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18 April 2017
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SECTION C

The First Strike Ration® (FSR) provides an assault ration for the individual during short duration, high intensity missions.

C-1 ITEM DESCRIPTION

ACR-F-09, FIRST STRIKE RATION® (FSR), ASSEMBLY REQUIREMENTS

C-2 ASSEMBLY REQUIREMENTS

A. Components. The components are specified in table I.

TABLE I. Components

Component	Reference
<u>Entrées</u>	
Chicken Breast Fillets, Seasoned	A-A-20361A
Garlic and Herb Seasonings	Type I
Barbecue Sauce	Type II
Chicken Chunks, White, Cooked, Canned or in	A-A-20352BC
Flexible Pouches, 7 oz. Pouch, Regular, Conventional	Type VI, Style A, Agric. Practice 1
Filled Bakery Item	MIL-DTL-32221BC
Filled French Toast	Type I
Cinnamon Bun	Type II
Apple Turnover	Type III
Blueberry Turnover	Type IV
Filled Wrap	MIL-DTL-32347
Barbecued Seasoned Pork	Type I
Mexican Style Beef	Type II
Sandwich, Breakfast, Shelf Stable, Bacon Cheddar	MIL-DTL-32223
Sandwich, Shelf Stable	MIL-DTL-32141
Nacho Flavored Beef	Type I
Pepperoni	Type II
Honey Barbecue Chicken	Type III
Honey Barbecue Beef	Type IV
Italian Style	Type V

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TABLE I. Components - Continued

Component	Reference
Tuna, Flexible Pouch, Chunk Light, Water, Lemon Pepper, Regular (no more than 1.5 percent salt) Chunk, Light, Water Sweet and Spicy, Regular (no more than 1.5 percent salt) Solid, White (Albacore), Water, Unflavored, Regular Salt, 3 ounce	A-A-20155D, Type B, Form I, Color a, Packing Media 1, Flavor 1, Salt/Sodium Level (a) Form I, Color a, Packing Media 1, Flavor 3, Salt/Sodium Level (a) Form II, Color b, Packing Media 1, Unflavored, Salt/Sodium Level (a), Option 1
<u>Starches and Soups</u>	
Bagel, Plain	MIL-DTL-32219, Type I
Crackers, Fortified, Plain	PCR-C-037A, Type I
Snack Bread, Fortified	PCR-S-009D
Italian Bread Sticks, Single Pack	Type IV, Style A
Multigrain Snack Bread, Single Pack	Type V, Style A
Spread Soup Mix	PCR-S-023
Cheddar Potato with Artificial Bacon Bits	Type II
Tortillas	PCR-T-008A
Plain	Flavor 1
Chipotle	Flavor 2
<u>Fruits</u>	
Fruits, Infused, Dried	A-A-20299C
No Sulfiting Agents	Class (1)
Sweetened with Nutritive Sweeteners	Sweetening option, a,
Cranberries, Sliced, Unflavored,	Type VII, Style B, Flavor 1,
Whole Raisins, Seedless	Type IX, Variety A
Fruits, Wet Pack	PCR-F-002C
Applesauce, Carbohydrate Enhanced, Sweetened, Regular Style, Style 2 or 3 Spout Pouch	Type VII
Applesauce, Carbohydrate Enhanced, Sweetened, Regular Style, Cinnamon, Style 2 or 3 Spout Pouch	Type IX

