

**ACR-C-014**  
**18 January 2013**  
**W/Change 05 19 December 2014 ES15-012 (DSCP-SS-15-00275)**  
**Superseding**  
**ACR-M-001A**  
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**SECTION C**

**C-1 ITEM DESCRIPTION**

**ACR-C-014, MEAL COLD WEATHER/FOOD PACKET, LONG RANGE PATROL, COMBINED RATION, ASSEMBLY REQUIREMENTS**

The Meal, Cold Weather/Food Packet, Long Range Patrol provides an operational ration for two separate operational scenarios. The Meal, Cold Weather (MCW) is intended for cold weather feeding, it will not freeze and supplies extra drink mixes for countering dehydration during cold weather activities. It can be issued at three per day for complete cold weather ration. The Food Packet, Long Range Patrol (LRP) is a restricted calorie ration meant for special operations, where re-supply is not available and weight and volume are critical factors. It is issued at one per soldier per day for up to ten days. The combined product assembly consists of twelve meals or packets per shipping container.

**C-2 ASSEMBLY REQUIREMENTS**

A. Components. The components shall be as specified in table I.

TABLE I. Components

Component	Reference
<u>Entrées</u>	
Beef Stew	<a href="#"><u>PCR-B-015</u></a>
Beef Stroganoff with Noodles	<a href="#"><u>PCR-B-016</u></a>
Breakfast Skillet	<a href="#"><u>PCR-B-053</u></a>
Chicken and Rice	<a href="#"><u>PCR-C-025</u></a>
Chicken, Spicy, Oriental, with Rice	<a href="#"><u>PCR-C-026</u></a>
Chili Macaroni with Beef	<a href="#"><u>PCR-C-073</u></a>
Egg, Scrambled	<a href="#"><u>PCR-E-001</u></a>
Scrambled Eggs with Bacon Pieces	Type II
Scrambled Eggs with Cheese, Western-Style	Type III
Rice and Chicken, Mexican Style	<a href="#"><u>PCR-R-011</u></a>
Rotini with Cheese Sauce, Chicken, Tomatoes and Asparagus	<a href="#"><u>PCR-R-015</u></a>
Seafood Chowder	<a href="#"><u>PCR-S-017</u></a>
Spaghetti with Meat Sauce	<a href="#"><u>PCR-S-008</u></a>
Turkey Tetrazzini	<a href="#"><u>PCR-T-002</u></a>

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TABLE I. Components - Continued

Component	Reference
<u>Starches</u>	
Cereals, Rolled Oats, Instant,	<a href="#">A-A-20090F</a> , Type III
Maple and Brown Sugar or Strawberries and Cream,	Flavors C or F
Regular	Style 1
Cornbread	<a href="#">PCR-C-075</a>
Granola, with Milk and Blueberries	<a href="#">PCR-G-003A</a> , Type I
Soup, Noodle, Ramen, Instant, Fried Noodle	<a href="#">A-A-20297B</a> , Type I
Cup/Bowl	Style A
<del>Beef or</del> Chicken,	Flavors 1 or 2
Reduced Sodium	Class b
Flat Interlocking Closure Pouch	Design B
Tortillas, Plain	<a href="#">PCR-T-008A</a> , Flavor 1
<u>Snacks and Candy</u>	
Cakes, Brownies, Muffin Tops and Filled Cakes	<a href="#">PCR-C-007F</a>
Pound cakes:	Type I,
Vanilla, <i>Trans</i> Fat Free,	Flavors 1, Style 2
Lemon Poppy Seed, <i>Trans</i> Fat Free,	Flavor 6, Style 2
Spice, <i>Trans</i> Fat Free, or	Flavor 7, Style 2
Marble, <i>Trans</i> Fat Free	Flavor 11, Style 2
Brownie: Fudge Brownie with Chocolate Drops	Type II, Flavor I,
<i>Trans</i> Fat Free	Style 2
Muffin Top, Maple, <i>Trans</i> Fat Free	Type III, Flavor 2, Style 2
Candy and Chocolate Confections	<a href="#">A-A-20177E</a> , Package A or B
Pan Coated Candy	Type VI
Disks, Milk Chocolate, Plain	Style A, Flavor 1
Oval/Round, Milk Chocolate with Peanuts	Style B, Flavor 1
Cheese Spread, Cheddar, Fortified, Plain, with	<a href="#">PCR-C-039</a> , Type I, II, or III
Jalapeno Peppers, or with Bacon	
Cookies, Individual Serving Package, Regular	<a href="#">A-A-20295D</a>
Crisp, Sugar Cookies, Patriotic	Class 1, Type I, Bake Type a,
	Style D, Shape (b)
Fig Bar, Soft and Chewy	Class 1, Type I, Bake Type b,
	Style P
Crackers, Fortified, Plain or Vegetable	<a href="#">PCR-C-037A</a> , Type I or II

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TABLE I. Components - Continued

