SECTION C

C-1 ITEM DESCRIPTION

PCR-C-036, CAKES AND BROWNIES, PACKAGED IN A TRAY PACK CAN, SHELF STABLE, 14 January 2000

Types.

Type I - Cakes, shelf stable

Flavor 1 - Yellow cake with chocolate crumb topping
Flavor 2 - Chocolate cake with vanilla crumb topping
Flavor 3 - Marble cake with toffee crumb topping
Flavor 4 - Devil's fudge cake with coconut topping
Flavor 5 - Spice cake with vanilla crumb topping
Flavor 6 - Coffee cake with cinnamon crumb topping
Flavor 7 - Walnut tea cake

Type II - Brownies, shelf stable

Flavor 1 - Fudge brownie with chocolate icing

Each component is consumed by combat personnel under worldwide environmental extremes as part of an operational ration, and is a source of nutritional intake.

C-2 PERFORMANCE REQUIREMENTS

A. Product standard. A sample shall be subjected to first article or product demonstration model inspection as applicable, in accordance with the tests and inspections of Section E of this Performance-based Contract Requirements document.

B. Shelf life. The packaged product shall meet the minimum shelf life requirement of 36 months at 80°F.

C. Appearance.

(1) Type I.

a. Flavor 1 – The cake shall be pale, off-white. The topping shall be medium brown, irregular shaped crumbs.
b. Flavor 2 – The cake shall be dark brown with a reddish hue. The topping shall be light to medium tan, irregular shaped crumbs.
c. Flavor 3 – The cake shall be pale, off-white with swirls of dark brown. The topping shall be light tan, irregular shaped crumbs with toffee nuggets.
d. Flavor 4 – The cake shall be deep, chocolate brown. The topping shall be light to medium tan with coconut flakes.
e. Flavor 5 – The cake shall be medium beige with flecks of spices. The topping shall be light to medium tan, irregular shaped crumbs.
f. Flavor 6 – The cake shall be pale, off-white. The topping shall be dark tan, irregular shaped crumbs.
g. Flavor 7 – The cake shall have a golden to tan surface and very light tan crumb with small pieces of walnuts distributed throughout.

(2) Type II.

a. Flavor 1 – The brownie shall have a very dark brown surface and crumb. The chocolate icing shall be shiny, dark brown.

(3) General. The product shall be fully baked. The product shall be free from foreign material and shall show no evidence of excessive baking (materially darkened or scorched).

a. Type I - The topping shall be uniformly distributed on the top of the cake, except flavor 7 which has no topping. The cake height, excluding the topping, shall be 1-3/8 inches.

b. Type II - The chocolate icing is packaged separately and shall be spread evenly on the top surface of the brownie at the serving time. The brownie height, excluding the icing, shall be 1-1/4 inches.

D. Odor and flavor.

(1) Type I.

a. Flavor 1 – The cake shall have a sweet mild vanilla odor and flavor. The topping shall have a mild chocolate, slightly sweet odor and flavor.
b. Flavor 2 – The cake shall have a sweet, strong chocolate odor and flavor. The topping shall have a sweet, mild vanilla odor and flavor.
c. Flavor 3 - The cake shall have a sweet, mild vanilla-almond and mild sweet chocolate odor and flavor. The topping shall have a sweet toffee odor and flavor.
d. Flavor 4 – The cake shall have a medium sweet chocolate odor and flavor. The topping shall have a sweet, strong coconut odor and flavor.
e. Flavor 5 – The cake shall have a cinnamon and allspice odor and flavor. The topping shall have a slightly sweet, mild vanilla odor and flavor.
f. Flavor 6 – The cake shall have a sweet, mild vanilla odor and flavor. The topping shall have a sweet cinnamon odor and flavor.
g. Flavor 7 - The cake shall have a sweet, mild vanilla-walnut odor and flavor.

(2) Type II.

a. Flavor 1 – The brownie shall have a sweet, slightly bitter chocolate odor and flavor. The chocolate icing shall have a sweet chocolate odor and flavor.

(3) Foreign. The packaged food shall be free from foreign odors and flavors.

E. Texture.

(1) Type I.

a. Flavor 1, flavor 2, flavor 5, or flavor 6 – The cake shall have a dense, tender, moist, fine grain texture. The topping shall have moist, soft crumbs.
b. Flavor 3 – The cake shall have a dense, tender, moist, fine grain texture. The topping shall have moist, soft crumbs with toffee nuggets.
c. Flavor 4 – The cake shall have a very dense, tender, moist, fine grain texture. The topping shall have moist, soft crumbs with coconut flakes.
d. Flavor 7 - The cake shall have a dense, tender, moist, fine grain texture with crunchy walnut pieces.

(2) Type II.

a. Flavor 1 - The brownie shall have a dense, firm, moist texture. The icing shall be smooth and easily spreadable.

F. Net weight.

(1) Type I. The average net weight for flavors 1 – 6 shall be not less than 47.0 ounces. No individual tay pack can shall have a net weight less than 46.0 ounces. For type I, flavor 7, the average net weight shall be not less than43.0 ounces and no individual tray pack can of type I, flavor 7 shall have a net weight of less than 42.0 ounces.

(2) Type II. The average net weight of the flavor 1 brownie without icing shall be not less than 46.0 ounces. No individual tray pack can shall have a net weight of less than 45.0 ounces. The average net weight of the chocolate icing shall be not less than 10.0 ounces. The individual net weight of chocolate icing shall be not less than 7.0 ounces.

G. Palatability and overall appearance. The finished product shall be equal to or better than the approved product standard in palatability and overall appearance.

H. Analytical requirements. The following requirements of the products are specified below.

(1) Type I fat content.

a. The fat content for flavors 1,3,4,5, and 6 shall be not less than14.0 percent.
b. The fat content for flavors 2 and 7 shall be not less than 16.0 percent.

b. Moisture content. The moisture content for each cake flavor shall be not less than 20.0 percent.

