

SECTION C

The Meal, Ready-to-Eat (MRE) provides an operational ration for the individual.

C-1 ITEM DESCRIPTION

ACR-M-039, MEAL, READY-TO-EAT (MRE), ASSEMBLY REQUIREMENTS

C-2 ASSEMBLY REQUIREMENTS

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

TABLE I. Components

| <u>Component</u> | <u>Reference</u> |
|--|---|
| <u>Entrées</u> | |
| Beef Goulash (Beef with Brown Rice, Spinach, Carrots, Tomatoes and Smoked Paprika) | <u>PCR-B-060</u> |
| Beef Patty, Grilled Jalapeno Pepper Jack | <u>PCR-B-029A</u> Flavor 2 |
| Beef Ravioli in Meat Sauce | <u>PCR-B-021A</u> |
| Beef, Shredded, in Barbecue Sauce | <u>PCR-B-057</u> |
| Beef Stew | <u>PCR-B-020A</u> |
| Beef Strips in a Savory Tomato Based Sauce | <u>PCR-B-061</u> |
| Beef Taco | <u>PCR-B-054</u> |
| Cheese Tortellini in Tomato Sauce | <u>PCR-C-020A</u> |
| Chicken, Egg Noodles, and Vegetables, in Sauce | <u>PCR-C-021A</u> |
| Chicken Burrito Bowl (Chicken with Rice, Beans and Vegetables) | <u>PCR-C-088</u> |
| Chicken Chunks, White, Cooked, Canned or in Flexible Pouches, 5 oz. Pouch | <u>A-A-20352B</u> Type V |
| Chili and Macaroni | <u>PCR-C-027A</u> |
| Chili with Beans | <u>PCR-C-062A</u> |
| Creamy Spinach Fettucine (Egg Noodles, Spinach and Mushrooms in a Cream Sauce) | <u>PCR-C-087</u> |
| Elbow Macaroni in Tomato Sauce | <u>PCR-E-019</u> |
| Hash Brown Potatoes with Bacon, Peppers and Onions | <u>PCR-H-012A</u> |
| Meatballs in Marinara Sauce | <u>PCR-M-015</u> |
| Mexican Style Chicken Stew | <u>PCR-M-016</u> |
| Pizza Slice, Pepperoni | <u>MIL-DTL-32541</u> |
| Pork Sausage Patty, Maple Flavored | <u>PCR-P-045</u> |
| Southwest Style Beef and Black Beans with Sauce | <u>PCR-S-018</u> |
| Spaghetti with Beef and Sauce | <u>PCR-S-002</u> |

TABLE I. Components - Continued

| Component | Reference |
|---|---|
| Tuna, Flexible Pouch, Chunk, Light, Water, Lemon Pepper, Regular (no more than 1.5 percent salt) Vegetable Crumbles with Pasta in Taco Style Sauce | A-A-20155D , Type B, Form I, Color a, Packing Media 1, Flavor 1, Salt/Sodium Level (a) PCR-V-010 |
| <u>Starches and Soups</u> | |
| Black Beans in a Seasoned Sauce | PCR-B-056 |
| Cornbread | PCR-C-075 |
| Granola | PCR-G-003A |
| With Milk and Blueberries | Type I |
| Potatoes, Au Gratin | PCR-P-048 |
| Potatoes, Mashed, Garlic | PCR-P-011A , Flavor II |
| Santa Fe Style Rice and Beans | PCR-S-019 |
| Snack Bread, Fortified | PCR-S-009D |
| Wheat Snack Bread, Single Pack | Type I, Style A |
| Italian Bread Sticks, Single Pack | Type IV, Style A |
| Multigrain Snack Bread, Single Pack | Type V, Style A |
| White Wheat Snack Bread, Single Pack | Type VI, Style A |
| Tortillas | PCR-T-008A |
| Plain | Flavor 1 |
| Chipotle | Flavor 2 |
| <u>Fruits</u> | |
| Apple Pieces in Spiced Sauce | PCR-A-001C |
| Cobbler, Cherry Blueberry | PCR-C-058A , Flavor 1 |
| 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-002D |
| Mixed Fruit, Sweetened | Type V |
| Applesauce, with Raspberry Puree, Sweetened, Reg. | Type VI |
| Applesauce, Carbohydrate Enhanced, Sweetened, Reg. | Type VII |
| Applesauce, with Mango and Peach Puree, Sweetened, Reg. | Type VIII |

TABLE I. Components - Continued

| Component | Reference |
|---|---|
| <u>Desserts and Snacks</u> | |
| Cakes, Brownies, Muffin Tops and Filled Cakes | PCR-C-007F |
| Pound Cakes | Type I |
| Vanilla, <i>Trans</i> Fat Free | Flavor 1, Style 2 |
| Lemon Poppy Seed, <i>Trans</i> Fat Free | Flavor 6, Style 2 |
| Marble, <i>Trans</i> Fat Free | Flavor 11, Style 2 |
| Applesauce, <i>Trans</i> Fat Free | Flavor 12, Style 2 |
| Muffin Tops | Type III |
| Chocolate Banana Nut, <i>Trans</i> Fat Free | Flavor 1, Style 2 |
| Maple, <i>Trans</i> Fat Free | Flavor 2, Style 2 |
| Cheese Spread, Cheddar, Fortified | PCR-C-039A |
| Plain | Type I |
| With Jalapeno Peppers | Type II |
| With Bacon | Type III |
| Cookies, Regular, Individual Serving Package, | A-A-20295D , Type I, Class 1, |
| Crisp | Bake Type a |
| Sugar Cookies, Patriotic | Style D, Shape (b) |
| Oatmeal Cookies, Plain | Style I, Flavor 1 |
| Oatmeal Cookies, Chocolate Chunk | Style I, Flavor 6 |
| Chocolate Chip Cookies, Plain | Style J, Flavor 1 |
| Crackers, Fortified | PCR-C-037A |
| Plain | Type I |
| Vegetable | Type II |
| Dessert Powder, Pudding, Regular | A-A-20344A , Type I |
| Instant, Nonfat Dry Milk | Preparation Method C, Style 1 |
| Vanilla | Flavor a |
| Filled Bakery Item | MIL-DTL-32221B |
| Cinnamon Bun | Type II |
| Apple Turnover | Type III |
| First Strike Bars | PCR-F-001A |
| Chocolate, Regular | Flavor I, Style A, Type I |
| Apple-Cinnamon, Regular | Flavor II, Style A, Type I |
| Cran-Raspberry, Regular | Flavor III, Style A, Type I |

