

SECTION C

The Close Combat Assault Ration (CCAR) provides an individual ration during short duration, high intensity missions.

C-1 ITEM DESCRIPTION

ACR-CC-01, CLOSE COMBAT ASSAULT RATION (CCAR), ASSEMBLY REQUIREMENTS

C-2 ASSEMBLY REQUIREMENTS

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

TABLE I. Components

Component	Reference
<u>Entrées</u>	
Beef Stew, High Energy	PCR-B-020B, Type II
Chicken Burrito Bowl (Chicken with Brown Rice, Beans, and Vegetables), High Energy	PCR-C-088A, Type II
Spaghetti with Beef and Sauce	PCR-S-002A
Tuna, Flexible Pouch, Chunk	A-A-20155D, Type B, Form I,
Light, Water,	Color a, Packing Media 1,
Lemon Pepper, Regular (no more than 1.5 percent salt)	Flavor 1, Salt/Sodium Level (a)
<u>Starches and Soups</u>	
Bread, Mini-Loaf, Sliced	PCR-B-064
Whole Wheat	Type I
Tortillas, 2 Count Individual Serving Package	PCR-T-008B, Type I
Plain	Flavor 1
<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
<u>Desserts and Snacks</u>	
Cheese Spread, Cheddar, Fortified, Plain	PCR-C-039A, Type I

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TABLE I. Components - Continued

Component	Reference
Cookies, Regular, Individual Serving Package, Crisp Oatmeal Cookies, Plain	A-A-20295D, Type I, Class 1, Bake Type a Style I, Flavor 1
Crackers, Fortified Plain	PCR-C-037A Type I
Dessert Bar Chocolate Banana Nut Toffee	PCR-D-004A Flavor 3 Flavor 4
Dessert Spread Apple Pie	PCR-D-005 Flavor 1
Energy Gel Raspberry Chocolate Mocha	PCR-E-018A Flavor 1 Flavor 2 Flavor 3
Granola Bars (With or Without Nuts) and Nut Bars Nuts (Peanuts and/or Tree Nuts), Uncoated Conventional Almond and Coconut Maple Glazed Pecan and Sea Salt	A-A-20245B/PKG&QAP Base Type II, Coating A Agricultural Practice a Flavor 1 Flavor 2
High Energy Bar Coconut Almond	PCR-H-015 Flavor 1
Jelly, Fruit, Standardized, Single, Regular U.S. Grade A Grape	A-A-20078D, Type I, Style 1 Finished Product Quality 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-003B Type II
Nut Butters and Nut Spreads Manufactured from Dry Roasted Nuts, Regular, Stabilized Fortified, Salted, Conventional Peanut Butter, Smooth, Plain Peanut Spread, Smooth, Chocolate	A-A-20328C Form (a), Class A, Type a, Fortification ii, Seasoning (a), Agricultural Practice (1) Style I, Texture 1, Flavor (1) Style II, Texture 1, Flavor (2)
Nuts, Shelled, Roasted Conventional, Package type 1	A-A-20164E Agricultural Practices (1), Individual Serving Pouch

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TABLE I. Components - Continued

Component	Reference
Cashews, Halves (Splits), Flavored (Jalapeno), 38.0 g	Type III, Size 2, Style c, Package Size c
Almonds (Unblanched), Flavored (Smoke), 38.0 g	Type VI, Style c, Package Size c
Trail Mix, Recovery	PCR-T-014A
Trail Mix, Recovery with Pretzels	Type I
Recovery Bar, Shelf Stable	PCR-R-016
Salted Caramel Marshmallow Crisp	Flavor I
Snack Foods	A-A-20195E
Cheese Filled Crackers, Pepperoni Pizza	Type VII, Flavor 2
Toaster Pastries, Regular, Not Fortified	A-A-20211C, Type I, Fortific. b
Enriched Wheat Flour, Conventional	Grain Comp. (1), Agric. Practice i
Single Serving Packet, Frosted (Icing)	Servings (a), Style B
Chocolate Chip, Swirled and/or Drizzled Icing	Flavor 12, Icing Option (c)
<u>Candy</u>	
Candy and Chocolate Confections	A-A-20177F
Pan Coated Candy	Type IV
Disks, Fruit Flavored, Original	Style A, Flavor 2, Flavor Style a
Licorice Style Candy, Bite Size, Cherry	Type V, Style B, Flavor 1
<u>Beverages</u>	
Beverage Powder, Carbohydrate Electrolyte	PCR-B-013B
Fin Seal Pouch	Design D
Grape	Flavor II
Lemon-Lime	Flavor III
Chocolate Protein Drink Powder	PCR-C-082B
Chocolate	Flavor I
High Energy Beverage	PCR-H-017
Cookies and Cream	Flavor 1
<u>Other Items</u>	
Chewing Gum	A-A-20175E
Tablet, Large, or Disk, Regular,	Type I, Size C, or Type VII, Size B,
With Caffeine, Regular, Peppermint	Style (2), Class 1, Package J, Flavor a
Fork, Knife and Spoon, Picnic (Plastic)	A-A-3109B
High Impact, Spoon, MRE, 7-inch (Brown)	Type IV, Item 13
Hand and Body Wipes, Pre-Moistened,	A-A-461C
Hand Wipe, Non-antibacterial	Type I, Style 2
Individually Wrapped, Single Pack	Packaging a
Paperboard Insert Card	MIL-PRF-44073J
Re-closeable Interlocking Plastic Bag <u>1</u> /	