Component	Reference
Dessert Bar,	<a href="#">PCR-D-004</a>
Mocha	Flavor I
Peanut Butter	Flavor II
Chocolate Banana Nut	Flavor III
First Strike™ Bar	<a href="#">PCR-F-001</a>
Chocolate, Regular	Flavor I, Style A
Cran-Raspberry, Regular	Flavor III, Style A
Fruits, Infused and Dried	<a href="#">A-A-20299B</a>
Cranberries, Sliced, Plain, No Sulfur Dioxide (SO <sub>2</sub> )	Type VII, Style B, Flavor 1, Class (1)
Not Fortified	Fortification a
Whole Raisins, Not Fortified	Type IX, Fortification a
Nut and Fruit Mix	<a href="#">PCR-N-003A</a>
Nuts and Raisin Mix with Pan Coated	Type II
Chocolate Disks	
Nuts, Shelled, Roasted	<a href="#">A-A-20164D</a>
Almonds (Unblanched), Flavored (Smoked)	Type IX, Style A
Nut Butters and Nut Spreads	<a href="#">A-A-20328B</a> , Style II
Peanut Spread, Regular, Smooth, Stabilized,	
Chocolate, Fortified	Class A, Texture 1, Type a
	Flavor 2, Fortification 2
Snack Foods	<a href="#">A-A-20195D</a>
Pretzels	Type II
Filled Pretzels, Cheddar Cheese	Style F, Flavors 1, 2
Corn Kernels	Type VI
Toasted Corn Kernels, Plain, Salted	Flavor 1
Filled Bakery Item, Filled French Toast	<a href="#">MIL-DTL-32221B</a> , Type I
Toaster Pastries, Shelf Stable, Regular, Frosted,	<a href="#">A-A-20211C</a> , Type I, Style B,
Brown Sugar Cinnamon, Without Sprinkles	Flavor 3, Frosting Option (B)
Enriched Wheat Flour, Not Fortified,	Grain Composition (1) Fortification b
Rectangular, Single Serving Packet	Shape i, Servings (a)

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TABLE I. Components - Continued

Component	Reference
<u>Beverages</u>	
Beverage, Powder, Carbohydrate Grape, Lemon-Lime, Orange, Tropical Punch Fortified with Ascorbic Acid, Vitamin D, Fiber and Enhanced with Maltodextrin Flat Interlocking Closure Pouch	<a href="#">PCR-B-055</a> Flavors 2, 3, 4, or 5 Formulation c  Design B
Beverage Base, Powdered Sweetened with Non-Nutritive Sweetener Lap or Fin Seal Pouch Orange, Fortified with Ascorbic Acid and Calcium	<a href="#">A-A-20098E</a> Type III Design D Flavor 1, Formulation h
Chocolate Protein Drink Powder	<a href="#">PCR-C-082</a>
Cocoa Beverage Powder, Fortified Flat Interlocking Closure Pouch	<a href="#">PCR-C-041</a> Design B
Cocoa Beverage Powder, Sugar Sweetened, Without Marshmallows, Chocolate Hazelnut Flat Interlocking Closure Pouch	<a href="#">A-A-20189C</a> , Type I, Style B Flavor F Design B
Dairyshake Powder, Fortified with Calcium and Vitamin D, Vanilla, Chocolate, or Strawberry <i>Trans</i> Fat Free Flat Interlocking Closure Pouch	<a href="#">PCR-D-002B</a> Flavors I, II, or III Type II Design B
Drink Mixes, Coffee (Unflavored and Flavored), Flavored Instant Cappuccino, Regular, French Vanilla, Mocha or Irish Cream Flat Interlocking Closure Pouch	<a href="#">A-A-20336B</a> , Type V Style A Flavors 1, 2 or 4 Design B
<u>Other</u>	
Fork, Knife and Spoon, Picnic, Plastic, High Impact, Spoon, MRE, 7-inch, Brown	<a href="#">A-A-3109B</a> , Type IV Item 13

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B. Accessory components. Accessory components shall be as specified in table II.

TABLE II. Accessory Components

Component	Reference	Packet
Coffee, Instant, Freeze Dried, Regular	<a href="#">A-A-20184C</a> , Type III, Style A	All
Creamer, Non-Dairy, Dry, Regular, Original	<a href="#">A-A-20043C</a> , Style 1, Flavor A	All
Sugar, White, Granulated	<a href="#">A-A-20135D</a> , Type I, Style A, 1/7 oz.	All
Chewing Gum, Tablet, Regular Without Caffeine, With Xylitol as Primary Sweetener Peppermint or Cinnamon <u>1/</u>	<a href="#">A-A-20175E</a> , Type I, Size B Style (1), Flavors a or c, Class 3	All
Hot Sauce, Extra Hot 4x	<a href="#">A-A-20097E</a> , Type II 1/8 fl. oz pouch	All <u>2/</u>
Salt, Iodized	<a href="#">Sodium Chloride Monograph</a> , 4 grams	LRP
Hand Cleaner (towelette), Unscented, Water Based	<a href="#">A-A-461B</a> , Type II	All
Toilet Tissue, Institutional, Folded, One Ply, Perforated 2 Packets 1 Packet	<a href="#">A-A-59594A</a> , Style II, Type A Class 1, Sheet Size b	LRP MCW
Matches, Paper, Safety	<a href="#">A-A-59489A</a> , Type I, Class B	All

1/ Flavors shall be procured in equal quantities and assembled in a uniform distribution.

2/ Alternatively, hot sauce may be packed loose in the meal bag.

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C. Menu contents. The menu contents shall be as specified in table III.