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Component	Reference
<u>Desserts and Snacks</u>	
Caffeinated Chocolate Pudding	PCR-C-081
<i>Trans</i> Fat Free, Style 2 or 3 Spout Pouch	
Cakes, Brownies, Muffin Tops and Filled Cakes	PCR-C-007F
Pound Cake, Lemon Poppy Seed, <i>Trans</i> Fat Free	Type I, Flavor 6, Style 2
Candy and Chocolate Confections	A-A-20177EF
Caffeinated Mints, Round Tablets, Sugar Free	Type XH VII, Style B
Peppermint	Flavor I
Cheese Spread, Cheddar, Fortified	PCR-C-039A
Plain	Type I
With Jalapeno Peppers	Type II
Dessert Bar	PCR-D-004
Mocha	Flavor I
Peanut Butter	Flavor II
Chocolate Banana Nut	Flavor III
Energy Gel, Mixed Berry	PCR-E-018, Flavor I
First Strike Bars, Mini	PCR-F-001A, Style B
Chocolate, Mini , Barrier Pouch	Flavor I, Style B, Type I
Apple-Cinnamon, Mini , Barrier Pouch	Flavor II, Style B, Type I
Cran-Raspberry, Mini , Barrier Pouch	Flavor III, Style B, Type I
Mocha, Mini , Barrier Pouch	Flavor V, Style B, Type I
Meat and Poultry Snacks, Cured	A-A-20298C
Beef, Moist Cured/Kippered, Chopped and Formed,	Variety A, Type II, Style a,
Strips	Class 1, Package J
Teriyaki	Flavor (b)
Barbeque	Flavor (e)
Beef, Fermented, Chopped and Formed,	Variety A, Type IV, Style a,
Sticks, Teriyaki	Class 2, Flavor (b)
Turkey, Moist Cured/Lactate, Natural Style, Nuggets	Variety B, Type III, Style b, Class 4,
Smoked	Flavor (a), Package J
Nut and Fruit Mix	PCR-N-003AB
Nut and Raisins with Pan Coated Chocolate Disks	Type II

TABLE I. Components - Continued

Component	Reference
Nut Butters and Nut Spreads	A-A-20328BC

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<p>Manufactured from Dry Roasted Nuts, Regular, Stabilized, Fortified, Salted, Conventional Peanut Butter, Smooth, Plain Nuts, Shelled, Roasted Conventional Almonds (Unblanched), Flavored (Smoked) Snack Foods Pretzels, Sticks, Plain, Salted Nuggets, Honey Mustard and Onion Pretzels, Filled Pretzels, Cheddar Cheese Baked Snack Crackers, Hot and Spicy Cheese Cheddar Cheese Toasted Corn Kernels, Plain, Salted and Barbecue Cheese Filled Crackers, Cheddar Cheese Pepperoni Pizza Trail Mix, Recovery Trail Mix, Recovery with Pretzels Trail Mix, Recovery with Beef Jerky Toaster Pastries, Regular, Not Fortified, Enriched Wheat Flour, Conventional Single Serving Packet, Frosted (icing) Brown Sugar Cinnamon, Evenly Distributed Frosting Chocolate Chip, Swirled and/or Drizzled Icing</p> <p><u>Beverages</u> Beverage Powder, Carbohydrate, Flat Interlocking Closure Pouch Fortified with Ascorbic Acid and Enhanced with Maltodextrin Fruit Punch Grape Lemon-Lime Orange</p>	<p>Form (a), Class A, Type a, Fortification ii, Seasoning (a), Agricultural Practice (1) Style I, Texture 1, Flavor (1) A-A-20164DE Agricultural Practices (1) Type IX VI, Style C A-A-20195DE Type II, Style C, Flavor I Type II, Style E, Flavor 2 Type II, Style F, Flavor 1 Type V, Flavor 2 1</p> <p>Type VI, Flavors 1 and Flavor 2 Type VII, Flavor 1 2</p> <p>PCR-T-014A Type I Type II A-A-20211C, Type I, Fortification b, Grain Comp. (1), Agric. Practice i Servings (a), Style B Flavor 3, Icing Option (b) Flavor 12, Icing Option I</p> <p>PCR-B-055 Design B Formulation b</p> <p>Flavor 1 Flavor 2 Flavor 3 Flavor 4</p>
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TABLE I. Components – Continued