TABLE I. Components - Continued

| Component | Reference |
|--|--|
| Jelly, Fruit, Standardized, Single, Regular U.S. Grade A Apple Grape | A-A-20078D , Type I, Style 1 Finished Product Quality a Kind A Kind M |
| Meat and Poultry Snacks, Cured Beef, Fermented, Chopped and Formed Sticks, Teriyaki | A-A-20298C Variety A, Type IV, Style a Class 2, Flavor (b) |
| Nut and Fruit Mix Nuts and Raisins with Pan Coated Chocolate Disks | PCR-N-003A Type II |
| Nut Butters and Nut Spreads Regular, Stabilized Fortified, Salted Conventional Peanut Butter, Smooth Peanut Butter, Chunky/Crunchy Peanut Spread, Smooth, Chocolate | A-A-20328B Class A, Type a Fortification 2, Seasoning (a) Agricultural Practices (1) Style I, Texture 1 Style I, Texture 3 Style II, Texture 1, Flavor 2 |
| Nuts, Shelled, Roasted Peanuts, Virginia or Runner Type, Dry Roasted, Salted Cashews, Halves (Splits), Flavored (Jalapeno) Almonds (Unblanched), Flavored (Smoked) | A-A-20164D Type V, Style A Type VI, Size 2, Style C Type IX, Style C |
| Preserves (or Jams), Fruit U.S. Grade A Single Fruit, Blackberry, Regular Single Fruit, Strawberry, Regular | A-A-20079D , Type I Finished Product Quality a Group I, Flavor A, Style 1 Group I, Flavor Q, Style 1 |
| Trail Mix, Recovery | PCR-T-014 |
| Snack Foods Pretzels, Sticks, Plain, Salted Pretzels, Nuggets, Honey Mustard and Onion Pretzels, Filled Pretzels, Cheddar Cheese Baked Snack Crackers, Cheddar Cheese Toasted Corn Kernels, Barbecue Cheese Filled Crackers, Pepperoni Pizza | A-A-20195D Type II, Style C, Flavor 1 Type II, Style E, Flavor 2 Type II, Style F, Flavor 1 Type V, Flavor 1 Type VI, Flavor 2 Type VII, Flavor 2 |
| Toaster Pastries, Regular, Not Fortified Enriched Wheat Flour, Conventional Single Serving Packet, Frosted (icing) Chocolate Chip, Swirled and/or Drizzled Icing | A-A-20211C , Type I, Fortific. b Grain Comp. (1), Agric. Practice i Servings (a), Style B Flavor 12, Icing Option (c) |

TABLE I. Components - Continued

| Component | Reference |
|---|---------------------------------------|
| <u>Candy</u> | |
| Candy and Chocolate Confections | A-A-20177E |
| Pan Coated Candy | Type VI |
| Disks, Milk Chocolate, Plain | Style A, Flavor 1 |
| Disks, Fruit Flavored, Original | Style A, Flavor 2, Flavor Style a |
| Disks, Fruit Flavored, Sweet and Sour | Style A, Flavor 2, Flavor Style d |
| Disks, Peanut Butter, Plain | Style A, Flavor 4 |
| Oval/Round, Milk Chocolate with Peanuts | Style B, Flavor 1 |
| Licorice Style Candy, Bite Size, Cherry | Type X, Style B, Flavor 1 |
| Mint Candy, Rings, Peppermint | Type XI, Style B, Flavor 2 |
| <u>Beverages</u> | |
| Beverage Bases (Powdered), Lap or Fin Seal Pouch | A-A-20098F , Design D |
| Sweetened with Non-nutritive Sweetener, Orange | Type III, Flavor 1 |
| Fortified with Ascorbic Acid and Calcium | Formulation h |
| Beverage Powder, Carbohydrate Electrolyte, Flat Pouch | PCR-B-013A , Design A |
| Fruit Punch | Flavor I |
| Grape | Flavor II |
| Lemon Lime | Flavor III |
| Orange | Flavor IV |
| Beverage Powder, Carbohydrate, Small Flat Pouch | PCR-B-055 , Design E |
| Fortified with Ascorbic Acid and Enhanced with Maltodextrin | Formulation a |
| Lemon-Lime | Flavor 3 |
| Orange | Flavor 4 |
| Tropical Punch | Flavor 5 |
| Chocolate Protein Drink Powder | PCR-C-082A |
| Cocoa Beverage Powder | A-A-20189C |
| Sugar Sweetened, Without Marshmallows | Type I, Style B |
| Flat Interlocking Closure Pouch | Design B |
| Milk Chocolate | Flavor A |
| Chocolate Hazelnut | Flavor F |