(2) Type II.

a. Fat content. The fat content for flavor 1 brownie without icing, shall be not less than 12.0 percent.

(3) Type I moisture content. The moisture content for flavors 1 –6 shall be not less than 20.0 percent. The moisture content for flavor 7 shall be not less than 18.0 percent.
(4) Type II moisture content. The moisture content for type II, flavor I brownie without icing shall be not less than 14.0 percent.

I. (5) Type I and Type II water activity (Aw). The water activity of the type I and type II (without icing) packaged product shall be not greater than 0.890.

C-3 MISCELLANEOUS INFORMATION

THE FOLLOWING IS PROVIDED FOR INFORMATION ONLY TO PROVIDE THE BENEFIT OF PAST GOVERNMENT EXPERIENCE. THIS IS NOT A MANDATORY REQUIREMENT.

A. Cake ingredients/formulation. Ingredients and formulation percentages for cakes may be as follows:

Flavor	1	2	3		4	5	6
Ingredients			Choc	Yellow			
Sugar, white, Granulated	30.24	26.70	26.50	31.00	26.62	29.53	30.24
Flour, cake	22.42	17.75	17.70	22.48	15.84	22.29	22.42
Water	14.80	11.86	11.90	14.82	18.55	14.71	14.80
Eggs, whole, Frozen	13.91	19.78	19.78	13.98	15.32	13.83	13.91
Shortening, high Ratio	12.54	14.52	14.52	12.54	11.09	12.47	12.54
Glycerol	3.14	2.36	2.36	3.14	3.23	3.12	3.14
Starch, instant, Granular	1.00	-	-	-	1.00	1.00	1.00
Salt	0.85	0.80	0.80	0.84	0.73	0.85	0.85
Baking powder	0.68	0.41	0.42	0.68	0.38	0.68	0.68
Potassium sorbate	0.10	0.10	0.10	0.10	0.10	0.10	0.10
Guar gum	0.10	0.10	0.10	0.10	0.10	0.10	0.10
Xanthan gum	0.10	0.10	0.10	0.10	0.10	0.10	0.10
Flavoring,vanilla liquid	0.10	0.10	0.10	-	0.09	0.10	0.10
Flavoring, cream, Artificial	0.02	-	-	0.02	-	0.02	0.02
Cocoa	-	3.80	3.80	-	5.00	-	-
Maltodextrin	-	1.48	1.48	-	1.48	-	-
Bicarbonate of Soda	-	0.14	0.14	-	0.09	-	-
Flavoring,almond/ vanilla powder	-	-	0.20	0.20	-	-	-
Cinnamon	-	-	-	-	0.28	0.26	-
Allspice	-	-	-	-	-	0.28	-
Ginger	-	-	-	-	-	0.05	-

Sugar, light brown	-	-	-	-	-	0.51	-

B. Ingredients.:

(1) Ingredients for type I - flavor 7, walnut cake may be as follows: sugar, enriched wheat flour, eggs, emulsified shortening, water, glycerol, walnuts, maltodextrin, sour cream flavor, starch, salt, baking powder, butter flavor, vanilla flavor, xanthum gum, guar gum, potassium sorbate.

(2) Ingredients for type II - flavor 1, brownie may be as follows: sugar, corn syrup, oil, flour, egg white, whole eggs, cocoa, water, glycerol, milk, starch, salt, flavors, leavening, preservative, emulsifier, gum.

(3) Ingredients for type II - flavor 1, chocolate icing may be as follows: sugar, partially hydrogenated vegetable oil (soybean and cottonseed), water, high fructose corn syrup, corn syrup, cocoa (processed with alkali), mono and diglycerides, polysorbate60, salt, lecithin, potassium sorbate, natural and artificial flavor, citric acid.

C. Cake topping formulation.

Flavor	1	2	3	4	5	6
Ingredients						
Flour, wheat	46.94	47.84	36.84	25.24	47.84	46.14
Sugar, white, Granulated	24.28	24.88	23.88	22.48	24.88	24.88
Margarine	12.44	12.44	11.44	12.44	12.44	12.44
Shortening, Vegetable	10.94	12.44	10.44	12.44	12.44	12.44
Cocoa	3.00	-	-	-	-	0.80
Silica	2.00	2.00	2.00	2.00	2.00	2.00
Flavoring, vanilla powder	0.40	0.40	0.40	0.40	0.40	0.40
Toffee nuggets	-	-	15.00	-	-	-
Coconut flakes	-	-	-	25.00	-	-
Cinnamon	-	-	-	-	-	0.90

SECTION D

D-1 PACKAGING

A. Component. One pouch containing chocolate icing shall be provided for each tray pack can of type II, flavor 1 brownie. The following materials and processing requirements are for chocolate icing in a pouch prior to packaging with the type II, flavor 1 product:

(1) Icing pouch.

a. Material and construction. The preformed pouch shall be fabricated from material suitably formulated for food packaging and shall be in compliance with all applicable FDA and USDA regulations. The material shall show no evidence of delamination, degradation, or foreign odor when heat-sealed or fabricated into pouches. The material shall not impart an odor or flavor to the product after filling and sealing. The pouch shall be made by heat sealing three edges with 3/8 inch (-1/8 inch, +3/16 inch) wide seals. The heat seals shall be made in a manner that will assure hermetic seals. The side and bottom seals shall have an average seal strength of not less than 6 pounds per inch of width and no individual specimen shall have a seal strength of less than 5 pounds per inch of width when tested as specified in E-6,C.,(3),a. Alternatively, the filled and sealed pouch shall exhibit no rupture or seal separation greater than 1/16 inch or seal separation that reduces the manufacturer's seals to less than 1/16 inch when tested as specified in E-6,C.,(3),c. A tear notch shall be present in one or both side seals to facilitate opening.