TABLE III. Menu Contents

<b>Menu #1</b>	<b>Menu #2</b>
Beef Stroganoff with Noodles	Chicken, Spicy, Oriental with Rice
Fig Bar	Nut and Raisin Mix, type II
Dessert Bar, Peanut Butter	Dessert Bar, Mocha
Dairyshake <u>1/</u>	Beverage Powder, Carbohydrate, Vit D and
Beverage Powder, Carbohydrate, Vit D and	Fiber <u>1/</u>
Fiber <u>1/</u>	Dried Fruit, Cranberries
Accessory Pack	Accessory Pack
Spoon	Spoon
<b>Menu #3</b>	<b>Menu #4</b>
Chili Macaroni with Beef	Turkey Tetrazzini
Crackers <u>1/</u>	First Strike™ Bar, Chocolate
Cheese Spread <u>1/</u>	Crackers <u>1/</u>
Toasted Corn Kernels	Peanut Spread, Chocolate
Pan Coated Milk Chocolate	Beverage Powder, Carbohydrate, Vit D and
Oval/Round, Peanut	Fiber <u>1/</u>
Cappuccino <u>1/</u>	Cappuccino <u>1/</u>
Accessory Pack	Accessory Pack
Spoon	Spoon
<b>Menu #5</b>	<b>Menu #6</b>
Chicken and Rice	Seafood Chowder
Filled Pretzels, Cheddar Cheese	Ramen Noodle Soup <u>1/</u>
Filled Bakery, Filled French Toast	Fudge Brownie with Chocolate Drops
First Strike™ Bar, Cran-Raspberry	<i>Trans</i> Fat Free
Cocoa, Chocolate Hazelnut	Crackers <u>1/</u>
Accessory Pack	Beverage Powder, Carbohydrate, Vit D and
Spoon	Fiber <u>1/</u>
	Accessory Pack
	Spoon

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TABLE III. Menu Contents - Continued

<p style="text-align: center;"><b>Menu #7</b></p> <p>Beef Stew  Pound Cake <u>1/</u>  Toasted Corn Kernels  Nuts, Almonds, Smoked  Beverage Powder, Carbohydrate, Vit D and  Fiber <u>1/</u>  Accessory Pack  Spoon</p>	<p style="text-align: center;"><b>Menu #8</b></p> <p>Spaghetti with Meat Sauce  Ramen Noodle Soup <u>1/</u>  Pan Coated Milk Chocolate Disks, Plain  Dairyshake <u>1/</u>  Beverage Base, Sugar Free Orange with  Vitamin C and Calcium  Whole Raisins  Accessory Pack  Spoon</p>
<p style="text-align: center;"><b>Menu #9</b></p> <p>Rice and Chicken, Mexican Style  Dessert Bar, Chocolate Banana Nut  Cornbread  Dried Fruit, Cranberries  Beverage Powder, Carbohydrate, Vit D and  Fiber <u>1/</u>  Accessory Pack  Spoon</p>	<p style="text-align: center;"><b>Menu #10</b></p> <p>Scrambled Eggs with Cheese,  Western-style  Granola with Milk and Blueberries  Toaster Pastry, Brown Sugar Cinnamon  Muffin Top, Maple  Filled Pretzels, Cheddar Cheese  Beverage Base, Sugar Free Orange with  Vitamin C and Calcium  Cocoa, Chocolate Hazelnut  Accessory Pack  Spoon</p>
<p style="text-align: center;"><b>Menu #11</b></p> <p>Scrambled Eggs with Bacon Pieces  Cereals, Rolled Oats, Instant <u>1/</u>  Nut and Fruit Mix, type II  Fig Bar  Beverage Powder, Carbohydrate, Vit D and  Fiber <u>1/</u>  Cocoa Beverage Powder, Fortified  Accessory Pack  Spoon</p>	<p style="text-align: center;"><b>Menu #12</b></p> <p>Breakfast Skillet  Cereals, Rolled Oats, Instant <u>1/</u>  Patriotic Sugar Cookies  Tortillas  Cheese Spread <u>1/</u>  Chocolate Protein Drink  Accessory Pack  Spoon</p>

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1/ Flavors shall be procured in equal quantities and assembled in uniform distribution in accordance with table IV.

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TABLE IV. Menu Distribution

Item	Menu	Flavor
Cereals, Rolled Oats, Instant	11, 12	Maple and Brown Sugar, Strawberries and Cream (Regular)
Beverages, Powdered Carbohydrate	1, 2, 4, 6, 7, 9, 11	Grape, Lemon-Lime, Orange, Tropical Punch
Cakes, Pound	7	Vanilla, Lemon Poppy, Spice, Marble
Cheese Spread	3, 12	Plain, with Jalapeno Peppers, with Bacon
Crackers	3, 4, 6	Plain, Vegetable
Dairyshake Powder, <i>Trans</i> Fat Free	1, 8	Vanilla, Chocolate, Strawberry
Drink Mixes, Coffee (Unflavored and Flavored), Flavored Instant Cappuccino, Regular	3, 4	French Vanilla, Mocha, Irish Cream
<del>Soup, Noodle, Ramen Instant</del>	<del>6, 8</del>	<del>Beef Flavor, Chicken Flavor</del>

**SECTION D**

**D-1 PACKAGING**

A. Components.

(1) Accessory packet. The accessory packet shall be a preformed packet or a form-fill-seal packet. Dimensions shall be sufficient to contain all components. Seals shall be a minimum 1/8 inch wide. A tear nick, notch or serrations shall be provided to facilitate opening the filled and sealed accessory packet. The average seal strength of the packet seals shall be not less than 3.5 pounds per inch of width and no individual specimen shall have a seal strength of less than 3.0 pounds per inch of width. As an alternative to the seal strength requirement, the filled and sealed packet shall exhibit no rupture or seal separation greater than 1/16 inch or seal separation that reduces the effective seal width to less than 1/16 inch when tested for internal pressure resistance. The packet shall be made from polymeric films or film combinations with adequate strength and thickness to contain and protect the components. The water vapor transmission rate (WVTR) of the film shall not exceed 6.2 gm/m<sup>2</sup>/24hrs at 90%RH and 100°F when tested in accordance with ASTM F1249, Standard Test Method for Water Vapor Transmission Rate Through Plastic Film and Sheeting Using a Modulated Infrared Sensor, ASTM E96/E96M, Standard Test Methods for Water Vapor

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Transmission of Materials or Method 3030 of MIL-STD-3010, Test Procedures for Packaging Materials. The material shall show no evidence of delamination, degradation, or foreign odor when heat sealed or fabricated into packets. The exterior color of the packet shall be clear or tan.