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TABLE I. Components - Continued

Component	Reference
Spices and Spice Blends	A-A-20001C
Conventional	Agricultural Practice (i)
Spice Blends, Picante Seasoning	Type II, Blend K
Toilet Tissue, Institutional, Folded,	A-A-59594A, Style II,
One Ply, Perforated, 4-1/2" by 4-1/2"	Type A, Class 1, Sheet size b

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

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

TABLE II. Contents

<u>Menu #1</u>	<u>Menu #2</u>
Spaghetti with Beef and Sauce	Chicken Burrito Bowl, High Energy
Meat Snacks, Sticks, Teriyaki	Tuna, Chunk Light, Lemon Pepper
Dried Fruit, Cranberries	Dessert Bar, Chocolate Banana Nut
Nut Bar, Maple Glazed Pecan and Sea Salt	Meat Snacks, Sticks, Teriyaki
High Energy Bar, Coconut Almond	Dessert Spread, Apple Pie
Recovery Trail Mix, Pretzels	Nut Bar, Almond and Coconut
Toaster Pastry, Chocolate Chip	Nut and Raisin Mix with Pan Coated Chocolate
Nuts, Almonds, Smoke	Disks
Chocolate Protein Drink, Chocolate	Licorice Style Candy, Bite Size, Cherry
Peanut Butter, Smooth	Tortillas, Plain
Jelly, Grape	Cheese Spread, Cheddar, Plain
Bread, Mini-Loaf, Sliced, Whole Wheat	Cookie, Oatmeal, Plain
Energy Gel, Raspberry	Energy Gel, Raspberry
Spice Blends, Picante Seasoning	Energy Gel, Chocolate
Chewing Gum, With Caffeine, Peppermint	Beverage Powder, Carbohydrate Electrolyte,
Toilet Tissue	Lemon-Lime
Hand Wipe (2)	Spice Blends, Picante Seasoning
Insert Card	Chewing Gum, With Caffeine, Peppermint
Re-closeable Interlocking Plastic Bag	Spoon
	Toilet Tissue
	Hand Wipe (2)
	Insert Card
	Re-closeable Interlocking Plastic Bag

TABLE II. Contents - Continued

<u>Menu #3</u>
Beef Stew, High Energy
High Energy Beverage, Cookies and Cream
Recovery Bar, Salted Caramel Marshmallow
Crisp
Dessert Bar, Toffee
Meat Snacks, Sticks, Teriyaki
Cheese Filled Crackers, Pepperoni Pizza
Pan Coated Candy, Fruit Flavored Disks,
Original
Toaster Pastry, Chocolate Chip
Crackers, Plain
Peanut Spread, Chocolate
Nuts, Cashews, Jalapeno
Spice Blend, Picante Seasoning
Beverage Powder, Carbohydrate Electrolyte,
Grape
Energy Gel, Mocha
Chewing Gum, With Caffeine, Peppermint
Toilet Tissue
Hand Wipe (2)
Insert Card
Re-closeable Interlocking Plastic Bag

SECTION D

D-1 PACKAGING

A. Components.

(1) 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.

(2) Meal pouch. The horizontal form-fill-seal meal pouch shall consist of a formed tray-shaped body with a flat sheet, heat sealable cover. The tray-shaped body and flat cover shall be sealed and free of wrinkles, pleats, ripples, or creases. The material shall show no evidence of delamination, degradation, or foreign odor when heat sealed or fabricated into pouches. The material shall be suitably formulated for food packaging and shall not impart any odor or flavor to the product. The formed tray-shaped body and flat sheet, heat sealable

cover shall be clear. The tray shaped body shall be of sufficient thickness and strength to contain the meal components without tearing or spillage of meal contents throughout assembly, packing and distribution.

