of 15-gauge round wire placed parallel around the case over the sealed flaps, and each strap shall be located approximately one-sixth of the length of the case from the ends. The case maker shall print the cases with suitable marks to indicate the required position of the straps.

(i) The case maker shall print under the Consolidated Freight Classification Stamp, in black letters $3/16$ " high, a statement of compliance with this specification as follows:

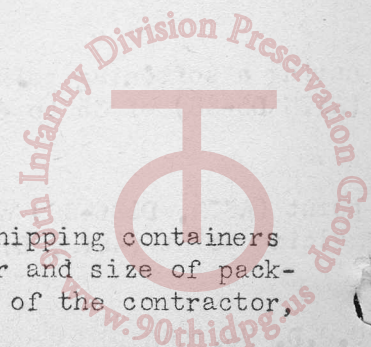
"Weatherproof. In compliance with C.Q.D. Specification Nos. 55B, 84A and 95."

G-4. Marking.

G-4a. Domestic Shipment. Unless otherwise specified, shipping containers shall be marked on one end with the name of the product, number and size of packages and the total quantity in container, the name and address of the contractor, the contract number and date of packing.

C.Q.D. No. 55B

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G-4b. Overseas Shipment. Unless otherwise specified, the watertight case described under G-3b(2) and the outer shipping case shall be marked with the following information:

Square Biscuit, Type "C"

24 - 2 pound packages

48 pounds net

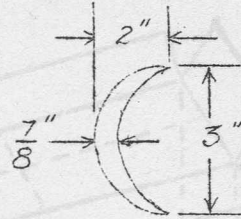
Contract No. _____

Date of Packing _____

Name of Contractor _____

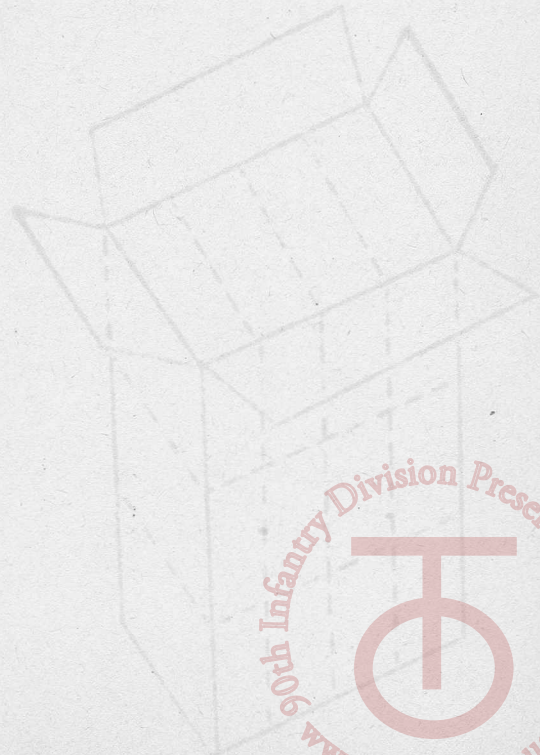
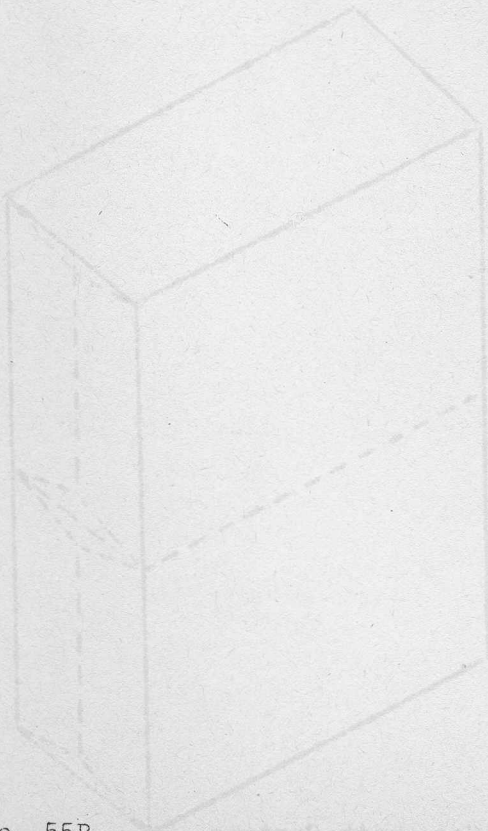
Address of Contractor _____

Cubic Displacement _____ cu. ft. Gross _____ lbs.