(2) Meal bag. The meal bag shall be made from food grade, low density polyethylene (LDPE) tubing or tubing made from a blend of food grade, low density polyethylene (LDPE) and linear low density polyethylene (LLDPE). Additives may be used in order to improve sealability, peelability, tear resistance or other attributes provided all additives are food grade and are certified by the FDA as approved for food contact. Polyethylene shall have a minimum thickness of 0.010 inch. Inside dimensions of the bag shall not exceed 8-1/8 by 12-1/2 inches. The color of the bag for LRP shall conform to number 20219, 30219, 30227, 30279, 30313, 30324 or 30450 of FED-STD-595, Colors Used in Government Procurement. The color of the meal bag for MCW shall conform to number 37778 or 37886 of FED-STD-595. One seal shall be a minimum 1/8 inch wide, continuous, peelable seal that forms a hermetic closure. The seal shall be designed with an inverted “V” shaped peel indicator along the seal path. There shall be a minimum of 1/2 inch between the apex of the “V” and the end of the bag. The seal strength of the peelable seal shall be not less than 4 pounds per inch of width and shall be not greater than 10 pounds per inch of width. Alternative bag construction, bag materials, and material thicknesses may be used provided that the alternative method can be demonstrated to meet or exceed the requirements of this document, military abuse testing and controlled pest testing. Samples may be submitted to the contracting officer to be qualified on a case by case basis.

(3) Time-temperature indicator (TTI) label. The TTI label shall be a 3/4 inch square, bull’s-eye type, pressure sensitive adhesive label. The TTI label shall have an activation energy ( $E_a$ ) of 24–30 kcal/mole, be protected from ultraviolet radiation and have a shelf life of 1100 days at 80°F as pivot point.

**B. Assembly.**

(1) Accessory packet assembly. One of each applicable component as described in table II shall be inserted in a packet. For a preformed packet, contents shall be inserted in the pouch and the pouch shall be closed with a heat seal not less than 1/8 inch wide. For a form-fill-seal packet, components shall be placed in the body and the cover applied by heat sealing with a seal not less than 1/8 inch wide. The closure seal shall be free of foldover wrinkles or entrapped matter that reduces the effective seal width to less than 1/16 inch. The sealed accessory packets shall not show any evidence of material degradation or delamination from packet fabrication, forming, or heat sealing. The average seal strength of the packet seals

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shall be not less than 3.5 pounds per inch of width and no individual specimen shall have a seal strength of less than 3.0 pounds per inch of width. As an alternative to the seal strength requirement, the filled and sealed packet 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 for internal pressure resistance.

(2) Meal assembly. Each applicable component for each meal as described in table III shall be inserted in a meal bag. The bag shall be closed with a heat seal not less than 1/8 inch wide. The closure seal shall have an average seal strength of not less than 4 pounds per inch of width with no individual specimen test result less than 3 pounds per inch of width. The sealed meal bag shall not show any evidence of foreign odor.

**D-2 LABELING**

A. Accessory packet. Accessory packet, if not of clear material, shall be printed on one side in dark contrasting colored permanent ink:

ACCESSORY PACKET

B. Meal bag. Each meal bag shall be printed on at least one face in dark contrasting colored permanent ink with the information contained in Figures 1 or 2, as applicable.

**D-3 PACKING**

A. Packing. Twelve meals shall be packed in a fiberboard box. The fiberboard box shall conform to RSC-L of ASTM D5118/D5118M, Standard Practice for Fabrication of Fiberboard Shipping Boxes and grade V2s of ASTM D4727/D4727M, Standard Specification for Corrugated and Solid Fiberboard Sheet Stock (Container Grade) and Cut Shapes, except the requirements for dry burst strength shall be minimum 425 psi, the requirement for wet burst strength shall be minimum 250 psi and the laminated board thickness shall be 0.069 inches. [The U.S. Army Research, Development & Engineering Command; Natick Soldier Research, Development, and Engineering Center found that solid fiberboard shipping container material consisting of two outer facings of 90 pound wet strength linerboard and an inner ply of 69 pound linerboard meets the performance criteria of this specification.] The box liner shall be a full inside width box liner fabricated from grade W5c fiberboard in accordance with ASTM D5118/D5118M, except the terminal ends of the liner shall overlap a minimum of 2 inches and no fastening of the overlap is required. The box shall be closed in accordance with closure method 2A1 of ASTM D1974/D1974M,

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Standard Practice for Methods of Closing, Sealing, and Reinforcing Fiberboard Boxes; except the gap between the outer flaps shall be not more the 3/4 inch wide. Each box shall be reinforced with two girthwise nonmetallic straps. The inside dimensions of the box shall be 16-11/16 inches in length, 9-1/8 inches in width and 10-1/4 inches in depth.

**D-4 UNITIZATION**

A. Unit loads. Forty-eight boxes shall be arranged in unit loads in accordance with type I, Class C of DLA Troop Support Form 3507, Loads, Unit: Preparation of Semiperishable Subsistence Items. At least two boxes in each tier shall be oriented to display the TTI label.

**D-5 MARKING**

A. Shipping containers. Shipping containers shall be marked in accordance with DLA Troop Support Form 3556, Marking Instructions for Boxes, Sacks, and Unit Loads of Perishable and Semiperishable Subsistence and as specified in the contract with the following exceptions:

(1) Identification markings normally placed on an end of the shipping container shall read from top to bottom, left to right, when the shipping container is rotated from its upright position onto its side for palletization. The major flaps of the shipping container closure immediately to the right of the marked end of the shipping container shall bear the following marking:

Contract data and other required markings  
Date of pack  
Lot number  
U.S. GOVERNMENT PROPERTY – COMMERCIAL RESALE IS UNLAWFUL

Time Temperature Indicator label shall be centrally positioned on the panel. A minimum distance (quiet zone) of 1/4 inch from the nearest identification marking shall be maintained.

