SECTION C

This document covers thermostabilized eggs with cheese and bacon pieces packaged in a polymeric tray for use by the Department of Defense as a component of operational rations.

C-1 ITEM DESCRIPTION

PCR-E-007, EGGS WITH CHEESE AND BACON PIECES, PACKAGED IN A POLYMERIC TRAY, SHELF STABLE

C-2 PERFORMANCE REQUIREMENTS

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

B. Commercial sterility. The packaged food shall be processed until commercially sterile. Thermally processed product shall be free of swelling or microbial activity when tested in accordance with section E-5, B, (1) of this Performance-based Contract Requirements document.

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

D. Appearance.

(1) General. The product shall be eggs with cheese and cured, smoked cooked bacon pieces uniformly distributed throughout the product. The packaged food shall be free from foreign materials.

(2) Eggs. The color of the finished product shall be only slightly darker than a typical yellow cooked egg color. The finished product shall be practically free of starch lumps, air pockets or void areas.

(3) Bacon. The cured, smoked cooked bacon pieces shall have a cooked bacon color. The bacon shall be pieces typically produced within the range cited below:

U.S. Standard series Sieve	Approximate percentage retained on
1/4 inch	49.0
No. 4	23.0
No. 8	24.0

E. Odor and flavor. The packaged food shall have an odor and flavor of eggs with cheese and cured, smoked cooked bacon pieces. The packaged food shall be free from foreign odors and flavors.

F. Texture.

(1) Egg. The egg product shall be moist, moderately soft, and shall not be rubbery.

(2) Bacon. The cured, smoked cooked bacon pieces shall be moist and tender.

G. Net Weight. The average net weight shall be not less than 94 ounces. No individual polymeric tray shall have a net weight of less than 92 ounces.

H. Free liquid weight. Free liquid weight in an individual tray shall be not more than 3.0 ounces.

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

J. Analytical requirements.

(1) Protein content. The protein content shall be not less than ~~11.0~~ 10.0 percent.

(2) Fat content. The fat content shall be not greater than 21.0 percent.

(3) Salt content. The salt content shall be not less than 1.0 percent and not greater than 1.5 percent.

C-3 MISCELLANEOUS INFORMATION

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

A. Ingredients/formulation. Ingredients and formulation percentages for the eggs with cheese and bacon pieces may be as follows:

Ingredients	Percent by weight
Liquid or frozen whole eggs	43.000
Water	25.115
Cured, smoked cooked bacon pieces	16.000
Vegetable oil	7.000
Uncolored dehydrated cheddar cheese	5.000
Modified waxy maize pre-gelatinized instant starch	3.750
Ground white pepper	0.080
Citric acid	0.050
Dry or liquid annatto color (15% norbixen)	0.005

SECTION D

D-1 PACKAGING

A. Preservation. Product shall be filled into polymeric trays and the trays with protective sleeves shall conform to the requirements of section 3 of MIL-PRF-32004, Packaging of Food in Polymeric Trays. Verification testing and inspection of trays, lids and sleeves shall be in accordance with Section 4 of MIL-PRF-32004 and the Quality Assurance Provisions of Section E of this Performance-based Contract Requirements document.

B. Polymeric tray closure. The filled, sealed, and processed tray shall be securely closed.

D-2 LABELING

A. Polymeric tray body. The polymeric tray body shall be clearly printed or stamped, in a manner that does not damage the tray, with permanent ink of any contrasting color, which is free of carcinogenic elements. One end of the polymeric tray (see figure 1 of MIL-PRF-32004) shall be marked with the product name and number of portions. If the tray body end markings are not readily legible in low light conditions, a small, easily legible label shall be applied, but not over any existing tray markings. All other markings may be applied along the tray body side. To avoid erroneous marking of trays, the product name, lot number and filling equipment number shall be applied prior to processing. Additional tray marking may be applied before or after processing. 1/

Tray body markings shall include:

(1) Product name. Commonly used abbreviations may be used when authorized by the inspection agency.

(2) Tray code includes: 2/
Lot Number
Filling equipment identification number
Retort identification number
Retort cook number

1/ As an alternate method, tray body markings may be clearly printed or stamped onto the polymeric tray lid prior to processing, in a manner that does not damage the lid, with permanent ink of any contrasting color, which is free of carcinogenic elements, provided that the required markings are applied onto the tray body after processing.