b. Filling and sealing. Ten ounces of chocolate icing shall be filled into the pouch and the filled pouch shall be heat sealed. The closure seal shall be free of foldover wrinkles or entrapped matter that reduces the effective closure seal width to less than 1/16 inch. Seals shall be free of impression or design on the seal surface that would conceal or impair visual detection of seal defects. The average seal strength shall be not less than 6 pounds per inch of width and no individual specimen shall have a seal strength of less than 5 pounds per inch of width when tested as specified in E-6,C.,(3),b. Alternatively, the filled and sealed pouch shall exhibit no rupture or seal separation greater than 1/16 inch or seal separation that reduces the effective closure seal width to less than 1/16 inch when tested as specified in E-6,C.,(3),c. Residual headspace in the filled and sealed pouch shall be minimized to facilitate packing.

c. Pouch size. The filled and sealed pouch shall be a size that fits within the void created between the tray lid (after sealing and cooling) and the fiberboard pad added during packing.

B. Preservation. Product shall be filled into the tray pack can conforming to MIL-C-44340, Can, Tray Pack. The practice of reconditioning tray pack cans by buffing with an abrasive substance shall not be permitted. Verification testing and inspection of tray pack can conformance to the requirements shall be by the testing and inspections of Section 4 of MIL-C-44340 and the Quality Assurance Provisions of Section E of This Performance-based Contract Requirements document.

C. Can condition. The filled, sealed, and processed tray pack can shall conform to the United States Standards for Condition of Food Containers.

D. Can closure. The filled, sealed, and processed tray pack can shall be securely closed.

E. Can vacuum. The filled, sealed, and processed tray pack can shall show evidence of vacuum.

D-2 LABELING

A. Tray pack can body. One side of each tray pack can body shall be clearly printed or stamped, in a manner that does not damage the tray, with permanent black ink or any other contrasting color, which is free of carcinogenic elements. Paper labels are not permitted. Each tray pack can shall be labeled with the following:

(1) Product name (e.g. Yellow cake with chocolate crumb topping) Commonly used abbreviations may be used when authorized by the inspection agency.

(2) Tray pack can code includes: 1/

Lot number
Production shift number

1/ Shall be code marked as follows: The lot number shall be expressed as a four digit Julian code. The first digit shall indicate the year of production and the next three digits shall indicate the day of the year (Example, 30 August 1999 would be coded as 9242). The Julian code shall represent the day the product was packaged into the tray and processed. Sub-lotting (when used) shall be represented by an alpha character immediately following the four digit Julian code. Following the four digit Julian code and the alpha character (when used), the other required code information shall be printed in the sequence as listed above. The Julian code shall be preceded by three capital letters which represent the packer's name.

B. Tray pack can lid. The tray pack can lid shall be clearly printed or stamped, in a manner that does not damage the lid, with permanent black ink or any other contrasting color, which is free of carcinogenic elements. As an alternate lid labeling method, a pre-printed self-adhering 0.002 inch thick clear polyester label printed with indelible black or other contrasting color ink may be used.

(1) Lid labeling shall include:
Product name (e.g. Yellow cake with chocolate crumb topping)
Ingredients

Net weight
Name and address of manufacturer

(2) Type I – The cake lid labeling shall also show the following statements:

YIELD: Serves 18 portions; cut 3 rows by 6 rows.

(3) Type II – The brownie lid labeling shall also show the following statements:

CHOCOLATE ICING: Chocolate icing is packaged in a separate pouch. Spread icing evenly on the brownie surface using a spatula or knife, prior to cutting the brownie.
YIELD: Serves 18 portions; cut 3 rows by 6 rows.

C. Icing pouch. Each pouch shall be clearly printed or stamped, in a manner that does not damage the pouch. Permanent black ink or other contrasting color which is free of carcinogenic elements or ingredients shall be used. The information may be located anywhere on the pouch (in one complete print). The label shall contain the following information:

(1) Product name
Ingredients
Date 1/
Net weight
Name and address of manufacturer

1/ Each pouch shall have the date of pack noted by using a four digit code beginning with the final digit of the current year followed by the three digit Julian day code. For example, 30 August 1999 would be coded as 9242. The Julian day code shall represent the day the product was packaged into the pouch.

(2) Pouch labeling shall also show the following statements:

Knead pouch to soften chocolate icing.

Squeeze icing onto surface of brownie and spread evenly using a spatula or knife.

D-3 PACKING

A. Packing for shipment to ration assembler.

(1) Type I. Four filled, sealed, and processed cans of product shall be packed in a fiberboard box conforming to style RSC-L, grade 275 of ASTM D 5118, Standard Practice for Fabrication of Fiberboard Shipping Boxes. The cans shall be packed flat, with the first two cans placed with the lids together and the next two cans with the lids together. The inside of each box shall be provided with a box liner and five fiberboard pads. The pads shall be placed between the cans and on the top and bottom of the stacked cans. The pad dimensions shall be not less 1/8-inch of the full length and width dimensions of the box and shall be fabricated of class domestic, grade 175 fiberboard. The box shall be closed in accordance with ASTM D 1974, Standard Practice for Methods of Closing, Sealing, and Reinforcing Fiberboard Shipping Containers.

(2) Type II. The type II brownies shall be packed as above. In addition, one filled and sealed icing pouch shall be provided for each tray pack can of type II brownies. After the tray pack can has cooled, the icing pouch shall be placed between tray can lid and the fiberboard pad.

D-4 UNITIZATION

A. Unit loads. Unit loads shall be as specified in DSCP FORM 3507, Loads, Unit: Preparation of Semiperishable Subsistence Items.