Component	Reference
Tropical Punch	Flavor 5

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Lemonade	Flavor 6
Chocolate Protein Drink Powder	PCR-C-082A B
Chocolate	Flavor I
Dairyshake Powder, Fortified with Calcium and Vit. D	PCR-D-002B
<i>Trans</i> Fat Free, Flat Interlocking Closure Pouch	Type II, Design B
Vanilla	Flavor I
Strawberry Banana	Flavor IV
<u>Other Items</u>	
Barbecue Sauce, Plain/Regular, Without Fruit Purees	A-A-20335B, Flavor I, Type B
Chewing Gum <u>3/</u>	A-A-20175E
Tablet, Large, or Disk, Regular,	Type I, Size C, or Type VII, Size B,
with Caffeine, Regular,	Style (2), Class 1, Package J
Peppermint	Flavor a
Cinnamon	Flavor c
Hot Sauce <u>2/</u>	A-A-20097 FG
Extra Hot 4x, 1/8 fl. Oz. pouch Conventional	Type II, Agric. Practices A
Buffalo Style	Type IX
Mayonnaise, Salad Dressing and Tartar Sauce	A-A-20140 DE
Mayonnaise, Plain , Fat Free	Type I, Style C Flavor A, Style 3
Fork, Knife and Spoon, Picnic (Plastic)	A-A-3109B
High Impact, Spoon, MRE, 7-inch (Brown)	Type IV, Item 13
Re-closeable Interlocking Plastic Bag <u>1/</u>	

1/ The plastic bag shall be 0.003” thick, beige, opaque, LDPE, minimum 10 inches wide by 12 inches long, with double track zippers.

2/ Hot sauce may be packaged in the subassembly/accessory packet or loose in the meal bag.

3/ Either Type I (Tablet, Large) or Type VII (Disk, Regular) may be procured for distribution in the Menus listed in TABLE III.

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B. Accessory components. Accessory components are specified in table II.

TABLE II. Accessory Components

Component	Reference	Acc. Pack
Chewing Gum, Tablet, Regular, Without Caffeine, Xylitol Sweetened, Peppermint or Cinnamon <u>1/</u>	A-A-20175E, Type I, Size B, Style (1), Class 3, Flavor a or c	A, B, C
Hand and Body Wipes, Pre-Moistened, Hand Wipe, Non-antibacterial, Individually Wrapped, Single Pack	A-A-461C, Type I, Style 2, Packaging a, (3 hand wipes per accessory pack)	A, B, C
Matches, Safety Paper, 20 Splint Book	A-A-59489B, Type I, Class B	A, B, C
Salt, Table, Iodized, <u>4-grams 0.67-0.75 grams</u>	NaCl Monograph	A, B, C
Toilet Tissue, Institutional, Folded, One Ply, Perforated, 4-1/2" by 4-1/2"	A-A-59594A, Style II, Type A, Class 1, Sheet size b	A, B, C
Coffee, Soluble Spray Dried, Agglomerated or Freeze Dried, Regular	A-A-20184C Type II or Type III, Style A	A
Creamer, Non-Dairy, Dry, Regular, Plain/Unflavored	A-A-20043D, Style I, Flavor A	A
Sugar, White (Refined), Granulated (fine or extra fine), 1/7 ounce <u>Sugar, White, Refined, and Sugar, Brown White (Refined) Granulated (Fine or Extra Fine) Conventional, 2.8 grams</u>	A-A-20135DE Type I Style A <u>Agricultural Practice 1</u>	A
Beverage Bases (Powdered) <u>1/</u> Sweetened with Non-Nutritive Sweetener, Lap or Fin Seal Pouch	A-A-20098F Type III Design D	B
Lemonade, Not Fortified <u>1/</u> Raspberry, Not Fortified <u>1/</u> Cranberry Grape, Not Fortified <u>1/</u>	Flavor 8, Formulation a Flavor 13, Formulation a Flavor 22, Formulation a	

1/ Flavors shall be procured in equal quantities and assembled in a uniform distribution
which provides the greatest variation.