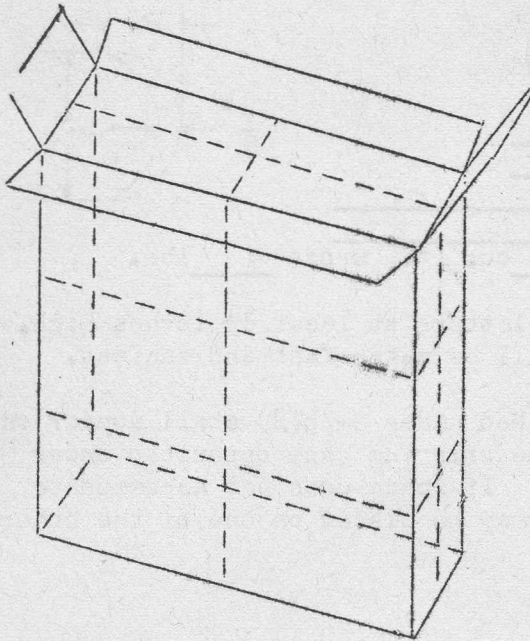
The name of the product shall be in bold letters at least $1\frac{1}{2}$ inches high. Ink used in marking shall take on fiber and shall be water-fast and sunfast.

The marking on the watertight case described under G-3b(2) shall appear on one major panel of the case. The marking on the shipping case described under G-3b(5) shall appear on both minor side panels. If space does not accommodate this marking, the identification of the packer may be placed on one of the other panels.

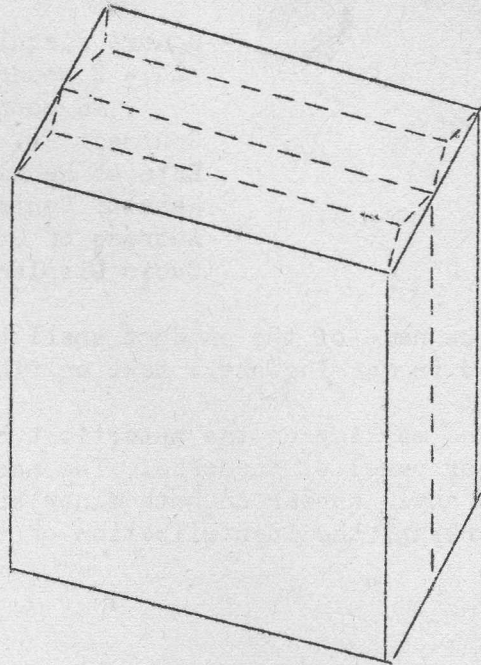


PACKING ARRANGEMENT

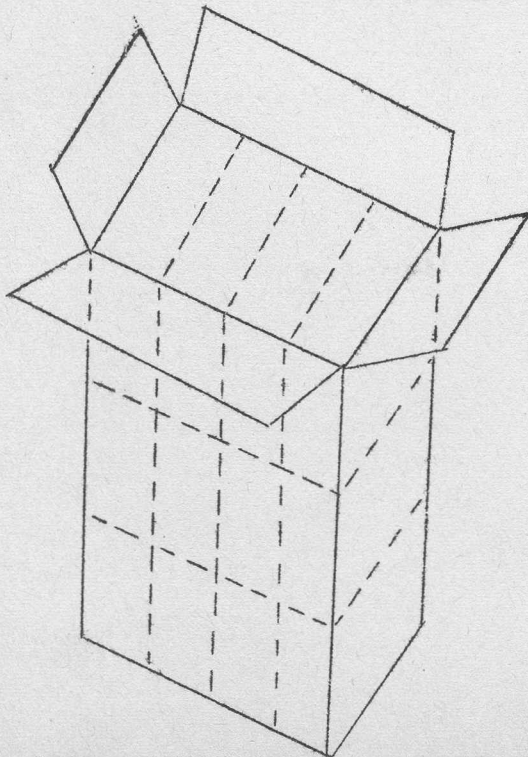
(Not to scale)