D-5 MARKING

A. Shipping containers and unit loads. Marking of shipping containers and unit loads shall be as specified in DPSC FORM 3556, Marking Instructions for Shipping Cases, Sacks and Palletized/Containerized Loads of Perishable and Semiperishable Subsistence.

D-6 MISCELLANEOUS INFORMATION

THE FOLLOWING INFORMATION IS PROVIDED FOR INFORMATION ONLY TO PROVIDE PAST GOVERNMENT EXPERIENCE. THIS IS NOT A MANDATORY REQUIREMENT.

A. Icing pouch material. It has been found that a pouch with minimum inside dimensions of 8-3/4 inches in length by 6-5/8 inches in width and fabricated from a 3-ply laminate constructed of, from inside to outside, 0.002 inch thick linear low density polyethylene, extrusion coated or laminated to 0.00035 inch thick aluminum foil, and extrusion coated or laminated to 0.0006 inch thick biaxially oriented nylon, meets the performance requirements of this document.

SECTION E INSPECTION AND ACCEPTANCE

The following quality assurance criteria, utilizing ANSI/ASQC Z1.4-1993, Sampling Procedures and Tables for Inspection by Attributes, are required. When required, the manufacturer shall be required to provide the certificate(s) of conformance to the appropriate inspection activity. Certificate(s) of conformance not provided shall be cause for rejection of the lot.

A. Definitions.

(1) Critical defect. A critical defect is a defect that judgment and experience indicate would result in hazardous or unsafe conditions for individuals using, maintaining, or depending on the item; or a defect that judgment and experience indicate is likely to prevent the performance of the major end item, i.e., the consumption of the ration.

(2) Major defect. A major defect is a defect, other than critical, that is likely to result in failure, or to reduce materially the usability of the unit of product for its intended purpose.

(3) Minor defect. A minor defect is a defect that is not likely to reduce materially the usability of the unit of product for its intended purpose, or is a departure from established standards having little bearing on the effective use or operation of the unit.

B. Classification of inspections. The inspection requirements specified herein are classified as follows:

(1) Product standard inspection. The first article or product demonstration model shall be inspected in accordance with the provisions of this Performance-based Contract Requirements document and evaluated for overall appearance and palatability. Any failure to conform to the performance requirements or any appearance or palatability failure shall be cause for rejection of the lot.

(2) Conformance inspection. Conformance inspection shall include the examinations and the methods of inspection cited in this section.

E-5 QUALITY ASSURANCE PROVISIONS (PRODUCT)

A. Product examination. The finished product shall be examined for compliance with the performance requirements specified in Section C of this Performance-based Contract Requirements document utilizing the double sampling plans indicated in ANSI/ASQC Z1.4 - 1993. The lot size shall be expressed in tray pack cans. The sample unit shall be the

contents of one tray pack can. The inspection level shall be S-3 and the AQL, expressed in terms of defects per hundred units, shall be 4.0 for major defects and 6.5 for minor defects. Defects and defect classifications are listed in Table I below.

TABLE I. Product defects 1/ 2/ 3/

Category		Defect
Major	Minor	
		General
101		Evidence of excessive baking (materially darkened or scorched).
102		Gummy center or soggy areas or raw portions.
	201	Cake not the flavor as identified on the label.
	202	Topping not uniformly distributed over top of cake.
	203	Product height, excluding topping, less than 1 inch. 4/
	204	Evidence of compression streaks.
		Net weight
	205	Type I, applicable to cake flavors – 1 6 the net weight of an individual tray pack can is less than 46.0 ounces. Type I flavor 7, the net weight of an individual tray pack can is less than 42.0 ounces. 5/
	206	Type II – the net weight of an individual tray pack can is less than 45.0 ounces. 6/
	207	The net weight of an individual pouch of icing is less than 7.0 ounces. 7/
		Type I, Flavor 1
103		Cake odor or flavor not sweet with mild vanilla or topping odor or flavor not slightly sweet, mild chocolate.
	208	Cake not a pale off-white color or topping not medium brown irregular shaped crumbs.
	209	Cake not dense, tender, moist, fine grain or topping not moist, soft crumbs.
		Type I, Flavor 2
104		Cake odor or flavor not sweet, strong chocolate or topping odor or flavor not sweet, mild vanilla.
	210	Cake not a dark brown color with a reddish hue or topping not light to

		medium tan irregular shaped crumbs.
	211	Cake not dense, tender, moist, fine grain or topping not moist, soft crumbs.
		Type I, Flavor 3
105		Cake odor or flavor not sweet, mild vanilla-almond or mild sweet chocolate or topping odor or flavor not sweet toffee.
	212	Cake not a pale off-white color with swirls of dark brown or topping not light tan irregular shaped crumbs with toffee nuggets.
	213	Cake not dense, tender, moist, fine grain or topping not moist, soft crumbs with toffee nuggets.

TABLE I. Product defects 1/ 2/ 3/

Category		Defect
Major	Minor	
		Type I, Flavor 4
106		Cake odor or flavor not medium sweet chocolate or topping odor or flavor not sweet, strong coconut.
	214	Cake not a deep chocolate brown color or topping not light to medium tan with coconut flakes.
	215	Cake not very dense, fine grain or topping not moist soft crumbs with coconut flakes.
		Type I, Flavor 5
107		Cake odor or flavor not cinnamon and allspice or topping odor or flavor not slightly sweet, mild vanilla.
	216	Cake not a medium beige color with flecks of spices or topping not light to medium tan irregular shaped crumbs.
	217	Cake not dense, tender, moist, fine grain or topping not moist, soft crumbs.
		Type I, Flavor 6
108		Cake odor or flavor not sweet, mild vanilla or topping odor or flavor not sweet cinnamon.
	218	Cake not a pale off-white color or topping not dark tan irregular shaped crumbs.
	219	Cake not dense, tender, moist, fine grain or topping not moist, soft crumbs.
		Type I, Flavor 7
109		Cake odor or flavor not sweet, mild vanilla-walnut.
	220	Cake surface not a golden to tan color or cake crumb not a very light tan color with small pieces of walnuts distributed throughout.
	221	Cake not dense, tender, moist, fine grain with crunchy walnut pieces.