(2) One side panel of shipping container shall be marked “MEAL, COLD WEATHER” or “FOOD PACKET, LONG RANGE PATROL” in letters not less than 1-1/4 inches high.

B. Unit loads. Unit loads shall be marked in accordance with DLA Troop Support Form 3556.

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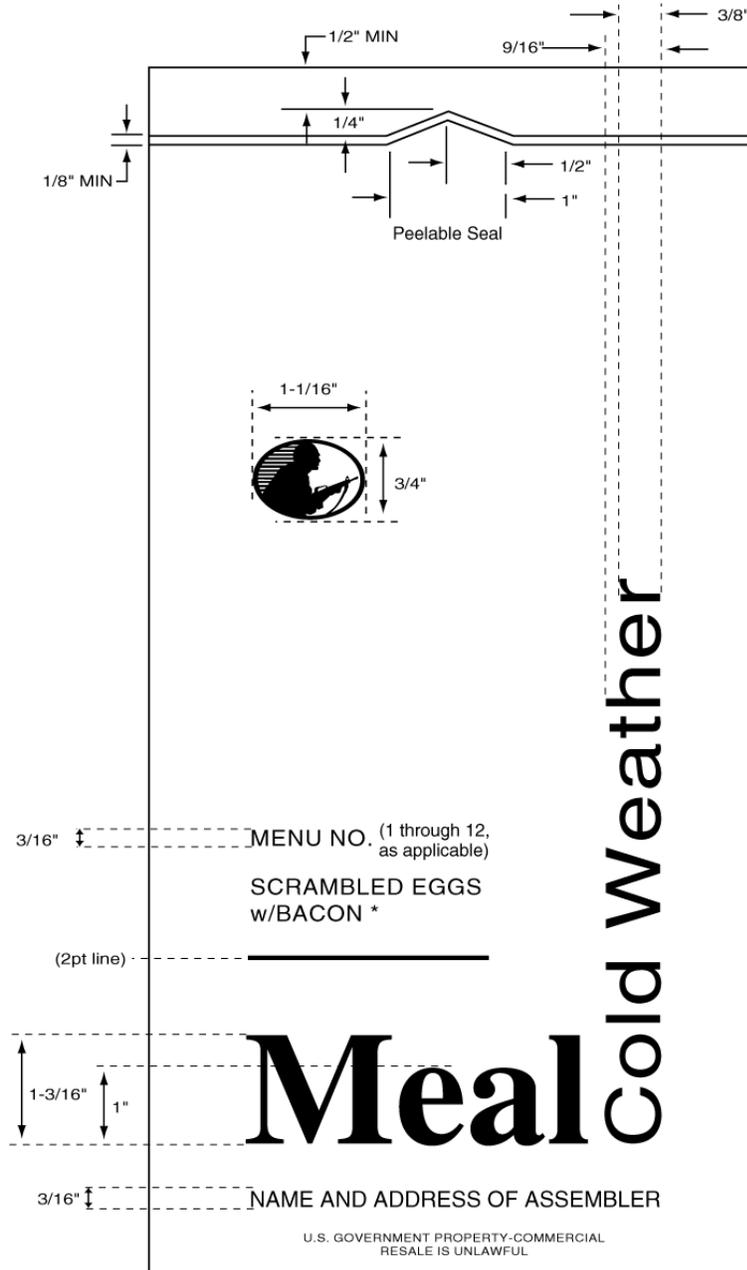


FIGURE 1. GRAPHIC DESIGN AND LETTERING HEIGHT \*\*

\* Name of applicable entree component as listed in table I component column

\*\* A tolerance of plus or minus  $1/16$  inch is applicable to letter height requirements