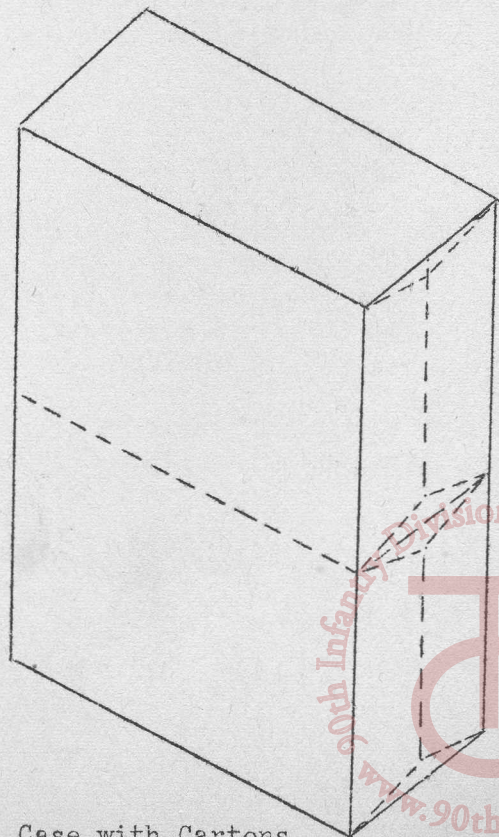
Carton with packages



Case with Cartons

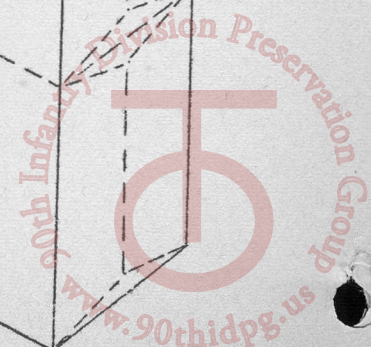


Carton with packages
(alternate form)



Case with Cartons
(alternate form)

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C.Q.D. Specifications 55B, 84A, and 95

ASPHALT PACK

Special Asphalt Pack for Square C Biscuits, 2 cartons, each 24 pounds net.

The following explains the requirements more fully.

FIGURE 1. Two-pound cracker shells, Square C Biscuits, 24-26 count, double wax wrapped, as per specification 55B, to be packed in a carton arranged as shown in Figure 1.

FIGURE 2. Pads, consisting of chip board about 0.024 inch thick placed on top and bottom of cracker shells, and .090 inch pads placed vertically between each tier as shown.

FIGURE 3. Carton made from 90 point board. Asphalt-impregnated outer liner laminated with asphalt to body stock. Top and bottom flaps of carton sealed with Micah 55A or other suitable adhesive. After sealing, all eight corners of carton dented by a hammer blow to flatten corners slightly.

FIGURE 4. Outer sleeve or collar, made from 60 point asphalt-impregnated outer liner, asphalt-laminated board, to fit snugly over flaps of carton, covering longitudinal sides of largest area, as in Figure 4. Outer sleeve to be about 1/16" longer than the carton. The manufacturer's joint on the sleeve is now asphalted with a spatula, (asphalt to consist of 85% asphalt and 15% amorphous wax), then covered with a strip of 60 pound plain kraft paper, about three inches in width. A wooden form or other suitable device is placed around the outer sleeve or collar, to hold sleeve or collar tightly against carton and carton stood on end. The four edges on each side of the sleeve and carton then asphalted with a spatula. The asphalt extending around the ends of the carton about 1-1/2" beyond the edges and covering the staples of the manufacturer's joint on the carton. After asphalt is applied, and allowing it to cool slightly, the asphalted end of the carton covered with a 60 point plain kraft paper, extending 2" over edges of sleeve or collar. After one end of carton is asphalted, the carton is reversed, to asphalt opposite end, which is then also covered with a sheet of 60 pound plain kraft paper.

FIGURE 5. B Flute 200 pound test regular slotted corrugated carton with taped joint, to hold asphalted carton. Flaps on this carton to be sealed by gummed adhesive tape.

FIGURE 6. Two corrugated cartons are placed in nailed wooden box. These cartons should fit snugly. The box is nailed and banded or wired, and marked according to specifications.

BISCUIT SHELLS
24# PACK

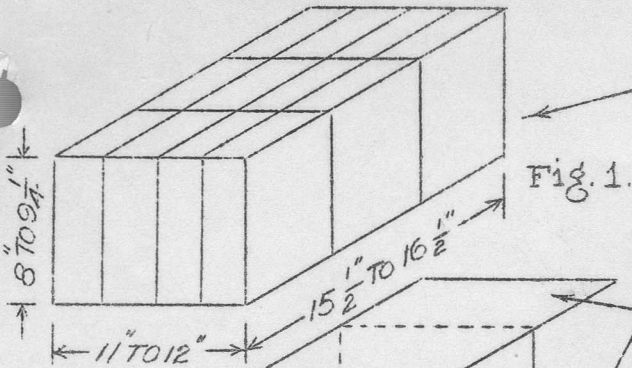


Fig. 1.