2/ The lot number shall be expressed as a four digit Julian code. The first digit shall indicate the year of production and the next three digits shall indicate the day of the year (Example, 11 June 2002 would be coded as 2162). The Julian code shall represent the day the product was packaged into the tray and processed. Sublotting (when used) shall be represented by an alpha character immediately following the four digit Julian code. Following the four digit Julian code and the alpha character (when used), the other required code information shall be printed in the sequence as listed above.

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

(1) Lid labeling shall include:
Product name
Ingredients
Net weight
Name and address of packer
Official establishment number (for example, EST 38) or a three letter code identifying the establishment

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

TO HEAT IN WATER: Submerge unopened tray in water. Bring water to a boil. Simmer gently 35-40 minutes. Avoid overheating (tray shows evidence of bulging).

WARNING: Do not heat tray in oven.

TO TRANSPORT AFTER HEATING: Insert tray back into protective sleeve to protect during transport. If sleeve is unavailable, stack trays lid-to-lid with fiberboard pads in between.

CAUTION: Use care when opening as pressure may have been generated within the tray.

TO OPEN: Using a clean knife, cut the lidding around the inside perimeter of the tray seals.

SUGGESTION: Cut lid along 3 sides and fold over uncut portion. Fold back to keep unused portions protected.

YIELD: Serves 18 portions of approximately 2/3 cup each.

D-3 PACKING

A. Packing for shipment to ration assembler. Four filled, sealed, processed and sleeved polymeric trays shall be packed in a snug fitting fiberboard box conforming to style RSC-L, type CF, grade 275 of ASTM D5118/D5118M-95 (2001), Standard Practice for Fabrication of Fiberboard Shipping Boxes. The sleeved trays shall be placed flat with the first two trays placed with the lids together and the next two trays with the lids together. The box shall be closed in accordance with ASTM D1974-98, Standard Practice for Methods of Closing, Sealing, and Reinforcing Fiberboard Boxes.

D-4 UNITIZATION

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

D-5 MARKING

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

SECTION E INSPECTION AND ACCEPTANCE

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

A. Definitions.

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

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

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

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

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

the lot. The approved first article or product demonstration model shall be used as the product standard for periodic review evaluations. All food components that are inspected by the USDA shall be subject to periodic review sampling and evaluation. The USDA shall select sample units during production of contracts and submit them to the following address for evaluation:

US Army Soldier & Biological Chemical Command
Soldiers System Ctr., Natick Soldier Center
Attn: AMSSB-RCF-F(N)
15 Kansas Street
Natick, MA 01760-5018

One lot shall be randomly selected during each calendar month of production. Two (2) sample units of each item produced shall be randomly selected from that one production lot. The two (2) sample units shall be shipped to Natick within five working days from the end of the production month and upon completion of all USDA inspection requirements. The sample units will be evaluated for the characteristics of appearance, odor, flavor, texture and overall quality.

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

E-5 QUALITY ASSURANCE PROVISIONS (PRODUCT)

A. Product examination. The finished product shall be examined for compliance with the performance requirements specified in Section C of this Performance-based Contract Requirements document utilizing the double sampling plans indicated in ANSI/ASQC Z1.4 - 1993. The lot size shall be expressed in trays. The sample unit shall be the contents of one tray. The inspection level shall be S-3 and the acceptable quality level (AQL), expressed in terms of defects per hundred units, shall be 4.0 for major defects and 6.5 for minor defects. Defects and defect classifications are listed in table I below. The trays shall be heated in accordance with the heating instructions from the tray label prior to conducting any portion of the product examination.

TABLE I. Product defects 1/ 2/ 3/

Category		Defect
Major	Minor	
		Appearance
101		Product not eggs with cheese and cured, smoked cooked bacon pieces.
102		Product is not a typical yellow cooked egg color or slightly darker.
	201	Product shows visible lumps of starch.
	202	Presence of two or more air pockets or void areas measuring 1/2 inch or more in each of two separate dimensions.
	203	Presence of three or more air pockets or void areas measuring 1/4 inch or more in each of two separate dimensions.
	204	Bacon pieces not uniformly distributed throughout the product.
	205	Cured, smoked cooked bacon pieces do not have a cooked bacon color.
		Odor and flavor
103		Odor or flavor not eggs with cured, smoked cooked bacon pieces and cheese.
		Texture
104		Egg product not moist or not moderately soft.
105		Egg product is rubbery.
	206	Bacon pieces not moist or not tender.
		Net weight
	207	Net weight of an individual polymeric tray less than 92 ounces. 4/
		Free liquid weight
	208	Free liquid weight in an individual polymeric tray more than 3.0 ounces. 5/

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

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

3/ Size requirement for the bacon pieces shall be verified by certificate of conformance.