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C. Contents. The contents of each meal are specified in table III. Refer to table I for full citation and document number of components.

TABLE III. Contents

<u>Menu #1</u>	<u>Menu #2</u>	<u>Menu #3</u>
Filled French Toast	Toaster Pastry <u>1/</u>	Cake, Lemon Poppy Pound
Sandwich, Breakfast Bae-	Sandwich, Italian Style	Sandwich, Honey BBQ Beef
Ch. Honey BBQ Beef	Chicken Chunks	Chicken Chunks
Sandwich, Pepperoni	Tortillas, Chipotle	Tortillas, Plain
Cheese Spread, Jalapeno	Peanut Butter	Cheese Spread, Plain
Italian Bread Sticks	Crackers, Plain	Crackers, Plain
Dessert Bar, Peanut Butter	Dessert Bar, Mocha	Dessert Bar,
First Strike Bar, Chocolate	First Strike Bar, Apple-	Chocolate Banana Nut
Beef Strips, Barbeque	Cinnamon	First Strike Bar, Mocha
Beef Strips, Teriyaki	Beef Strips, Teriyaki	First Strike Bar, Cran-
Meat Snack, Sticks, Teriyaki	Beef Strips, Barbeque	Raspberry
Snack, Pretzels,	Trail Mix, Recovery with	Snack, Corn Kernels,
Sticks Nuggets, Honey	Beef Jerky	Plain Barbecue
Mustard and Onion	Fruit, Zapplesauce®	Fruit, Zapplesauce®
Fruit, Zapplesauce®,	Fruit, Dried, Cranberries	Trail Mix, Recovery with
Cinnamon	Nuts, Almonds, Smoked	Pretzels
Trail Mix, Recovery with	Beverages (2) <u>1/</u>	Beverages (2) <u>1/</u>
Pretzels	Gum, Caffeine, Peppermint	Candy, Caffeinated Mints
Chocolate Protein Drink	Barbecue Sauce	Hot Sauce, Buffalo Style <u>2/</u>
Beverage (1) <u>1/</u>	Re-closeable Plastic Bag	Barbecue Sauce
Gum, Caffeine, Cinnamon	Spoon	Re-closeable Plastic Bag
Re-closeable Plastic Bag	Accessory Packet B	Spoon
Spoon		Accessory Packet A
Accessory Packet B		