TABLE I. Components - Continued

| Component | Reference |
|--|--------------------------------|
| Drink Mixes, Coffee (Unflavored and Flavored) | A-A-20336B |
| Flavored Instant Cappuccino, Regular | Type V, Style A |
| Flat Interlocking Closure Pouch | Design B |
| French Vanilla | Flavor 1 |
| Mocha | Flavor 2 |
| Irish Cream | Flavor 4 |
| <u>Other Items</u> | |
| Bag, Hot Beverage | MIL-PRF-32176 |
| Barbecue Sauce | A-A-20335B |
| Plain/Regular, without Fruit Purees | Flavor I, Type B |
| Fork, Knife, and Spoon, Picnic (Plastic) | A-A-3109B |
| High Impact, Spoon, MRE, 7-Inch (Brown) | Type IV, Item 13 |
| Hot Sauce | A-A-20097F |
| Extra Hot 4x | Type II |
| Chili and Lime | Type VII |
| Mayonnaise, Salad Dressing, and Tartar Sauce | A-A-20140E |
| Mayonnaise, Plain, Fat Free | Type I, Flavor A, Style 3 |
| Paperboard Insert Card | MIL-PRF-44073H |
| Paperboard Sleeve | MIL-PRF-44073H |
| Ration Supplement, Flameless Ration Heater (FRH) | MIL-R-44398B |
| Spices and Spice Blends | A-A-20001B |
| Spices, Pepper, Red, Crushed | Type I, Class Z, Form 3 |
| Syrup (Not Including Maple Syrup) | A-A-20124E |
| Syrup, Table (for Pancakes, Waffles, etc.) | Type V |
| Artificial Maple, Regular Calorie | Flavor A, Style 1 |

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

TABLE II. Accessory Components

| Component | Reference | Acc. Pack |
|--|---|-----------|
| Chewing Gum, Tablet, Regular Without Caffeine With Xylitol Sweetener Peppermint or Cinnamon <u>1/</u> | A-A-20175E , Type I, Size B Style (1) Class 3 Flavor a or c | All |
| Hand and Body Wipes, Pre-Moistened, Hand Wipe, Non-antibacterial Individually Wrapped, Single Pack | A-A-461C Type I, Style 2 Packaging a | All |
| Matches, Safety Paper, 20 Splint Book | A-A-59489B Type I, Class B | A |
| Salt, Table, Iodized, 4 Grams | NaCl Monograph | All |
| 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 | All |
| Coffee, Soluble Spray Dried, Agglomerated or Freeze Dried, Regular | A-A-20184C Type II or Type III, Style A | A, C |
| Creamer, Non-Dairy, Dry Regular, Plain/Unflavored | A-A-20043D Style I, Flavor A | A, C |
| Sugar, White, Refined, and Sugar, Brown White (Refined) Granulated (fine or extra fine) Conventional, 1/7 Ounce | A-A-20135E Type I Style A Agricultural Practice 1 | A |
| Beverage Bases (Powdered) <u>1/</u> Sweetened with Non-Nutritive Sweetener, Lap or Fin Seal Pouch Lemonade, Not fortified Raspberry, Not fortified Cranberry Grape, Not fortified | A-A-20098F Type III Design D Flavor 8, Formulation a Flavor 13, Formulation a Flavor 22, Formulation a | B |
| Sugar Substitutes, Non-Carbohydrate Sucralose, Granular Envelopes/Packets | A-A-20178C Type IV, Style A Package 1 | C |

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

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

| | |
|---|---|
| <p><u>Menu #1</u> Chili with Beans Cheese Spread, Cheddar, Plain Crackers, Vegetable Cornbread Cheese Filled Crackers, Pepperoni Pizza Beverage Powder, Carbohydrate, Fortified, Lemon Lime Accessory Packet A Spoon Flameless Ration Heater Bag, Hot Beverage Paperboard Sleeve</p> | <p><u>Menu #2</u> Beef, Shredded, in Barbecue Sauce Black Beans in a Seasoned Sauce Cheese Spread, Cheddar, with Jalapeno Peppers Tortillas, Plain Oatmeal Cookie, Plain Beverage Powder, Carbohydrate, Fortified, Orange Barbecue Sauce Accessory Packet C Spoon Flameless Ration Heater Bag, Hot Beverage Paperboard Sleeve Paperboard Insert Card (as applicable)</p> |
| <p><u>Menu #3</u> Chicken, Egg Noodles, and Vegetables, in Sauce Fruit, Wet Pack, Applesauce, with Raspberry Puree Crackers, Plain Peanut Butter, Smooth Jelly, Apple Pan Coated Candy, Disks, Fruit Flavored, Original Beverage Powder, Carbohydrate, Fortified, Tropical Punch Hot Sauce, Extra Hot 4x Accessory Packet A Spoon Flameless Ration Heater Bag, Hot Beverage Paperboard Sleeve Paperboard Insert Card (as applicable)</p> | <p><u>Menu #4</u> Spaghetti with Beef and Sauce Toaster Pastry, Chocolate Chip Peanut Butter, Smooth Snack Bread, Italian Bread Sticks Fruit, Dried Whole Raisins, Seedless Cocoa Beverage Powder, Milk Chocolate Jelly, Grape Accessory Packet B Spoon Flameless Ration Heater Paperboard Sleeve</p> |

TABLE III. Contents - Continued

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|---|--|
| <p><u>Menu #5</u> Chicken Chunks, White, Cooked First Strike Bar, Chocolate Cheese Spread, Cheddar, Plain Tortillas, Plain Toasted Corn Kernels, Barbecue Meat Snack, Sticks, Teriyaki Beverage Powder, Carbohydrate Electrolyte, Fruit Punch Barbecue Sauce Accessory Packet B Spoon Paperboard Insert Card (as applicable) Flameless Ration Heater Paperboard Sleeve</p> | <p><u>Menu #6</u> Beef Taco Santa Fe Style Rice and Beans Cheese Spread, Cheddar, Plain Tortillas, Plain Nut and Fruit Mix, Nuts and Raisins with Pan Coated Chocolate Disks Beverage Bases, Sweetened with Non-nutritive Sweetener, Fortified, Orange Accessory Packet A Spoon Flameless Ration Heater Bag, Hot Beverage Paperboard Sleeve Paperboard Insert Card (as applicable)</p> |
| <p><u>Menu #7</u> Beef Strips in a Savory Tomato Based Sauce Potatoes, Mashed, Garlic Fruit, Dried Cranberries, Sliced Peanut Butter, Smooth Snack Bread, White Wheat Jam, Blackberry Mint Candy, Rings, Peppermint Drink Mix, Flavored Instant Cappuccino, Irish Cream Accessory Packet B Spoon Flameless Ration Heater Paperboard Sleeve Paperboard Insert Card (as applicable)</p> | <p><u>Menu #8</u> Meatballs in Marinara Sauce Cobbler, Cherry Blueberry Chocolate Chip Cookie, Plain Cheese Spread, Cheddar, with Jalapeno Peppers Snack Bread, Italian Bread Sticks Meat Snack, Sticks, Teriyaki Beverage Powder, Carbohydrate Electrolyte, Orange Accessory Packet C Spoon Flameless Ration Heater Bag, Hot Beverage Paperboard Sleeve Paperboard Insert Card (as applicable)</p> |