4/ Sample average net weight less than 94 ounces shall be cause for rejection of the lot.

5/ To test for free liquid weight, open two opposite corners. Elevate the tray so one opened corner is at the bottom to allow the free liquid to escape and the other opened corner is at the top to allow air to enter. The tray shall be elevated and drained for one minute. The weight of the free liquid shall be reported to the nearest 0.1 ounce.

B. Methods of inspection.

(1) Commercial sterility. Incubate at 95^0F ± 5^0F for 10 days, unless otherwise specified by the inspection agency.

(2) Shelf life. The contractor shall provide a certificate of conformance that the product has a 3 year shelf life when stored at 80^0F. Government verification may include storage for 6 months at 100^0F or 36 months at 80^0F. Upon completion of either storage period, the product will be subjected to a sensory evaluation panel for appearance and palatability and must receive an overall score of 5 or higher based on a 9 point hedonic scale to be considered acceptable.

(3) Net weight. The net weight of the filled and sealed polymeric tray shall be determined by weighing each sample unit on a suitable scale tared with a representative empty polymeric tray and lid. Results shall be reported to the nearest 1 ounce.

(4) Starch lumps, air pockets, and void areas. From each sample polymeric tray of product, remove one 3 inch wide center slice (sliced lengthwise of the tray). Place center slice on edge and cut in half lengthwise. Inspect inside surfaces for air pockets and void areas and starch lumps.

(5) Analytical. The sample to be analyzed shall be a one-pound composite of three filled and sealed polymeric trays that have been selected at random from one production lot. The composite sample shall be prepared and analyzed in accordance with the following Official Methods of Analysis of AOAC International (OMA).

Test	Method Number
Protein	984.13 or 992.15
Fat	985.15
Salt	935.47
Sample preparation	983.18

Test results shall be reported to the nearest 0.1 percent. Verification will be conducted through actual testing by a Government laboratory. Any result not conforming to the analytical requirements shall be cause for rejection of the lot.

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

A. Packaging and labeling.

(1) Polymeric tray testing. For purposes of clarification, the polymeric tray

without the lid will be referred to as the “tray” and the polymeric tray with the lid shall be referred to as the “container”. The polymeric tray with protective sleeve and polymeric tray material shall be examined for the characteristics listed in table I of MIL-PRF-32004, Packaging of Food in Polymeric Trays. Utilizing the single sampling plans indicated in ANSI/ASQC Z1.4 – 1993, the lot size, sample unit, and inspection level criteria are provided in table II below for each of the test characteristics. Any test failure shall be classified as a major defect and shall be cause for rejection of the lot. For rough handling survivability at frozen temperature, polymeric tray survival rate shall be at least 85 percent.

TABLE II. Polymeric tray quality assurance criteria

Prior to processing

Characteristic	Lot size expressed in	Sample unit	Inspection level
Tray configurations and dimensions	Trays	1 tray	S-1
Oxygen gas transmission rate of tray	Trays	1 tray	S-1
Oxygen gas transmission rate of lid	Yards	1/2 yard	S-1
Water vapor transmission rate of tray	Trays	1 tray	S-1
Water vapor transmission rate of lid	Yards	1/2 yard	S-1
Camouflage	Containers	1 container	S-1

After processing

Characteristic	Lot size expressed in	Sample unit	Inspection level
Processing	Trays	1 tray	S-2
Rough handling survivability	Test containers	1 container	S-2
Protective sleeve	Containers	1 container	S-1
Residual gas	Containers	1 container	S-1
Closure seal	Containers	1 container	S-1
Internal pressure	Containers	1 container	S-1
Lid opening	Containers	1 container	S-1

(2) Examination of container. The container with protective sleeve removed shall be examined for the defects listed in table II of MIL-PRF-32004 and the labeling defects listed in table III below. The lot size shall be expressed in containers. The sample unit shall be one processed and labeled container. Utilizing the single sampling plans indicated in ANSI/ASQC Z1.4 – 1993, the inspection level shall be I and the AQL, expressed in terms of defects per hundred units, shall be 0.65 for major A defects, 2.5 for major B defects and 4.0 for minor defects. Two hundred sample units shall be examined for critical defects. The finding of any critical defect shall be cause for rejection of the lot.