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<p><u>Menu #4</u> Filled Cinnamon Bun Filled Wrap, Mexican Style Beef Chicken, BBQ Snack Bread, Multigrain Cheese Spread, Jalapeno Turkey Nuggets, Smoked Meat Snack, Sticks, Teriyaki Dessert Bar, Peanut Butter First Strike Bar, Mocha Energy Gel, Mixed Berry Snack, Filled Pretzel, Cheddar Fruit, Zapplesauce® Fruit, Dried, Raisins Cranberries Beverages (2) <u>1/</u> Gum, Caffeinated, Cinnamon Hot Sauce, Extra Hot <u>2/</u> Re-closeable Plastic Bag Spoon Accessory Packet A</p>	<p><u>Menu #5</u> Filled French Toast Toaster Pastry <u>1/</u> Sandwich, Honey BBQ Chicken Tuna, Lemon Pepper Peanut Butter, Plain Crackers, Plain Beef Stick, Teriyaki Snack, Corn Kernels, Plain Barbecue First Strike Bar, Cran- Raspberry Energy Gel, Mixed Berry Nut Fruit Mix, Type II Snack, Filled Pretzel, Cheddar Fruit, Zapplesauce®, Cinnamon Chocolate Protein Drink Beverage (1) <u>1/</u> Candy, Caffeinated Mints Mayonnaise, Fat Free Re-closeable Plastic Bag Spoon Accessory Packet C</p>	<p><u>Menu #6</u> Filled Apple Turnover Filled Wrap, BBQ Pork Chicken, Garlic and Herb Cheese Spread, Plain Bagel, Plain Turkey Nuggets, Smoked Meat Snack, Sticks, Teriyaki Snack, Filled Pretzel, Cheddar Nut Fruit Mix, Type II Dessert Bar, Mocha First Strike Bar, Apple- Cinnamon Caffeinated Chocolate Puddin' Fruit, Dried, Cranberries Dairyshake Powder, Strawberry Banana Beverage (1) <u>1/</u> Gum, Caffeinated, Peppermint Hot Sauce, Extra Hot <u>2/</u> Re-closeable Plastic Bag Spoon Accessory Packet C</p>
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<u>Menu #7</u>	<u>Menu #8</u>	<u>Menu #9</u>
Filled Blueberry Turnover	Filled French Toast	Filled Cinnamon Bun
Sandwich, Beef Nacho	Sandwich, Honey BBQ	Sandwich, Italian Style
Tuna, Sweet and Spicy	Chicken	Chicken, Garlic and Herb
Tortillas, Plain	Tuna, Albacore	Tortillas, Plain
Spread, Cheddar Potato Bacon	Bagel, Plain	Spread, Cheddar Potato Bacon
Crackers, Plain	Cheese Filled Crackers,	Crackers, Plain
Baked Snack Crackers,	Cheddar Cheese	Snack, Corn Kernels,
Hot and Spicy Cheese	Pepperoni Pizza	Barbecue
Cheddar Cheese	Beef Strips, Barbeque	Beef Strips, Barbeque
Beef Stick, Teriyaki	Beef Strips, Teriyaki	Beef Strips, Teriyaki
First Strike Bar, Chocolate	Meat Snack, Sticks,	Meat Snack, Sticks, Teriyaki
First Strike Bar, Apple-	Teriyaki (2)	First Strike Bar, Cran-
Cinnamon	Dessert Bar,	Raspberry
Nut Fruit Mix, Type II	Chocolate Banana Nut	Caffeinated Chocolate Pudding
Fruit, Zapplesauce®	First Strike Bar, Mocha	Fruit, Dried, Raisins Cranberries
Beverages (2) <u>1/</u>	Fruit, Zapplesauce®,	Dairyshake Powder, Vanilla
Gum, Caffeinated, Cinnamon	Cinnamon	Beverage (1) <u>1/</u>
Mayonnaise, Fat Free	Nut Fruit Mix, Type II	Candy, Caffeinated Mints
Re-closeable Plastic Bag	Dairyshake Powder, Vanilla	Hot Sauce, Extra Hot <u>2/</u>
Spoon	Beverage (1) <u>1/</u>	Re-closeable Plastic Bag
Accessory Packet A	Gum, Caffeinated,	Spoon
	Peppermint	Accessory Packet B
	Mayonnaise, Fat Free	
	Re-closeable Plastic Bag	
	Spoon	
	Accessory Packet A	

1/ Flavors shall be procured in equal quantities and assembled in a uniform distribution. When menu contains two beverages, they shall be different flavors.

2/ Hot sauce may be packaged in the subassembly/accessory packet or loose in the meal bag.

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SECTION D

D-1 PACKAGING

A. Components.

(1) Subassembly packet/accessory packet. The subassembly/accessory packet shall be a preformed pouch or a form-fill-seal pouch. 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 of the filled and sealed pouch. The average seal strength of the pouch 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 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 for internal pressure resistance. The pouch 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/m²/24hrs/90%rh/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 Transmission of Materials or Method 3030 of FED-STD-101, Test Procedures for Packaging Materials. The exterior color of the packet shall be clear or tan.

(2) 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.

(3) Meal assembly packet. The meal assembly packet shall be of sufficient thickness and strength to contain the meal components without tearing or spillage of meal contents throughout assembly, packing and distribution.