TABLE III. Contents - Continued

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|---|---|
| <p><u>Menu #9</u> Beef Stew Cake, Pound, <i>Trans</i> Fat Free, Vanilla Cheese Spread, Cheddar, Plain Snack Bread, Multigrain Pan Coated Candy, Disks, Fruit Flavored, Sweet and Sour Beverage Powder, Carbohydrate, Fortified, Lemon-Lime Hot Sauce, Extra Hot 4x Accessory Packet A Spoon Flameless Ration Heater Bag, Hot Beverage Paperboard Sleeve</p> | <p><u>Menu #10</u> Chili and Macaroni Cake, Pound, <i>Trans</i> Fat Free, Lemon Poppy Seed Cheese Spread, Cheddar, with Jalapeno Peppers Crackers, Vegetable Meat Snack, Sticks, Teriyaki Licorice Style Candy, Bite Size, Cherry Beverage Powder, Carbohydrate Electrolyte, Orange Spice, Crushed Red Pepper Accessory Packet A Spoon Flameless Ration Heater Bag, Hot Beverage Paperboard Sleeve</p> |
| <p><u>Menu #11 Vegetarian</u> Vegetable Crumbles with Pasta in Taco Style Sauce Fruit, Wet Pack, Applesauce, Carbohydrate Enhanced First Strike Bar, Apple-Cinnamon Peanut Butter, Chunky/Crunchy Crackers, Plain Jalapeno Cashews Drink Mix, Flavored Instant Cappuccino, French Vanilla Hot Sauce, Chili and Lime Accessory Packet B Spoon Flameless Ration Heater Paperboard Sleeve Paperboard Insert Card (as applicable)</p> | <p><u>Menu #12 Vegetarian</u> Elbow Macaroni in Tomato Sauce Fruit, Wet Pack, Applesauce, with Mango and Peach Puree Peanut Butter, Smooth Jam, Strawberry Pretzels, Sticks, Plain Snack Bread, Wheat Chocolate Protein Drink Powder Hot Sauce, Extra Hot 4x Accessory Packet A Spoon Flameless Ration Heater Bag, Hot Beverage Paperboard Sleeve Paperboard Insert Card (as applicable)</p> |

TABLE III. Contents – Continued

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| <p><u>Menu #13 Vegetarian</u> Cheese Tortellini in Tomato Sauce Dessert Powder, Pudding, Vanilla Peanut Spread, Smooth, Chocolate Crackers, Plain Trail Mix, Recovery Beverage Powder, Carbohydrate Electrolyte, Lemon Lime Hot Sauce, Extra Hot 4x Accessory Packet C Spoon Flameless Ration Heater Bag, Hot Beverage Paperboard Sleeve</p> | <p><u>Menu #14 Vegetarian</u> Creamy Spinach Fettuccine (Egg Noodles, Spinach and Mushrooms in a Cream Sauce) First Strike Bar, Cran-Raspberry Peanut Butter, Smooth Crackers, Plain Pretzels, Nuggets, Honey Mustard and Onion Chocolate Protein Drink Powder Spice, Crushed Red Pepper Accessory Packet A Spoon Flameless Ration Heater Bag, Hot Beverage Paperboard Sleeve</p> |
| <p><u>Menu #15</u> Mexican Style Chicken Stew Fruit, Wet Pack, Mixed Fruit Filled Pretzels, Cheddar Cheese Cheese Spread, Cheddar, with Jalapeno Peppers Crackers, Plain First Strike Bar, Chocolate Cocoa Beverage Powder, Chocolate Hazelnut Spice, Crushed Red Pepper Accessory Packet B Spoon Flameless Ration Heater Paperboard Sleeve Paperboard Insert Card (as applicable)</p> | <p><u>Menu #16</u> Chicken Burrito Bowl (Chicken with Rice, Beans and Vegetables) Trail Mix, Recovery Filled Bakery Item, Cinnamon Bun Tortillas, Plain Cheese Spread, Cheddar, Plain Hot Sauce, Extra Hot 4x Beverage Powder, Carbohydrate, Fortified, Orange Accessory Packet C Spoon Flameless Ration Heater Bag, Hot Beverage Paperboard Sleeve</p> |