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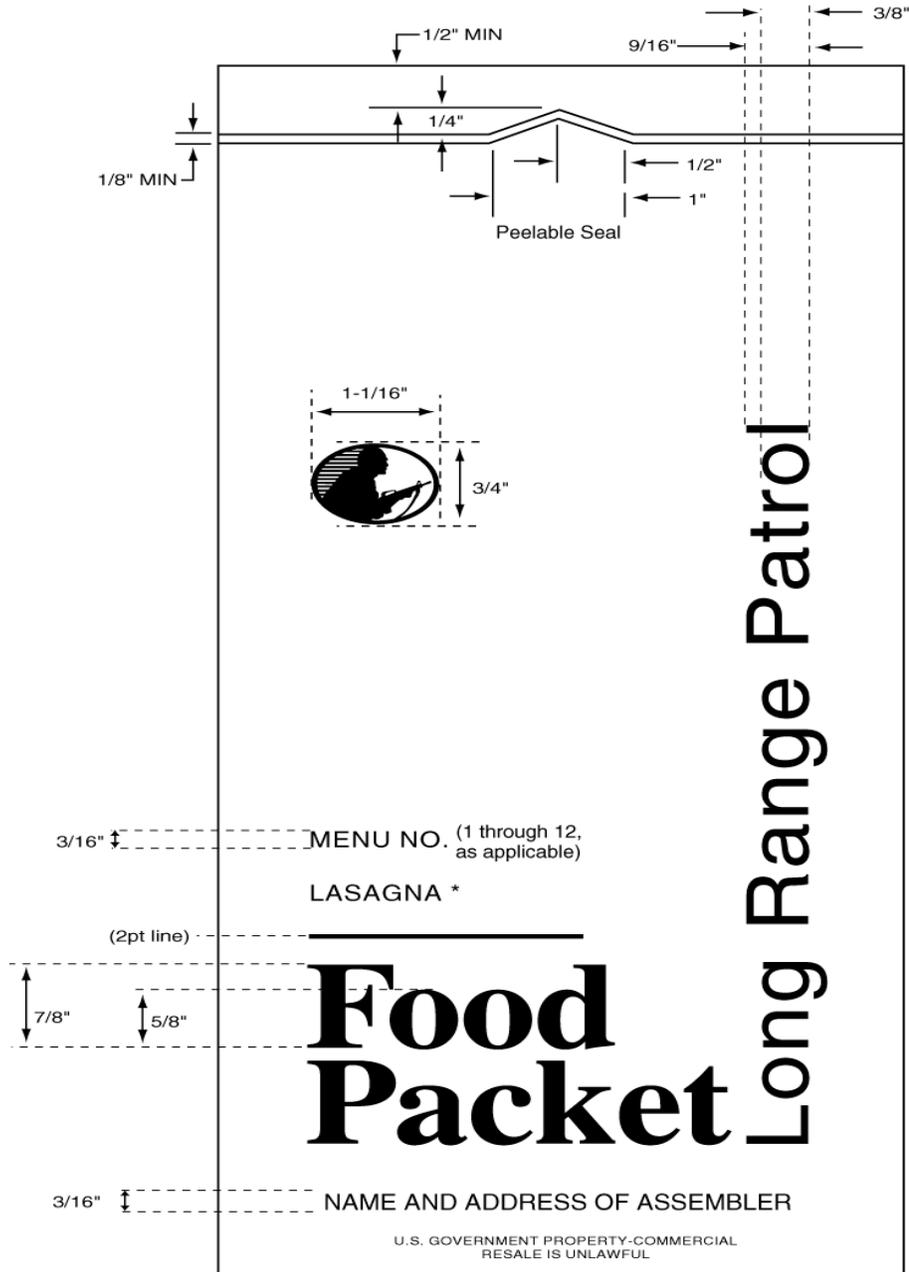


FIGURE 2. GRAPHIC DESIGN AND LETTERING HEIGHT \*\*

\* Name of applicable entree component as listed in table I component column

\*\* A tolerance of plus or minus 1/16 inch is applicable to letter height requirements

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**SECTION E INSPECTION AND ACCEPTANCE**

The following quality assurance criteria, utilizing ANSI/ASQ Z1.4, Sampling Procedures and Tables for Inspection by Attributes, are required. Unless otherwise specified, single sampling plans indicated in ANSI/ASQ Z1.4 will be utilized. When required, the manufacturer shall provide the Certificate(s) of Conformance (CoC's) to the appropriate inspection activity. CoC's 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. Conformance inspection. Conformance inspection shall include the examinations/tests and the methods of inspection cited in this section.

C. Packaging examination.

(1) Pouch material certification. A CoC may be accepted as evidence that the characteristics listed below conform to the specified requirements.

Requirement	Requirement paragraph	Test procedure
Thickness of meal bag	D-1,A(2)	ASTM D2103 <u>1/</u>
Color of meal bag and accessory packet	D-1,A(2) and D-1,A(1)	Visual evaluation and FED-STD-595, as applicable <u>2/</u>
Water vapor transmission rate	D-1,A(1)	ASTM F1249, <u>3/</u> , ASTM E96/E96M, <u>4/</u> or Method 3030 of

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MIL-STD-3010 5/

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- 1/ Standard Specification for Polyethylene Film and Sheeting
  - 2/ Colors Used in Government Procurement
  - 3/ Standard Test Method for Water Vapor Transmission Rate Through Plastic Film and Sheeting Using a Modulated Infrared Sensor
  - 4/ Standard Test Methods for Water Vapor Transmission of Materials
  - 5/ Test Procedures for Packaging Materials

(2) Accessory packet examination. The filled and sealed packets shall be examined for the defects listed in table V. The lot size shall be expressed in packets. The sample unit shall be one packet. The inspection level shall be S-4 and the acceptable quality level (AQL), expressed in terms of defects per hundred units, shall be 2.5 for major defects and 4.0 for minor defects.

TABLE V. Accessory packet defects

Category		Defect
<u>Major</u>	<u>Minor</u>	
101		Not clean. <u>1/</u>
	201	Seal width less than 1/16 inch. <u>2/</u>
	202	Tear nick or notch or serrations missing or does not facilitate opening.
	203	Tear or hole or open seal.
	204	Evidence of delamination, when applicable.
	205	Labeling, when applicable, missing or incorrect or illegible.
	206	Missing or unserviceable component.
	207	Foreign odor.
	208	Pouch not sealed on four sides.

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

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

b. Localized dried product which affects less than 1/8 of the total surface area of one pouch face, or an aggregate of scattered dried product which affects less than 1/4 of the total surface area of one pouch face.

2/ An effective seal is defined as any uncontaminated, fusion bonded, continuous path, minimum 1/16 inch wide, producing a hermetically sealed pouch.

(3) Assembled meal bag examination. The filled and sealed meal bags shall be externally inspected and then opened and the components inspected for the defects listed in table VI. The lot size shall be expressed in bags. The sample unit shall be one bag. The inspection level shall be S-4 and the AQL, expressed in terms of defects per hundred units, shall be 2.5 for major defects and 4.0 for minor defects. A minimum of 50 samples shall be examined for critical defects. The finding of any critical defect shall be cause for rejection of the lot. The inspection sample shall contain a proportionate amount of each of the meals.