B. Assembly.

(1) Subassembly/accessory packet assembly. One of each applicable component as described in table II shall be inserted in a pouch. If a subassembly is used, additional components may also be inserted in the pouch. For a preformed pouch, components 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 pouch, components shall be placed in the body and the cover

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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 average seal strength of the pouch 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 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 assembly packet. The packet shall be a single bag or pouch. The meal assembly packet shall be shrink wrapped or heat-sealed (as applicable). If closed by heat seal, the seal shall be not less than 1/8 inch wide. The sealed assembly packet shall not show any evidence of foreign odor. The size of the finished meal assembly packet shall allow for the packing of nine meals into the box.

D-2 LABELING

A. Subassembly/accessory packet. The subassembly/accessory packet shall be labeled on one face in permanent dark contrasting color ink with 'A', 'B', or 'C', as applicable. Alternatively, the packet letter may be embossed in the seal of the packet.

B. Meal assembly packet. Each packet shall be correctly and legibly labeled in accordance with the colors and design of the FIRST STRIKE RATION® label shown in figure 1. (NOTE: The registered label design of the U.S. Army Research, Development and Engineering Command, Natick Soldier Research, Development and Engineering Center is available electronically.) As an alternate labeling method, a pre-printed self-adhering 0.002 inch thick polyester label may be used.

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FIGURE 1. First Strike Ration® Label.

The following information shall also be printed on the packet:

Contractor's name and address
Appropriate menu number and contents

D-3 PACKING

A. Packing. Nine meals, one of each menu, 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, 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. [U.S. Army Research, Development and Engineering

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Command, Natick Soldier Research, Development and Engineering Center has 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 met 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, 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

(2) 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.

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(3) One side panel of shipping container shall be marked "FIRST STRIKE RATION®" in letters not less than 1-1/4 inches high. Underneath the ration nomenclature, in letters not less than 1/2 inch, the shipping container shall be marked "DO NOT ROUGH HANDLE WHEN FROZEN (0°F or below)".

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

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 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. Conformance inspection. Conformance inspection shall include the examinations/tests and the methods of inspection cited in this section.

C. Packaging examination.

(1) Subassembly/accessory material certification. The pouch material shall be tested for these characteristics. A Certificate of Conformance (CoC) may be accepted as evidence that the characteristics conform to the specified requirements.

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Requirement	Requirement Paragraph	Test procedure
Color of subassembly/accessory packet	D-1,A(1)	Visual evaluation and SAE-AMS-STD-595, as applicable <u>1/</u>
Water vapor transmission rate	D-1,A(1)	ASTM F1249 <u>2/</u> , ASTM E96/E96M <u>3/</u> or Method 3030 of MIL-STD-3010 <u>4/</u> , FED-STD-101 <u>5/</u>

1/ Colors Used in Government Procurement

2/ Standard Test Method for Water Vapor Transmission Rate Through Plastic Film and Sheeting Using a Modulated Infrared Sensor

3/ Standard Test Methods for Water Vapor Transmission of Materials

4/ Test Procedures for Packaging Materials and Containers

5/ Test Procedures for Packaging Materials

(2) Unfilled preformed subassembly/accessory packet pouch certification. A CoC may be accepted as evidence that unfilled pouches conform to the requirements specified in D-1,A(1). When deemed necessary by the USDA, testing of the unfilled preformed pouches for seal strength shall be as specified in E,D(1)a.

(3) Subassembly/accessory packet examination. The filled and sealed packets shall be examined for the defects listed in table IV. 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.

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TABLE IV. Subassembly/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	Label missing or incorrect or illegible.

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.

(4) Subassembly/accessory packet contents examination. The filled and sealed packets shall be examined for the defects listed in table V (this examination may be performed on the preformed pouches after filling and prior to sealing). The lot size shall be expressed in packets. The sample unit shall be one packet open or sealed. The inspection level shall be S-4 and the AQL, expressed in terms of defects per hundred units, shall be 1.5 for major defects and 4.0 for minor defects.