		Type II, Flavor 1
110		Brownie odor or flavor not sweet, slightly bitter chocolate or icing odor or flavor not sweet chocolate.
	222	Brownie surface or crumb not a very dark brown color or icing not shiny, dark brown.
	223	Brownie not dense, firm, moist or icing not smooth or easily spreadable.

1/ Presence of any foreign material such as, but not limited to dirt, insect parts, hair, glass, wood, or metal, or foreign odors or flavors such as, but not limited to burnt, scorched, rancid, sour, stale, musty, or moldy shall be cause for rejection of the lot.

2/ Finished product not equal to or better than the approved product standard in palatability and overall appearance shall be cause for rejection of the lot.

3/ As applicable, bisect cake or brownie vertically in the center with a sharp knife to inspect for defects.

4/ As applicable, cake height or brownie height shall be measured at the lowest point along the vertical cut.
5/ Cake flavors 1 6, sample average net weight less than 47.0 ounces shall be cause for rejection of the lot. Cake flavor 7, sample average net weight less than 43.0 ounces shall be cause for rejection of the lot.

6/ Sample average net weight less than 46.0 ounces shall be cause for rejection of the lot.
7/. Sample average net weight less than 10.0 ounces shall be cause for rejection of the lot.

B. Methods of Inspection

(1) Shelf life. The contractor shall provide a certificate of conformance that the product has a 3 year shelf life when stored at 80°F. Government verification may include storage for 6 months at 100°F or 36 months at 80°F. Upon completion of either storage period, the product will be subjected to a sensory evaluation panel for appearance and palatability and must receive an overall score of 5 or higher based on a 9 point hedonic scale to be considered acceptable.

(2) Net weight.

a. Type I and Type II. The net weight of the filled and sealed tray can shall be determined by weighing each sample unit on a suitable scale tared with a representative empty tray can and lid. Results shall be reported to the nearest 1.0 ounce.

b. Chocolate Icing. The net weight of the filled and sealed icing pouch shall be determined by weighing each sample unit on a suitable scale tared with a representative empty pouch. Results shall be reported to the nearest 0.5 ounce.

(3) Analytical.

a. Fat and moisture. The sample to be analyzed shall be a composite of three filled and sealed tray pack cans which have been selected at random from the lot. For type II – brownies, the sample to be analyzed shall not include the chocolate icing. The composited sample shall be prepared and analyzed in accordance with the following methods of the Official Methods of Analysis of AOAC International:

Test	Method Number
Fat	922.06
Moisture	925.45

Test results shall be reported to the nearest 0.1 percent. Any nonconforming result shall be cause for rejection of the lot.

(b) Water activity testing. Eight filled and sealed tray pack cans of product shall be selected at random from the lot regardless of lot size. Water activity (Aw) shall be determined not less than 4 days but not more than 14 days after baking to allow moisture equilibration in the product. The product shall be individually tested for water activity in accordance with the Official Methods of Analysis of the AOAC method 978.18, using an electric hygrometer system self-temperature controlled at 25°C or an equivalent instrument. The sample unit shall be a specimen from the center of the cake or the brownie, as applicable. The results of each Aw determination shall be reported to the nearest 0.001. Any nonconforming result shall be cause for rejection of the lot. For type II – brownies, the samples to be tested shall not include the chocolate icing.

E-6 QUALITY ASSURANCE PROVISIONS (PACKAGING AND PACKING MATERIALS, TRAY PACK CAN)

A. Packaging.

(1) Can condition examination. Examination of filled and sealed tray pack cans shall be in accordance with the United States Standards for Condition of Food. In addition, scratches, scuffs, or abrasions that occur on the outside coating as a result of the filling, sealing, and processing of the tray pack cans shall not be scored as a defect.

(2) Can closure examination. Can closures shall be examined visually and by teardowns in accordance with the can manufacturer's requirement and 21 CFR, Part 113, Subpart D, or 9 CFR, Part 318, Subpart G, as applicable. Any nonconformance based on observation of can seam teardowns or on record of can seam teardowns shall be classified as a major defect and shall be cause for rejection of any involved product.

(3) Vacuum examination. Cans shall be allowed to cool to 75°F ± 5°F, held for at least 24 hours after sealing, and then examined for vacuum retention. To examine, lay a straight edge in the center of the lid along the length of the tray pack. Both ends of the straight edge shall touch the lid at the inside edge of the double seam. There shall be a visible gap between the straight edge and the lid for the entire distance of the label panel. Using a shorter straight edge, the same procedure shall be used across the width, in the center of the tray pack can. One measurement shall be made when examining a ribbed lid; lay the straight edge between the two center ribs along the length of the can. The inspection lot shall include only tray packs produced in a single shift on a single sealing machine. The sample size shall be 50 cans. Any nonconformance shall be classified as a major defect and shall be cause for rejection of the lot.

B. Labeling.

(1) Can body labeling examination. The tray pack can body shall be examined for the labeling defects listed in table II below. The lot size shall be expressed in tray pack cans. The sample unit shall be one tray pack can. The inspection level shall be I and the AQL, expressed in terms of defects per hundred units, shall be 0.65 for major defects and 4.0 for minor defects.