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TABLE VI. Assembled meal bag defects

Category		Defect
<u>Critical</u>	<u>Major</u>	<u>Minor</u>
1		Tear or hole or open seal in cheese spread.
2		Swollen cheese spread pouch.
	101	Menu component missing or incorrect assortment for menu package. <u>1/</u>
	102	Not clean, the meal bag or any of the outer packaging of its contents. <u>2/</u>
	103	Foreign odor.
	104	Labeling missing or incorrect or illegible.
	105	Loss of vacuum in vacuum packaged components. <u>3/</u>
	106	Crushed or broken component. <u>4/</u>
	107	Broken spoon.
	108	Tear or hole or open seal in component packages.
	109	Swollen peanut spread, chocolate pouch.
	201	Tear or hole or open seal or split in meal bag.
	202	Tear or hole or open seal in accessory packet bag.
	203	Inverted "V" shaped peel indicator missing or not located as specified.
	204	Labeling graphics of meal bag not correct.

1/ A missing entrée shall be cause for rejection of the lot.

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

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

b. Localized dried product which affects less than 1/8 of the total surface area of one pouch face, or an aggregate of scattered dried product which affects less than 1/4 of the total surface area of one pouch face.

3/ When vacuum retention cannot be determined visually by obvious cling of the bag walls to the contents, retention shall be verified by testing as specified in the Packaging Requirements and Quality Assurance Provisions for Dehydrated Product in a Brickpack Pouch.

4/ For definition of crushed or broken, refer to applicable component document.

D. Methods of inspection.

(1) Seal testing. The pouch seals shall be tested for seal strength or internal pressure resistance as required in a, b, c, or d, as applicable.

a. Unfilled preformed accessory packet pouch. The seals of the unfilled preformed pouches for the accessory packet shall be tested for seal strength in accordance with ASTM F88/F88M, Standard Test Method for Seal Strength of Flexible Barrier Materials. The lot size shall be expressed in pouches. The sample unit shall be one pouch. The inspection shall be level S-1 and the AQL, expressed in defects per hundred units, shall be 10.0. Three 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 results of the three specimens cut from that side. Any test specimen failing to meet a seal strength of 3 pounds per inch of width shall be scored as a major defect. Any average seal strength of less than 3.5 pounds per inch of width shall be cause for rejection of the lot. Alternatively, 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

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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 V, footnote 2/) shall be considered a test failure. Any test failure shall be cause for rejection of the lot.

b. Unfilled meal bag. The seals of the unfilled meal bags shall be tested for seal strength in accordance with ASTM F88/F88M. The lot size shall be expressed in bags. The sample unit shall be one bag. The sample size shall be the number of bags indicated by inspection level S-1. Three specimens shall be cut from the sealed end of each bag in the sample. Samples shall not be taken from the inverted "V" peel initiation. Any specimen with a seal strength less than 4 pounds per inch of width or greater than 10 pounds per inch of width shall be cause for rejection of the lot.

c. Accessory packet pouch closure. The closure seals of the pouches for the accessory packet shall be tested for seal strength in accordance with ASTM F88/F88M. The lot size shall be expressed in pouches. The sample unit shall be one pouch. The inspection level shall be S-1 and the AQL, expressed in defects per hundred units, shall be 10.0. For the closure seal on preformed pouches, three adjacent specimens shall be cut from the closure seal of each pouch in the sample. For the form-fill-seal pouches, three specimens shall be cut from each side and each end of each pouch in the sample. The average seal strength of any side, end or closure shall be calculated by averaging the three specimens cut from that side, end or closure. Any test specimen failing to meet a seal strength of 3 pounds per inch of width shall be scored as a major defect. Any average seal strength of less than 3.5 pounds per inch of width shall be cause for rejection of the lot. Alternatively, 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

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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 V, footnote 2/) shall be considered a test failure. Any test failure shall be cause for rejection of the lot.

d. Meal bag closure. The closure seals of the meal bags shall be tested for seal strength in accordance with ASTM F88/F88M. The lot size shall be expressed in bags. The sample unit shall be one bag. The sample size shall be the number of bags indicated by inspection level S-1. Three specimens shall be cut from the closure seal of each bag in the sample. The average seal strength shall be calculated by averaging the three test specimens cut from that seal (the sample unit). Any test specimen result less than 3 pounds per inch of width shall be cause for rejection of the lot. Any average seal strength of less than 4 pounds per inch of width shall be cause for rejection of the lot.

(2) Unfilled preformed accessory packet pouch and unfilled meal bag seal certification. A CoC may be accepted as evidence that unfilled bags or pouches conform to the seal strength requirements specified in D-1,A,(1) and (2). When deemed necessary, seal testing of the unfilled bags or pouches shall be as specified in E,D,(1),a and b.

E. Packing.

(1) Shipping container examination. The filled and sealed shipping container shall be examined for the defects listed in table VII. 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.

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TABLE VII. Shipping container and marking defects

<u>Category</u>		<u>Defect</u>
<u>Major</u>	<u>Minor</u>	
101		Marking missing or incorrect or illegible.
102		Outer flaps do not completely meet, leaving an opening greater than 3/4 inch between flap ends.
103		Inadequate workmanship. <u>1/</u>
104		Missing meal. <u>2/</u>
105		Not one of each menu specified.
	201	Meal bag graphics do not coincide with specified design.
	202	Time-temperature indicator missing or not located as specified.
	203	Time-temperature indicator 1/4-inch quiet zone not maintained.

1/ Inadequate workmanship is defined as, but not limited to, incomplete closure of container flaps, loose strapping, inadequate stapling, improper taping, or bulged or distorted container.

2/ Each missing meal is a defect.