TABLE III. Container labeling defects

Category		Defect
Major A	Minor	
101		Polymeric tray lid or body labeling missing, incorrect or illegible.
	201	When a pre-printed self adhering label is used, the label not adhering to tray lid (for example, label raised or peeled back from edge to corner) or presence of any areas of gaps along the perimeter of the label where the label is not properly adhered.

(3) Label adhesive examination. When self-adhering labels are used, the adhesive shall be tested in accordance with ASTM D3330/D3330M-00, Standard Test Method for Peel Adhesion of Pressure-Sensitive Tape. In lieu of testing, a certificate of conformance (COC) shall be provided.

B. Packing.

(1) Shipping container and marking examination. The filled and sealed shipping containers shall be examined for the defects listed in table IV below. The lot size shall be expressed in shipping containers. The sample unit shall be one shipping container fully packed. Utilizing the single sampling plans indicated in ANSI/ASQC Z1.4 – 1993, 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
Major	Minor	
101		Marking omitted, incorrect, illegible, or improper size, location sequence or method of application.
102		Inadequate workmanship. 1/
	201	Arrangement or number of polymeric trays 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.

C. Unitization.

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

SECTION J REFERENCE DOCUMENTS

DSCP FORMS

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

MILITARY SPECIFICATIONS

MIL-PRF-32004	Packaging of Food in Polymeric Trays

GOVERNMENT PUBLICATIONS

Federal Food, Drug, and Cosmetic Act and regulations promulgated thereunder (21 CFR Parts 1-199) and (9 CFR Parts 1-391)

NON-GOVERNMENTAL STANDARDS

AMERICAN SOCIETY FOR QUALITY (ASQ)

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

ASTM INTERNATIONAL

D1974-98	Standard Practice for Methods of Closing, Sealing, and Reinforcing Fiberboard Boxes
D3330/D3330M-00	Standard Test Method for Peel Adhesion of Pressure-Sensitive Tape
D5118/D5118M-95 (2001)	Standard Practice for Fabrication of Fiberboard Shipping Boxes

AOAC INTERNATIONAL

Official Methods of Analysis of the AOAC International (OMA)

AMSRD-NSC-CF-F (Canniff/4503) 15 October 2004

TO: DSCP-HRUT (Charya/3832)

SUBJECT: ES case 05-008 (DSCP-SS-05-00154); Request for Waiver and Document Change; PCR-E-007, EGGS WITH CHEESE AND BACON PIECES, PACKAGED IN A POLYMERIC TRAY, SHELF STABLE, Lot 4232 (protein and salt requirements) and Lot 4233 (protein requirement).

1. Date received: 12 October 2004
   Date due: 19 October 2004
   Date replied: 15 October 2004

2. The Natick Soldier Center (NSC) concurs with the request to accept lots 4232 and 4233 of Eggs with Cheese and Bacon Pieces that failed the protein requirement. Protein test results for lot 4232 are 10.4 percent by The Wornick Company and 10.9 percent by USDA. Test results for lot 4233 are 10.5 percent by The Wornick Company and 11.0 percent by USDA.

3. NSC concurs with the request to change the protein requirement in subject document from “not less than 11.0 percent” to “not less than 10.0 percent.” Past results show that the protein values have been running very close to the present requirement of 11.0 percent and this could lead to more product failures. The new protein requirement would be similar to the other tray pack egg requirements and does not create a nutritional deficit. Attached file highlights the change.

4. NSC concurs with the request to accept lot 4232 that failed salt by only 0.1 percent. No change to the document was requested and none is needed.

5. Armed Forces representatives were contacted and the following responses were given:
Army: Ms. Lorraine Salerno concurs with NSC recommendations.
Marine Corps: Ms. Susan Tucker on TDY.
Air Force: Mr. Chuck Ervin concurs with NSC recommendations.

6. The POC for this action is Mr. Wayne M. Swantak, X4938 or Ms. Mary A. Canniff, X4503 .

1 Encl

DONALD A. HAMLIN
Team Leader
DoD Food Integration and
Engineering Services Team

(M Canniff)

CF: NSC:
Acheson
Arcidiacono
Canniff
Friel
Hamlin
Norton
Harrington
Richards
Swantak
Trottier
Valvano

CF: DSCP & SVCs:
Bedford
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