TABLE II. Can body labeling defects

Category		Defect
Major	Minor	
101		Tray pack can code or product name missing, incorrect, or illegible.
102		Not printed or stamped as specified.
103		Printing or stamping causes can body damage.
	201	Labeling ink not a contrasting color.

(2) Can lid labeling examination. The tray pack can shall be examined for the defects listed in table III below. The lot size shall be expressed in tray pack cans. The sample unit shall be one tray pack can. The inspection level shall be I and the AQL,

expressed in terms of defects per hundred units, shall be 0.65 for major defects and 4.0 for minor defects.

TABLE III. Can lid labeling defects

Category		Defect
Major	Minor	
101		Label torn or scratched so as to obliterate any of the markings.
102		Labeling missing, incorrect or illegible.
	201	Air bubbles under label.
	202	Label not properly adhered to can (label raised or peeled back from edges or corners).

(3) Label adhesive examination. When self-adhering labels are used, the adhesive shall be tested in accordance with ASTM D 3330. In lieu of testing, a certificate of conformance (COC) shall be provided.

C. Component. Inspection for icing pouch shall be as follows:

(1) Unfilled preformed pouch certification. A certificate of conformance may be accepted as evidence that unfilled pouches conform to the requirements specified in D-1,A.,(1),a. and b. When deemed necessary by the USDA, testing of the unfilled preformed pouches for internal pressure resistance shall be as specified in E-6,C.,(3),c.

(2) Filled and sealed pouch examination. The filled and sealed pouches shall be examined for the defects listed in table IV. The lot size shall be expressed in pouches. The sample unit shall be one pouch. The inspection level shall be I and the acceptable quality level (AQL), expressed in terms of defects per hundred units, shall be 0.65 for major defects and 2.5 for minor defects.

TABLE IV. Filled and sealed icing pouch defects 1/

Category		Defect
Major	Minor	
101		Tear, hole, or open seal.
102		Seal width less than 1/16 inch. 2/
103		Presence of delamination. 3/
104		Unclean pouch. 4/
105		Pouch has foreign odor.
106		Any impression or design on the heat seal surfaces which conceals or impairs visual detection of seal defects. 5/
	201	Label smudges, is missing, incorrect, or illegible.
	202	Tear notch missing or does not facilitate opening.
	203	Seal width less than 1/8 inch but greater than 1/16 inch.
	204	Presence of delamination. 3/

1/ Any evidence of rodent or insect infestation shall be cause for rejection of the lot.

2/ The effective closure seal is defined as any uncontaminated, fusion bonded, continuous path, minimum 1/16 inch wide, from side seal to side seal that produces a hermetically sealed pouch.

3/ Delamination defect classification:

Major - Delamination of the outer ply in the pouch seal area that can be propagated to expose aluminum foil at the food product edge of the pouch after manual flexing of the delaminated area. To flex, the delaminated area shall be held between the thumb and forefinger of each hand with both thumbs and forefingers touching each other. The delaminated area shall then be rapidly flexed 10 times by rotating both hands in alternating clockwise-counterclockwise directions. Care shall be exercised when flexing delaminated areas near the tear notches to avoid tearing the pouch material. After flexing, the separated outer ply shall be grasped between thumb and forefinger and gently lifted toward the food product edge of the seal or if the separated area is too small to be held between thumb and forefinger, a number two stylus shall be inserted into the delaminated area and a gentle lifting force applied against the outer ply. If separation of the outer ply can be made to extend to the product edge of the seal with no discernible resistance to the gentle lifting, the delamination shall be classified as a major defect. Additionally, spot delamination of the outer ply in the body of the pouch that is able to be propagated beyond its initial borders is also a major defect. To determine if the laminated area is a defect, use the following procedure: Mark the outside edges of the delaminated area using a bold permanent marking pen. Open the pouch and remove the contents. Cut the pouch transversely not closer than 1/4 inch (±1/16 inch) from the delaminated area. The pouch shall be flexed in the area in question using the procedure described above. Any propagation of the delaminated area, as evidenced by the delaminated area exceeding the limits of the outlined borders, shall be classified as a major defect.

Minor - Minor delamination of the outer ply in the pouch seal area is acceptable and shall not be classified as a minor defect unless it extends to within 1/16 inch of the food product edge of the seal. All other minor outer ply delamination in the pouch seal area or isolated spots of delamination in the body of the pouch that do not propagate when flexed as described above shall be classified as minor defects.

4/ Outer packaging shall be free from foreign matter which is unwholesome, has the potential to cause pouch damage (for example, glass, metal filings) or generally detracts from the clean appearance of the pouch. The following examples shall not be classified as defects for unclean:

a. Foreign matter which presents no health hazard or potential pouch damage and which can be readily removed by gently shaking the package or by gently brushing the pouch with a clean dry cloth.

b. Dried product which affects less than 1/8 of the total surface area of one pouch face (localized and aggregate).

c. Water spots.

5/ If doubt exists as to whether or not the sealing equipment leaves an impression or design on the closure seal surface that could conceal or impair visual detection of seal defects, samples shall be furnished to the contracting officer for a determination as to acceptability.