TABLE III. Contents – Continued

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| <p><u>Menu #17</u> Pork Sausage Patty, Maple Flavored Muffin Top, Maple, <i>Trans</i> Fat Free Peanut Butter, Smooth Crackers, Plain Smoked Almonds Beverage Powder, Carbohydrate Electrolyte, Grape Syrup, Table, Imitation Maple Accessory Packet A Spoon Flameless Ration Heater Bag, Hot Beverage Paperboard Sleeve</p> | <p><u>Menu #18</u> Beef Ravioli in Meat Sauce Muffin Top, Chocolate Banana Nut, <i>Trans</i> Fat Free Cheese Spread, Cheddar, Plain Snack Bread, Wheat Pan Coated Candy, Disks, Milk Chocolate, Plain Beverage Powder, Carbohydrate, Fortified, Tropical Punch Hot Sauce, Extra Hot 4x Accessory Packet C Spoon Flameless Ration Heater Bag, Hot Beverage Paperboard Sleeve</p> |
| <p><u>Menu #19</u> Beef Patty, Grilled, Jalapeno Pepper Jack Potatoes, Au Gratin Oatmeal Cookie, Chocolate Chunk Cheese Spread, Cheddar, with Bacon Tortillas, Plain Pan Coated Candy, Oval/Round, Milk Chocolate with Peanuts Beverage Bases, Sweetened with Non-nutritive Sweetener, Fortified, Orange Barbecue Sauce Mayonnaise, Fat Free Accessory Packet A Spoon Flameless Ration Heater Bag, Hot Beverage Paperboard Sleeve Paperboard Insert Card (as applicable)</p> | <p><u>Menu #20</u> Hash Brown Potatoes with Bacon, Peppers and Onions Granola with Milk and Blueberries Filled Bakery Item, Apple Turnover Cheese Spread, Cheddar, Plain Crackers, Plain Peanuts, Salted, Dry Roasted Beverage Bases, Sweetened with Non-nutritive Sweetener, Fortified, Orange Accessory Packet A Spoon Flameless Ration Heater Bag, Hot Beverage Paperboard Sleeve</p> |

TABLE III. Contents – Continued

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| <p><u>Menu #21</u> Tuna, Chunk, Light, Lemon Pepper Cake, Pound, <i>Trans</i> Fat Free, Marble Cheese Spread, Cheddar, Plain Tortillas, Plain Baked Snack Crackers, Cheddar Beverage Powder, Carbohydrate, Fortified, Lemon-Lime Pan Coated Candy, Disks, Peanut Butter, Plain Mayonnaise, Fat Free Accessory Packet B Spoon Flameless Ration Heater Paperboard Sleeve</p> | <p><u>Menu #22</u> Beef Goulash (Beef with Brown Rice, Spinach, Carrots, Tomatoes and Smoked Paprika) Fruit, Wet Pack, Applesauce, Carbohydrate Enhanced Peanut Butter, Chunky/Crunchy Jam, Strawberry Snack Bread, White Wheat Sugar Cookies, Patriotic Cocoa Beverage Powder, Milk Chocolate Accessory Packet B Spoon Flameless Ration Heater Paperboard Sleeve Paperboard Insert Card (as applicable)</p> |
| <p><u>Menu #23</u> Pizza Slice, Pepperoni Cobbler, Cherry Blueberry Cheese Spread, Cheddar, Jalapeno Crackers, Vegetable Oatmeal Cookie, Plain Chocolate Protein Drink Powder Accessory Packet A Spoon Flameless Ration Heater Bag, Hot Beverage Paperboard Sleeve Paperboard Insert Card (as applicable)</p> | <p><u>Menu #24</u> Southwest Style Beef and Black Beans with Sauce Apple Pieces in Spiced Sauce Cake, Pound, <i>Trans</i> Fat Free, Applesauce Meat Snack, Sticks, Teriyaki Cheese Spread, Cheddar, Plain Tortillas, Chipotle Drink Mix, Flavored Instant Cappuccino, Mocha Accessory Packet B Spoon Flameless Ration Heater Paperboard Sleeve Paperboard Insert Card (as applicable)</p> |

SECTION D

D-1 PACKAGING

A. Components.

(1) Subassembly/accessory packet pouch. The subassembly/accessory packet pouch 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 the filled and sealed accessory packet. 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 seal width to less than 1/16 inch when tested for internal pressure resistance. The pouch shall be made from polymeric film 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 g/m²/24hrs 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 Transmission of Materials or Method 3030 of MIL-STD-3010, Test Procedures for Packaging Materials and Containers. 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 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 approved for food contact. Polyethylene shall have a minimum thickness of 0.010 inch. Inside dimensions of the bag shall not exceed 8-1/2 inches by 13-1/4 inches. The color of the bag shall conform to number 20219, 30219, 30227, 30279, 30313, 30324 or 30450 of FED-STD-595, Colors Used in Government Procurement. 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.

(4) Paperboard sleeve. The paperboard sleeve shall be constructed in accordance with figure 6 of MIL-PRF-44073. When folded along the score lines located at the bottom of the sleeve, an open-ended carton shall result. Each sleeve shall be securely sealed along the glue joint. The seal shall have a bond strength greater than the fiber tear of the paperboard. The color of the sleeve shall be natural kraft, tan or dull gray.

(5) Paperboard insert card. The paperboard insert card shall not exceed 4 inches in width by 6 inches in length. The color of the insert card shall be natural kraft, tan or dull gray. The paperboard insert card shall contain food product information in accordance with Section D-2 of the appropriate food product document(s).

B. Assembly.

(1) Subassembly/accessory packet assembly. One of each applicable component as described in table II shall be inserted in an accessory packet pouch. If a subassembly is used, additional components may also be inserted in the packet. 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 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 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. 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 bag. Each meal bag shall be correctly and legibly labeled on at least one face with permanent ink or other dark contrasting color with the information contained in accordance with Figures 1, 2 or 3, as applicable. The label shall cite the correct menu number, name of entrée, French translation of entrée name (see table V) and name and address of assembler. Menus 1-4 and 13-16 shall be printed in accordance with Design 1 (Figure 1). Menus 5-8 and 17-20 shall be printed in accordance with Design 2 (Figure 2). Menus 9-12 and 21-24 shall

be printed in accordance with Design 3 (Figure 3). The French translation printed on the meal bag, in accordance with the design specified above, shall be as specified in table V.