HORIZONTAL TOP & BOTTOM LINERS
TO BE OF CHIPBOARD, 0.024" THICK MIN.
2-REQD.

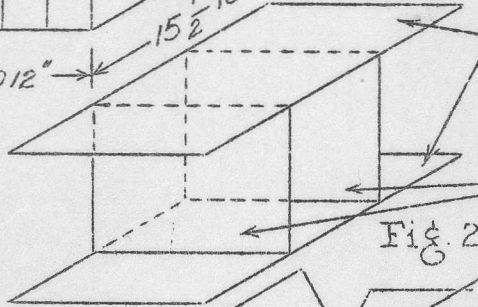


Fig. 2.

VERTICAL FILLERS
TO BE OF SOLID FIBER BOARD
0.090" MIN. THICK
2-REQD.

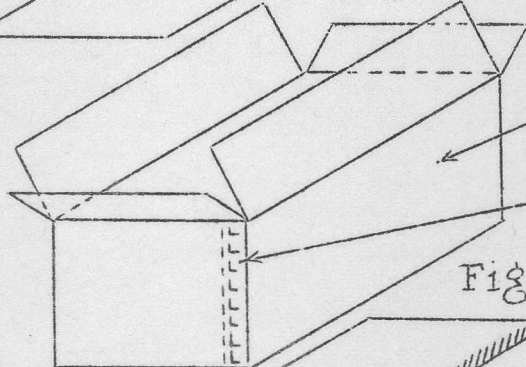


Fig. 3.

ASPHALT LAMINATED
SOLID FIBER BOARD CARTON
FIBER BOARD 0.090" THICK MIN.

BODY JOINT LAPPED 1/2" ON
INSIDE AND SECURED WITH
METAL FASTENERS.

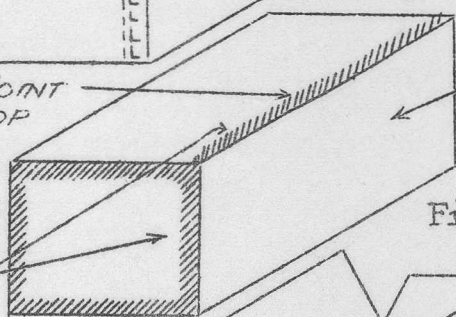


Fig. 4.

ASPHALT LAMINATED,
SOLID FIBER BOARD SLEEVE
0.060" THICK MIN.

MANUFACTURERS JOINT
WITH FLAP ON TOP

SEALED WITH
ASPHALT
REINFORCED WITH
60 LB PAPER OVER
ASPHALT

CORRUGATED
FIBER BOARD CARTON
B-FLUTE 200LB. TEST
BODY JOINT
BUTTED & TAPED.

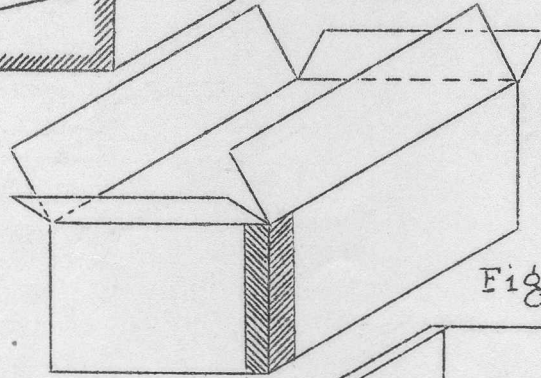


Fig. 5.

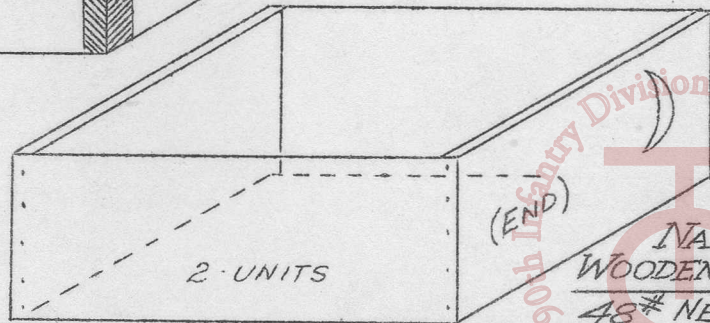


Fig. 6.

PROCEDURE ON ASPHALT PACK

FOR OVER-SEA EQUIPMENTS

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