(3) Seal testing. The pouch seals shall be tested for seal strength as required in a., b., or c., as applicable.

a. Unfilled preformed pouch seal testing. The seals of the unfilled preformed pouch shall be tested for seal strength in accordance with ASTM F 88-Seal Strength of Flexible Barrier Materials. The lot shall be expressed in pouches. The sample size shall be the number of pouches indicated by inspection level S-1. Three adjacent specimens shall be cut from each of the three sealed sides of each pouch in the sample. The average seal strength of any side shall be calculated by averaging the three specimens cut from that side. Any average seal strength of less than 6 pounds per inch of width or any test specimen with a seal strength of less than 5 pounds per inch of width shall be cause rejection of the lot.

b. Pouch closure seal testing. The closure seals of the pouches shall be tested for seal strength in accordance ASTM F 88. The lot size shall be expressed in pouches. The sample size shall be the number of pouches indicated by inspection level S-

1. For the closure seal on preformed pouches, three adjacent specimens shall be cut from the closure seal of each pouch in the sample. The average seal strength shall be calculated by averaging the three specimens cut from the closure. Any average seal strength of less than 6 pounds per inch of width or any test specimen with a seal strength of less than 5 pounds per inch of width shall be cause for rejection of the lot.

c. Internal pressure test. The internal pressure resistance shall be determined by pressurizing the pouches while they are restrained between two rigid plates. The sample size shall be the number of pouches indicated by inspection level S-1. If a three seal tester (one that pressurizes the pouch through an open end) is used, the closure seal shall be cut off for testing the side and bottom seals of the pouch. For testing the closure seal, the bottom seal shall be cut off. The pouches shall be emptied prior to testing. If a four-seal tester (designed to pressurize filled pouches by use of a hypodermic needle through the pouch wall) is used, all four seals can be tested simultaneously. The distance between rigid restraining plates on the four-seal tester shall be equal to the thickness of the product (+1/16 inch). Pressure shall be applied at the approximate uniform rate of 1 pound per square inch gage (psig) per second until 14 psig pressure is reached. The 14 psig pressure shall be held constant for 30 seconds and then released. The pouches shall then be examined for separation or yield of the heat seals. Any rupture of the pouch or evidence of seal separation greater than 1/16 inch in the pouch manufacturer's seal shall be considered a test failure. Any seal separation that reduces the effective closure seal width to less than 1/16 inch (see table IV, footnote 2/) shall be considered a test failure and shall be cause for rejection of the lot.

D. Packing.

(1) Shipping container and marking examination. The filled and sealed shipping containers shall be examined for the defects listed in table V below. The lot size shall be expressed in shipping containers. The sample unit shall be one shipping container fully packed. The inspection level shall be S-3 and the AQL, expressed in terms of defects per hundred units, shall be 4.0 for major defects and 10.0 for total defects.

TABLE V. Shipping container defects

Category		Defect
Major	Minor	
101		National stock number, item description, contract number, name and address of producer, or date of pack missing, incorrect, or illegible.
102		Container not closed properly.
103		Interior packing with fiberboard liner or pads not as specified.
104		Dimensions of pads not as specified.
105		Icing pouch missing (type II, flavor 1 product only)
	201	Other required markings missing, incorrect, or illegible.
	202	Arrangement or number of tray pack cans not as specified.

E. Unitization.

(1) Unit load examination. The unit load shall be examined in accordance with the requirements of DSCP Form 3507, Loads, Unit: Preparation of Semiperishable Subsistence Items. Any nonconformance shall be classified as a major defect and shall be cause for rejection of the lot.

SECTION J REFERENCE DOCUMENTS

DPSC/DSCP FORMS

DPSC FORM 3556	Marking Instructions for Shipping Cases, Sacks and Palletized/Containerized Loads of Perishable and Semiperishable Subsistence
DSCP FORM 3507	Loads, Unit: Preparation of Semiperishable Subsistence Items

MILITARY SPECIFICATIONS

MIL-C-44340	Can, Tray Pack

GOVERNMENT PUBLICATIONS

Federal Food, Drug, and Cosmetic Act and regulations promulgated thereunder (21 CFR Parts 1-199)
U.S. Standards for Condition of Food Containers

NON-GOVERNMENTAL STANDARDS

AMERICAN SOCIETY FOR QUALITY (ASQ)

ANSI/ASQCZ1.4-1993 Sampling Procedures and Tables for Inspection by Attributes

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

D 1974	Standard Practice for Methods of Closing, Sealing, and Reinforcing Fiberboard Shipping Containers
D 3330	Peel Adhesion of Pressure-Sensitive Tape
D 5118	Standard Practice for Fabrication of Fiberboard Shipping Boxes
F 88	Seal Strength of Flexible Barrier Materials

AOAC INTERNATIONAL Official Methods of Analysis of the AOAC International

AMSSB-RCF-FN (A.Richards/5037) 29 March 2000

TO: DSCP-HSL (Woloszyn/4435)

Subject: (DDC-00-060); Document Change, PCR-C-036, Cakes and Brownies, Packaged in a Tray Pack Can, Shelf Stable.

1. For procurement of this Tray Pack Can Performance-based Contract Requirement Item, the U.S. Army Soldier and Biological Chemical Command, Soldier Systems Center requests that DSCP implement the change cited below.

2. The following change is provided to the subject document for all current, pending, and future procurements until the document is formally amended or revised:

D-2, B, (1), line 6, Delete: “Code (same as tray code)”.

DONALD A. HAMLIN
Team Leader
Food Engineering Services Team
Combat Feeding Program

Document Changes

A. Richards

CF:

Beward
Byrd
Charya
Costanza
Hamlin
Hoffman
Malason
Richards
Salerno
Trottier
Valvano
Wagner

AMSSB-RCF-FN (Valvano/4259) 6 April 2000

TO: DSCP-HSL (Woloszyn/4435) DDC-00-063

Subject: Document Change, PCR-C-036 Cakes and Brownies, Packaged in a Tray Pack Can, Shelf Stable

Ref: Telephone conversation between C. Henry, DSCP, and A. Konrady, SBCCOM, sampling size for subject document, Sterling Foods production

1. Based on ref conversation and review of subject document, the U.S. Army Soldier and Biological Chemical Command, Soldier Systems Center requests that DSCP implement the change cited below. The following change is provided to the subject document for all current, pending, and future procurements until the document is formally amended or revised:

(a) Paragraph E-5,A,line 6 for major defects: delete “1.5” and insert “4.0”.