TABLE IV. French Translation of Entrée Name

| Entrée Name | French Translation |
|--|---|
| Beef Goulash (Beef with Brown Rice, Spinach, Carrots, Tomatoes and Smoked Paprika) | Goulash de boeuf (Boeuf avec riz brun, épinards, carottes, tomates et paprika fumé) |
| Beef Patty, Grilled, Jalapeno Pepper Jack | Steak haché au fromage pimenté |
| Beef Ravioli in Meat Sauce | Ravioli au bœuf, sauce à la viande |
| Beef, Shredded, in Barbecue Sauce | Émincé de bœuf, sauce barbecue |
| Beef Stew | Ragoût de bœuf |
| Beef Strips in a Savory Tomato Based Sauce | Lanières de boeuf en sauce tomate |
| Beef Taco | Taco au bœuf |
| Cheese Tortellini in Tomato Sauce | Tortellini au fromage, sauce tomate |
| Chicken, Egg Noodles, and Vegetables, in Sauce | Poulet, nouilles et légumes en sauce |
| Chicken Burrito Bowl (Chicken with Rice, Beans and Vegetables) | Burrito de poulet bol |
| Chicken Chunks, White, Cooked | Dés de poulet |
| Chili and Macaroni | Chili et Macaroni |
| Chili with Beans | Chili aux haricots rouges |
| Creamy Spinach Fettuccine (Egg Noodles, Spinach, and Mushrooms in a Cream Sauce) | Fettucini aux épinards et champignons à la Crème |
| Elbow Macaroni in Tomato Sauce | Couquillettes a la sauce tomate |
| Hash Brown Potatoes with Bacon, Peppers and Onions | Potée de pommes de terres râpées au bacon, oignons et poivrons |
| Meatballs in Marinara Sauce | Boulettes de viande, sauce Marinara |
| Mexican Style Chicken Stew | Ragoût de poulet à la mexicaine |
| Pizza Slice, Pepperoni | Tranche de pizza, Pepperoni |
| Pork Sausage Patty, Maple Flavored | Saucisse de porc, saveur d'érable |
| Southwest Style Beef and Black Beans with Sauce | Bœuf à la façon "Southwest" aux haricots noirs |
| Spaghetti with Beef and Sauce | Spaghetti en sauce à la viande de bœuf |
| Tuna, Chunk, Light, Lemon Pepper | Miettes de thon au naturel au poivre citronné |
| Vegetable Crumbles with Pasta in Taco Style Sauce | Crumbles de legumes et pâtes, sauce façon Taco |

C. Paperboard Sleeve. Each paperboard sleeve shall be correctly and legibly labeled on at least one face with permanent ink or other dark contrasting color with Military Nutrition Information Graphics in accordance with Figures 4, 5 or 6, as applicable. The Military Nutrition Information Graphics shall be clearly printed with permanent black ink in an area

no smaller than 4 inches by 5-1/4 inches. The label shall cite the correct Military Nutrition Information Graphics (NOTE: Graphic files are available from the NSRDEC upon request). Menus 1-4 and 13-16 shall be printed in accordance with Macronutrients Graphics (Figure 4). Menus 6-8 and 17-20 shall be printed in accordance with Recovery Nutrition Graphics (Figure 5). Menus 9-12 and 22-24 shall be printed in accordance with Fortification Table Graphics (Figure 6).

D-3 PACKING

A. Packing. Twelve meals shall be packed in a fiberboard box. Case “A” shall contain meals 1 through 12, and case “B” shall contain meals 13 through 24. 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. [US Army Research, Development and 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 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 15-5/8 inches in length, 9-1/8 inches in width and 9-9/16 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. Each load shall have 24 “A” cases and 24 “B” cases. 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

Case A or B, as applicable

U.S. GOVERNMENT PROPERTY – COMMERCIAL RESALE IS UNLAWFUL

NOTE: WATER ACTIVATED Flameless Ration Heater, NSN 8970-01-321-9153,
supplied in each MRE bag when required

(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.

(3) One side panel of the shipping container shall be marked “MEAL, READY-TO-EAT, INDIVIDUAL” in letters not less than 1-1/4 inches high with the French translation “(Repas, Prêt-à-Consommer, Individuel)” marked underneath in letters not less than 1 inch. 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. In addition, if applicable, each unit load shall be provided with a Safety Data Sheet (SDS), in accordance with MIL-R-44398. The SDS shall be packaged and attached to one side of the unit load when applicable. A copy of the SDS shall be included with the shipping papers and a copy shall also be placed in the vehicle manifest.



Peelable Seal ↑

Meal, Ready-to-Eat, Individual

Warfighter Recommended,
Warfighter Tested,
Warfighter Approved

MIRTE

MENU 18 MEATBALLS IN MARINARA SAUCE

(BOULETTES DE VIANDE,
SAUCE MARINARA)

**THE WORNICK COMPANY
CINCINNATI, OHIO 45242**

**U.S. GOVERNMENT PROPERTY
COMMERCIAL RESALE IS UNLAWFUL**

**FLAMELESS RATION HEATERS ARE PROHIBITED ON COMMERCIAL
AIRLINES UNLESS SEALED IN ORIGINAL MEAL BAG**

FIGURE 1. Example of Design 1 of Meal Bag Graphics

Peelable Seal ↑



MENU 18
Meatballs in
Marinara Sauce
(BOULETTES DE VIANDE,
SAUCE MARINARA)

Warfighter Recommended, Warfighter Tested, Warfighter Approved

SOPAKCO INC.
MULLINS, SC 29574-1047
U.S. GOVERNMENT PROPERTY
COMMERCIAL RESALE IS UNLAWFUL

**FLAMELESS RATION HEATERS ARE PROHIBITED ON COMMERCIAL
AIRLINES UNLESS SEALED IN ORIGINAL MEAL BAG**

FIGURE 2. Example of Design 2 of Meal Bag Graphics

Peelable Seal ↑



MENU 18
MEATBALLS
IN MARINARA SAUCE
(BOULETTES DE VIANDE, SAUCE MARINARA)