(2) Flap closure testing. The lot size shall be expressed in shipping containers. The sample unit shall be one shipping container. The inspection level shall be S-2 and the AQL, expressed in terms of defects per hundred units, shall be 4.0. The closure of the four outer flaps of the container shall be tested separately. A 90 degree angular bar with each leg approximately 5 inches long by 3 inches wide by 1/8 inch thick shall be used to test the flap closures. Insert one leg of the angular bar full length under the center of one outer flap. Insertion shall be made through the open slot between the outer flaps. Lift the container vertically by the other leg of the bar until the container is suspended. The complete upper surface of the inserted leg shall be in contact with the inner surface of the flap during the lifting and suspension of the container. Complete separation of the adhesive bond of one or more of the outer flaps, showing no evidence of fiber tear, shall be scored as a major defect.

F. Unit load examination. The unit load shall be examined in accordance with the requirements of DLA Troop Support Form 3507. Any nonconformance shall be classified as

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a major defect.

## **SECTION J REFERENCE DOCUMENTS**

Unless otherwise specified, the applicable version of these documents is that which is active on the date of the solicitation or contract.

### DLA Troop Support Forms

Form 3507	Loads, Unit: Preparation of Semiperishable Subsistence Item
Form 3556	Marking Instructions for Boxes, Sacks, and Unit Loads of Perishable and Semiperishable Subsistence

### MILITARY SPECIFICATIONS

MIL-STD-3010	Test Procedures for Packaging Materials
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### FEDERAL STANDARDS

FED-STD-595	Colors Used in Government Procurement
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### NON-GOVERNMENTAL STANDARDS

AMERICAN SOCIETY FOR QUALITY CONTROL (ASQC) [www.aoc.org](http://www.aoc.org)

ANSI/ASQ Z1.4	Sampling Procedures and Tables for Inspection by Attributes
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ASTM INTERNATIONAL [www.astm.org](http://www.astm.org)

D1974/D1974M	Standard Practice for Methods of Closing, Sealing, and Reinforcing Fiberboard Boxes
D2103	Standard Specification for Polyethylene Film and Sheeting
D4727/D4727M	Standard Specification for Corrugated and Solid Fiberboard Sheet Stock (Container Grade) and Cut Shapes
D5118/D5118M	Standard Practice for Fabrication of Fiberboard Shipping Boxes

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E96/E96M	Standard Test Methods for Water Vapor Transmission of Materials
F88/F88M	Standard Test Method for Seal Strength of Flexible Barrier Materials
F1249	Standard Test Method for Water Vapor Transmission Rate Through Plastic Film and Sheeting Using a Modulated Infrared Sensor

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## For DLA Troop Support Website Posting

RDNS-SEC-F

19 December 2014

TO: DLA Troop Support - Subsistence

SUBJECT: ES15-012 (DSCP-SS-15-00275); Specification change request; failed testing for sodium requirement and noodle percentage for Beef, Flavor 1, Class b, and Chicken, Flavor 2, Class b, of Packaging Requirements and Quality Assurance Provisions (PKG&QAP) for Commercial Item Description (CID) A-A-20297B Soup, Noodle; Ramen, Instant; for use in Meal Cold Weather/Food Packet, Long Range Patrol (MCW/LRP); Contract SPF300-15-R-0004; Vendor

1. Natick received an Engineering Support Case from DLA-Troop Support requesting specification changes to sodium and percent noodle requirements provided in the Packaging Requirements and Quality Assurance Provisions (PKG&QAP) and the Commercial Item Description (CID) for A-A-20297B Soup, Noodle; Ramen, Instant.
2. The vendor indicated that they have identified two potential sources for the chicken and beef flavored ramen noodle soup. The beef flavored ramen soup failed to meet the percent dry noodle requirements as well as the sodium requirement. The chicken flavored ramen soup failed to meet the percent dry noodle requirement only.
3. Natick non-concurs with vendors request to change the sodium requirement for the beef flavored ramen noodle soup. Natick recommends that the beef flavored soup be removed from ACR-C-014. The chicken flavored soup sourced by the vendor has been tested and meets the current sodium requirements therefore will remain as the only flavor cited in ACR-C-014.
4. Natick non-concurs with the vendors request to use a “spool” of noodle in place of the dry noodle percent weight in CID A-A-20297B. From the research conducted it appears as though the “spool” of noodles test is based upon a wet noodle. The noodles used in this product are dry noodles.
5. Natick recommends that the percent weight of dry noodles be changed in CID A-A-20297B from a minimum of 86 percent to a minimum of 82 percent to align with the commercial ramen soup product that is currently available.

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6. Natick submits the following changes to ACR-C-014, Meal Cold Weather/Food Packet, Long Range Patrol, Combined Ration, Assembly Requirements for all current, pending, and future procurements until the document is formally amended or revised:

a. Page 2, C-2, A, Table I, Component: after “Soup, Noodle, Ramen, Instant, Fried Noodle Cup/Bowl” delete “Beef or”.

b. Page 2, C-2, A, Table I, Reference: after “A-A-20297B, Type I, Style A” delete “s” in “Flavors” and after “s” delete “1 or”.

c. Page 6, C-2, C, Table III, Menu #6, after “Ramen Noodle Soup” delete footnote “1”.

d. Page 7, C-2, C, Table III, Menu #8, after “Ramen Noodle Soup” delete footnote “1”.

e. Page 8, C-2, C Table IV, delete entire last row that references “Soup, Noodle, Ramen, Instant”.

7. This change will not have a negative impact on the nutrition content of the menus.

8. The Service Representatives were contacted and their replies were:

Army: Concurs with Natick

Marines: Concurs with Natick

9. Attached is Change 05, ACR-C-014, Meal Cold Weather/Food Packet, Long Range Patrol, Combined Ration, Assembly Requirements, dated 19 December 2014, with changes.