DONALD A. HAMLIN
Team Leader
Food Engineering Services Team

Combat Feeding Program

ES REQUIRED

R Valvano

CF:
Beward
Byrd
Hamlin
Hoffman
Harrington
Malason
Richards
Valvano
Wagner
Woloszyn

AMSSB-RCF-FN (A.Richards/5037) 18 July 2000

TO: DSCP-HSL (Woloszyn/4435)

Subject: (DDC00-097); Document Changes, PCR-C-036, Cakes and Brownies, Packaged in a Tray Pack Can, Shelf Stable.

1. For procurement of this Tray Pack Can Performance-based Contract Requirement Item, the U.S. Army Soldier and Biological Chemical Command, Soldier Systems Center requests that DSCP implement the changes cited below.

2. The following changes are provided to the subject document for all current, pending, and future procurements until the document is formally amended or revised:

C-2, F, (1), Delete and substitute: (1) Type I. The average net weight for flavors 1 – 6 shall be not less than 47.0 ounces. No individual tray pack can shall have a net weight less than 46.0 ounces. For Type I flavor 7 the average net weight shall be not less than 43.0 ounces and no individual tray pack can of Type I flavor 7 shall have a net weight less than 42.0 ounces.

C-2, F, (2), line 2, Delete “54” Insert “46”.

C-2, F, (2), line 3, Delete “53” Insert “45”.

C-2, F, (2), line 3, Delete “The net weight of the chocolate icing shall be not less than 7.0 ounces.” Insert “The average net weight of the chocolate icing shall be not less than 10.0 ounces. The individual net weight of chocolate icing shall be not less than 7.0 ounces.”

C-2, H & I, Delete and substitute:

H. Analytical requirements.

(1) Type I fat content.

a. The fat content for flavors 1, 3, 4, 5, and 6 shall be not less than 14.0 percent.

b. The fat content for flavors 2 and 7 shall be not less than 16.0 percent.

(2) Type II.

a. Fat content. The fat content for Type II flavor 1 brownie without icing, shall be not less than 12.0 percent.

(3) Type I moisture content. The moisture content for flavors 1 - 6 shall be not less than 20.0 percent. The moisture content for flavor 7 shall be not less than 18.0 percent.

(4) Type II moisture content. The moisture content for Type II flavor 1 brownie without icing shall be not less than 14.0 percent.

(5) Type I and Type II water activity(Aw). The water activity of the type I and Type II (without icing) packaged product shall be not greater than 0.890.

Subject: (DDC00-097); Document Changes, PCR-C-036, Cakes and Brownies, Packaged in a Tray Pack Can, Shelf Stable. 17 July 2000

D-1, A, (1), b, line 1, Delete “Seven” Insert “Ten”.

D-2, A, line 3, Delete “or ingredients”.

D-2, A (2), line 2, Delete “Three letter code identifying the establishment”.

D-2, B, line 3, Delete “or ingredients”.

D-2, C, line 4, Delete “, except the closure seal area”.

Section E, B, (1) line 5, after “rejection”, Insert ‘of the lot”.

E-5, A, Table I, Minor 205, after "applicable to", Delete "all".

E-5, A, Table I, Minor 205, after "flavors" Insert "1 - 6".

E-5, A, Table I, Minor 205, after "ounces." Insert “Type 1, cake flavor 7, the net weight of an individual tray pack can is less than 42.0 ounces.".

E-5, A, Table I, Minor 206, Delete “53.0” Insert “45.0”.

E-5, A, Table I, Minor 207, after “ounces.” Insert 7/

E-5, A, Table I, 5/, Delete footnote 5/ entirely and insert, "5/ Cake flavors 1 - 6, sample average net weight less than 47.0 ounces shall be cause for rejection of the lot. Cake flavor 7, sample average net weight of less than 43.0 ounces shall be cause for rejection of the lot.".

E-5, A, Table I, 6/, Delete “54.0” Insert “46.0”.

E-5, A, Table I, Insert “7/ Sample average net weight less than 10.0 ounces shall be cause for rejection of the lot.”

E-5, B, (3) and (4), Delete and substitute:

(3) Analytical.

a. Fat and moisture. The sample to be analyzed shall be a composite of three filled and sealed tray pack cans which have been selected at random from the lot. For type II – brownies, the sample to be analyzed shall not include the chocolate icing. The composited sample shall be prepared and analyzed in accordance with the following methods of the Official Methods of Analysis of AOAC International:

Test	Method Number
Fat	922.06
Moisture	925.45

Test results shall be reported to the nearest 0.1 percent. Any nonconforming result shall be cause for rejection of the lot.

Subject: (DDC00-097); Document Changes, PCR-C-036, Cakes and Brownies, Packaged in a Tray Pack Can, Shelf Stable. 17 July 2000

b. Water activity. Eight filled and sealed tray pack cans of product shall be selected at random from the lot regardless of lot size. Water activity (Aw) shall be determined not less than 4 days but not more than 14 days after baking to allow moisture equilibration in the product. The product shall be individually tested for water activity in accordance with the Official Methods of Analysis of the AOAC method 978.18, using an electric hygrometer system self-temperature controlled at 25°C or an equivalent instrument. The sample unit shall be a specimen from the center of the cake or the brownie, as applicable. The results of each Aw determination shall be reported to the nearest 0.001. Any nonconforming result shall be cause for rejection of the lot. For type II – brownies, the samples to be tested shall not include the chocolate icing.

3. POC for this action is Mr. Allen Richards, X5037.

DONALD A. HAMLIN
Team Leader
Food Engineering Services Team
Combat Feeding Program

Document Changes

A. Richards

CF:
Beward
Byrd
Charya
Costanza
Hamlin
Harrington
Hoffman
Malason
Norton
Richards
Salerno
Valvano
Wagner