MRE
MEAL, READY-TO-EAT, INDIVIDUAL

**Warfighter Recommended,
Warfighter Tested,
Warfighter Approved**

**AMERIQUAL PACKAGING
EVANSVILLE, IN 47710**

**U.S. GOVERNMENT PROPERTY
COMMERCIAL RESALE IS UNLAWFUL**

**FLAMELESS RATION HEATERS ARE PROHIBITED ON COMMERCIAL
AIRLINES UNLESS SEALED IN ORIGINAL MEAL BAG**

FIGURE 3. Example of Design 3 of Meal Bag Graphics

| CARBOHYDRATES | | |
|---|--|--|
| <ul style="list-style-type: none"> • Main fuel source for muscle during exercise • Higher activity level = higher carbohydrate needs • Recommended daily intake: ~3 grams per pound of body weight (or 500 grams of carbohydrate per day for 165 lb Warfighter) | <p>GOOD SOURCES</p> <ul style="list-style-type: none"> • Fruits, Potatoes, Rice, Pasta, Bakery, and Beverages | <p>MRE FOOD SOURCES</p> <ul style="list-style-type: none"> • Dried Fruit: 40 grams • Beverages: 34 grams • Crackers/Tortilla/Snack Bread: 30–38 grams |
| PROTEIN | | |
| <ul style="list-style-type: none"> • Essential for proper refueling and recovery • Protein recommendations are generally met through diet alone, without the need for supplementation • Recommended daily intake: ~0.7 grams per pound of body weight (or 115 grams of protein per day for 165lb Warfighter) | <p>GOOD SOURCES</p> <ul style="list-style-type: none"> • Beef, Poultry, Pork, Seafood, Nuts, Dairy, Eggs | <p>MRE FOOD SOURCES</p> <ul style="list-style-type: none"> • Trail Mix: 10–14 grams • Peanut Butter: 6 grams • Chocolate Protein Drink: 12 grams • Main Meal: 15–30 grams • Beef Snacks: 8 grams |
| FAT | | |
| <ul style="list-style-type: none"> • Fat is the most energy dense nutrient we consume and is essential for proper fueling • Stored fat is used as energy during moderate and high intensity exercise • Fat helps our body to use certain vitamins like A, D, E, and K • Recommended daily intake: 20–35% of calories from Fat (2500 calories= 56–98 grams of fat) | <p>GOOD SOURCES</p> <ul style="list-style-type: none"> • Fatty Fish, Vegetable Oils, Nuts, Almonds, Olives, and Avocados | <p>MRE FOOD SOURCES</p> <ul style="list-style-type: none"> • Nuts • Peanut Butter • Trail Mix |

FIGURE 4. Example of Macronutrients Graphics for Paperboard Sleeve

THE 5 R'S FOR OPTIMAL RECOVERY

| |
|--|
| 1 REPLENISH ENERGY STORES OFTEN |
| 2 REPAIR MUSCLES |
| 3 REPLACE FLUIDS AND ELECTROLYTES |
| 4 REFUEL REGULARLY |
| 5 REST AND RECOVER FOR THE NEXT MISSION |

TIMING IS CRITICAL

EAT AND DRINK WITHIN 30-60 MINUTES AFTER PHYSICAL ACTIVITY

| | |
|--|--|
| YOUR RECOVERY MEAL | CARBOHYDRATE ~ 80-120 grams |
| | PROTEIN ~15-25 grams of protein |
| | FLUIDS ~16-32 ounces |
| GOOD MRE SOURCES | Recovery Trail Mix and Pudding: 90 grams carbohydrate and 17grams protein |
| | Chocolate Protein Drink, Snack Bread and Cheese Spread: 84 grams carbohydrate and 19grams protein |
| | Chocolate Protein Drink, Peanut Butter and Crackers: 90 grams carbohydrate and 25 grams protein |
| PLAN AHEAD, CARRY RATION COMPONENT(S) WITH YOU FOR QUICK RECOVERY | |

FIGURE 5. Example of Recovery Nutrition Graphics for Paperboard Sleeve

- Adding extra vitamins and minerals to foods maximizes performance.
- The “X” in the table below shows which vitamins and/or minerals have been added to each component. If you are unable to consume all components in your ration, choose the entrée, fortified ration components, and some of each component to obtain a balance of nutrients.

| COMPONENT | VITAMINS | | | | | | | | | | MINERALS | | |
|--------------------------|----------|----|----|----|----|-----|---|---|---|------------|----------|---------|------|
| | A | B1 | B2 | B3 | B6 | B12 | C | D | E | Folic Acid | K | Calcium | Zinc |
| Chocolate Protein Drink | | | | | | | X | X | | | | | |
| Beverages/Pouches: Fruit | | | | | | | X | | | | | | |
| Beverage, Sugar Free | | | | | | | X | | | | | X | |
| Cheese Spread | X | | | | | | | X | | | | X | |
| Peanut Butter | X | | | | | | X | | | | | | |
| Crackers/Snack Bread | | | | | | | | | | | | X | |
| Pudding | | | | | | | | X | | | | | X |
| First Strike Bars | | X | X | X | X | X | X | X | X | X | X | | X |

MRE menus are designed to meet the unique nutritional needs of Warfighters. For detailed nutrition on Combat Rations visit <http://prc-online.org/comrad/>

FIGURE 6. Example of Fortification Table Graphics for Paperboard Sleeve

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) Pouch 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.

| <u>Requirement</u> | <u>Requirement paragraph</u> | <u>Test procedure</u> |
|--|------------------------------|---|
| Thickness of meal bag | D-1,A(3) | ASTM D2103 <u>1/</u> |
| Color of meal bag and subassembly/accessory packet | D-1,A(1) and D-1,A(3) | 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 MIL-STD-3010 <u>5/</u> |

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 and Containers

(2) Subassembly/accessory packet examination. The filled and sealed packets shall be examined 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 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. 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. |
| | 205 | Pouch not sealed on four sides. |

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) Subassembly/accessory packet contents examination. The filled and sealed packets shall be examined for the defects listed in table VII (this examination may be performed on the preformed packets 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.