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TABLE V. Subassembly/accessory packet contents defects

Category		Defect
<u>Major</u>	<u>Minor</u>	
101		Component not clean. <u>1/</u>
	201	Missing or unserviceable component.

1/ Outer packaging shall be free from foreign matter, which is unwholesome, has the potential to cause package damage (for example, 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 package face, or an aggregate of scattered dried product which affects less than 1/4 of the total surface area of one package face.

(5) Assembled meal packet examination. The filled and sealed meal packets shall be inspected for the defects listed in table VI. The lot size shall be expressed in packets. The sample unit shall be one packet. 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 packet defects

Category			Defect
<u>Critical</u>	<u>Major</u>	<u>Minor</u>	
1			Tear or hole or open seal in sandwich, filled wrap, filled bakery item, cheese spread, tuna or chicken pouch.
	2		Swollen sandwich, filled wrap, filled bakery item, cheese spread, tuna or chicken pouch.
	101		Menu component missing or incorrect assortment for menu. <u>1/</u>
	102		Meal packet not clean or outer packaging of contents not clean. <u>2/</u>
	103		Foreign odor.
	104		Labeling missing or incorrect or illegible.
	105		Swollen peanut butter or spread soup pouch.
	106		Tear or hole or open seal in component packages.
	107		Crushed or broken component. <u>3/</u>
	108		Broken spoon.
		201	Tear or hole or open seal in meal packet. <u>4/</u>
		202	Tear or hole or open seal in subassembly/accessory packet.
		203	Re-closeable interlocking plastic bag not as specified.

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

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:

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

4/ The holes provided in shrink films to allow venting of air to facilitate effective application of shrink wrap film are permitted and shall not be scored as defects. In addition a single vent hole in a preformed bag not greater than 1/4 inch diameter is allowed and shall not be scored a defect.

D. Methods of inspection.

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

a. Unfilled preformed subassembly/accessory packet pouch. The seals of the unfilled preformed pouches for the subassembly/accessory packet shall be tested for seal strength in accordance with ASTM F88/F88M, 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 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 end 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

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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. Any test failure shall be classified as a major defect and shall be cause for rejection of the lot.

b. Subassembly/accessory packet pouch closure. The closure seals of the pouches for the subassembly/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 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 end 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. Any test failure shall be classified as a major defect and shall be cause for rejection of the lot.

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E. Packing.

(1) Shipping container and marking examination. The filled and sealed shipping containers 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.

TABLE VII. Shipping container and marking defects

Category		Defect
<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		Not 9 meals per case. <u>2/</u>
105		Not one of each menu.
	201	Time-temperature indicator missing or not centrally located on panel.
	202	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/ A missing meal shall be cause for rejection of the lot.

(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

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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 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 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 for Semiperishable Subsistence Items
Form 3556	Marking Instructions for Boxes, Sacks, and Unit Loads of Perishable and Semiperishable Subsistence

FEDERAL STANDARDS

FED-STD-101	Test Procedures for Packaging Materials
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NON-GOVERNMENTAL STANDARDS

AMERICAN SOCIETY FOR QUALITY (ASQ) www.asq.org

ANSI/ASQ Z1.4	Sampling Procedures and Tables for Inspection by Attributes
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SAE INTERNATIONAL www.sae.org

SAE AMS-STD-595	Colors Used in Government Procurement
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ASTM INTERNATIONAL www.astm.org

D1974/D1974M	Standard Practice for Methods of Closing, Sealing, and Reinforcing Fiberboard Boxes
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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
E96/E96M	Standard Test Methods for Water Vapor Transmission of Materials
F1249	Standard Test Method for Water Vapor Transmission Rate Through Plastic Film and Sheeting Using a Modulated Infrared Sensor
F88/F88M	Standard Test Method for Seal Strength of Flexible Barrier Materials