(3) 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) Meal pouch assembly. The tray-shaped body shall be formed by drawing the flexible laminate material into a shaped cavity. The flat cover shall be in the form of a flat sheet of the barrier material taken from roll stock. One of each applicable component for each meal as described in table II shall be inserted into the tray-shaped body and the flat cover applied by a heat seal not less than 1/8 inch wide. The 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 6 pounds per inch of width and no individual specimen shall have a seal strength of less than 5 pounds per inch of width. The maximum outside dimensions of the filled and sealed meal pouch shall be not greater than 7 inches wide by 11 inches long. A tear nick, notch, or 1/8 inch (3.175 mm) zig-zag cut serration shall be provided to facilitate opening across the 7 inch width of the filled and sealed meal pouch. The filled and sealed meal pouch shall not show any evidence of material degradation, stress cracking, delamination or foreign odor.

D-2 LABELING

A. Meal pouch. Each horizontal form-fill-seal meal pouch shall be correctly and legibly labeled with at least one complete graphic, but no more than two partial graphics, printed in a continuous format on the flat cover with permanent ink or other dark contrasting color with the information contained in accordance with figure 1. (NOTE: Graphic files are available from the Combat Capabilities Development Command (DEVCOM) Soldier Center (FCDD-SCD-SCR) upon request). 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. Example of Meal Pouch Graphics

The following information shall also be printed on the pouch:

Contractor's name and address

Appropriate menu number ~~and contents~~ and name of entrée:

MENU 1	SPAGHETTI WITH BEEF AND SAUCE
MENU 2	CHICKEN BURRITO BOWL
MENU 3	BEEF STEW

D-3 PACKING

A. Packing. Ten meals, four each of menu 1 and three each of menus 2 and 3, 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. [DEVCOM Soldier 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 not greater than 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

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(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 "CLOSE COMBAT ASSAULT 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)".

(4) One side of the top flap of the shipping container shall be marked with the contents of each menu. Labels or printing directly on the flap of the box shall not exceed 2-1/2 by 8 inches.

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) Assembled meal pouch examination. The filled and sealed horizontal form-fill seal meal pouches shall be inspected for the defects listed in table III. The lot size shall be expressed in pouches. The sample unit shall be one pouch. The inspection level shall be S-4 and the acceptable quality limit (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 III. Assembled meal pouch 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		Seal width is less than 1/16 inch. <u>1/</u>
	102		Menu component missing or incorrect assortment for menu. <u>2/</u>
	103		Meal pouch not clean or outer packaging of its contents not clean. <u>3/</u>
	104		Foreign odor.
	105		Labeling missing or incorrect or illegible.
	106		Swollen peanut butter or jelly or energy gel or dessert spread pouch.
	107		Tear or hole or open seal in component packages.
	108		Crushed or broken component. <u>4/</u>
	109		Broken spoon.
	110		Color of meal pouch not as specified.
	201		Meal pouch tear nick, notch, or 1/8 inch (3.175 mm) zig-zag cut missing.
	202		Tear or hole or open seal or split in meal pouch.
	203		Labeling graphics of meal pouch not correct.
	204		Color of paperboard insert card not as specified. <u>5/</u>

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TABLE III. Assembled meal pouch defects - Continued

Category			Defect
<u>Critical</u>	<u>Major</u>	<u>Minor</u>	
		205	Dimensions of paperboard insert card not as specified. <u>5/</u>

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

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

3/ 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.

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

5/ A CoC may be accepted as evidence of conformance.

D. Methods of inspection.

(1) Meal pouch closure testing. The closure seals of the meal pouches shall be tested for seal strength in accordance with internal pressure testing requirements in this paragraph. The lot size shall be expressed in pouches. The sample unit shall be one pouch. The sample size shall be the number of pouches indicated by inspection level S-1. The filled and sealed meal pouches shall be inserted into a vacuum chamber (bell jar wet or dry) for 30 seconds at 15 inches of mercury vacuum. The vacuum 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 burst of the seal or movement in the seal that reduces the seal width to less than 1/16 inch is considered a seal failure and shall be cause for rejection of the lot.

E. Packing.

(1) Shipping container and marking examination. The filled and sealed shipping containers shall be examined for the defects listed in table IV. The lot size shall be expressed

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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 IV. 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 ten meals per case. <u>2/</u>
105		Not four each of menu 1 or not three each of menus 2 and 3 packed into a fiberboard box.
	201	Time-temperature indicator missing or not centrally located on panel.
	202	Time-temperature indicator 1/4-inch quiet zone not maintained.
	203	Meal pouch graphics not as specified.

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 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 SPECIFICATION

MIL-PRF-44073J	Packaging of Food in Flexible Pouches
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(Copies of this document are available from <https://quicksearch.dla.mil/qsSearch.aspx>)

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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ASTM INTERNATIONAL www.astm.org

D1974/D1974M	Standard Practice for Methods of Closing, Sealing, and Reinforcing Fiberboard Boxes
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