TABLE VI. 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.

(4) Assembled meal bag examination. The filled and sealed meal bags shall be inspected for the defects listed in table VIII. 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.

TABLE VII. 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 or swollen pouch of thermostabilized item. |
| 3 | | | Tear or hole or puncture in thermostabilized pouch. |
| | 101 | | Menu component missing or incorrect assortment for menu. <u>1/</u> |
| | 102 | | Meal bag not clean or outer packaging of its contents not clean. <u>2/</u> |
| | 103 | | Foreign odor. |
| | 104 | | Labeling missing or incorrect or illegible. |
| | 105 | | Swollen peanut butter or jelly or jam pouch. |
| | 106 | | Tear or hole or open seal in component packages. |
| | 107 | | Crushed or broken component. <u>3/</u> |
| | 108 | | Broken spoon. |
| | 109 | | Mints not packaged in barrier pouch. |
| | 110 | | Bond strength of paperboard sleeve glue joint is not greater than fiber strength of paperboard sleeve. <u>4/</u> |
| | 111 | | Dimensions of paperboard sleeve not as specified. <u>4</u> |
| | | 201 | Tear or hole or open seal or split in meal bag. |
| | | 202 | Tear or hole or open seal in subassembly/accessory packet. |
| | | 203 | Inverted "V" shaped peel indicator missing or not located as specified. |

TABLE VII. Assembled meal bag defects - Continued

| Category | | Defect |
|-----------------|--------------|--|
| <u>Critical</u> | <u>Major</u> | <u>Minor</u> |
| | | 204 Labeling graphics of meal bag not correct. |
| | | 205 Labeling graphics of paperboard sleeve not correct. |
| | | 206 Color of paperboard sleeve or paperboard insert card not as specified. <u>4/</u> |
| | | 207 Paperboard sleeve does not form an open-ended carton when folded along the bottom score lines. <u>4/</u> |
| | | 208 Dimensions of paperboard insert card not as specified. <u>4/</u> |

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:

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/ A CoC may be accepted as evidence of conformance.

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 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, 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 individual 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 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 rate of 1-2 pounds 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 VI, 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. 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 classified as a major defect and shall be cause for rejection of the lot.

c. 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 individual 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 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 rate of 1-2 pounds 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 VI, 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.

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 meal bag and unfilled preformed subassembly/accessory packet pouch 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 (3). When deemed necessary by the government inspector, testing of the unfilled preformed pouches for seal strength shall be as specified in E,D(1)a.

E. Packing.

(1) Shipping container and marking examination. The filled and sealed shipping containers shall be examined for the defects listed in table IX. 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 VIII. 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 | | Missing meal. <u>2/</u> |
| 105 | | Not one of each menu specified. |
| | 201 | Time-temperature indicator missing or not centrally located on panel. |
| | 202 | Time-temperature indicator 1/4-inch quiet zone not maintained. |
| | 203 | Meal bag graphics do not coincide with specified design. |

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 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 |

DEPARTMENT OF DEFENSE SPECIFICATIONS

| | |
|---------------|--|
| MIL-PRF-32176 | Bag, Hot Beverage |
| MIL-R-44398B | Ration Supplement, Flameless Ration Heater (FRH) |
| MIL-STD-3010 | Test Procedures for Packaging Materials and Containers |
| MIL-PRF-44073 | Packaging of Food in Flexible Pouches |

NON-GOVERNMENTAL STANDARDS

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

| | |
|---------------|---|
| ANSI/ASQ Z1.4 | Sampling Procedures and Tables for Inspection by Attributes |
|---------------|---|

ASTM INTERNATIONAL 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 |

| | |
|-------------------|--|
| 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 |
| SAE INTERNATIONAL | www.sae.org |
| SAE AMS-STD-595 | Colors Used in Government Procurement |

For DLA Troop Support Website Posting

RDNS-SEC-EM

3 January 2019

TO: Defense Logistics Agency (DLA) - Troop Support – Subsistence DSCP-FTRE

SUBJECT: ES19-010 (DSCP-SS-19-00372); Document change; Technical inquiry and resulting document change; initiated by Natick as a result of a Joint Military Services request to add the flameless ration heater to Menus 5 and 21, ACR-M-039, Meal, Ready-to-Eat (MRE), Assembly Requirements; contract number SPE3S1-16-R-0008.

1. Natick initiated an Engineering Support Case as a result of a Joint Military Services request to include a flameless ration heater in Menus 5 and 21 of ACR-M-039, Meal, Ready-to-Eat (MRE), Assembly Requirements.
2. On 3 December 2018, Natick received feedback from the Marine Corps, that the (unheated) chicken chunk entrée is unacceptable in cold weather conditions in Norway when extra flameless ration heaters are unavailable.
3. As a result, Natick reached out to the Army, Air Force and Navy Representatives to determine if they concur with adding a flameless ration heater to Menu 5, chicken chunks entrée. During discussions, the Services decided that all MRE entrée Menus should contain a flameless ration heater. Therefore, a flameless ration heater will also be added to Menu 21, tuna, lemon pepper.
4. The Service Representatives were contacted and their replies were:
 - Army: Concurs with Natick
 - Marine Corps: Concurs with Natick
 - Navy: Concurs with Natick
 - Air Force: Concurs with Natick
5. Natick submits the following changes to the subject document for all current, pending and future procurements until the document is formally amended or revised.
 - a. Page 9, Table III. Contents, Menu #5, after “Spoon” delete “Paperboard Insert Card (as applicable)”, insert “Flameless Ration Heater” and “Paperboard Sleeve”.

b. Page 13, Table III. Contents, Menu #21, after “Spoon” insert “Flameless Ration Heater” and “Paperboard Sleeve”.

6. Attached is Change 01, ACR-M-039, Meal, Ready-to-Eat (MRE), Assembly Requirements, dated 3 January 2019, with the changes highlighted.