

MIL-F-43231C
30 September 1985
SUPERSEDING
MIL-F-43231B
31 October 1973

MILITARY SPECIFICATION

FOOD PACKET, SURVIVAL, GENERAL PURPOSE

This specification is approved for use by all Departments and Agencies of the Department of Defense.

1. SCOPE

1.1 Scope. This document covers the cans, packaging, packing and assembly requirements of a general purpose survival food packet for use by the Armed Forces.

2. APPLICABLE DOCUMENTS

- * 2.1 Government documents. Unless otherwise specified, the following documents of the issue in effect on date of invitation for bids or request for proposal form a part of this document to the extent specified herein.

SPECIFICATIONS

FEDERAL

EE-B-575	- Bouillon (Soup and Gravy Bases)
TT-C-495	- Coatings, Exterior, for Tinned Food Cans
HHH-C-575	- Coffee, Instant
JJJ-S-791	- Sugars, Refined and Brown, Beet or Cane
PPP-B-636	- Boxes, Shipping, Fiberboard
PPP-C-96	- Cans, Metal, 28 Gage and Lighter
PPP-T-60	- Tape, Packaging, Waterproof

Beneficial comments (recommendations, additions, deletions) and any pertinent data that may be of use in improving this document should be addressed to U.S. Army Natick Research and Development Center, Natick, MA 01760-5014, by using the self-addressed Standardization Document Improvement Proposal (DD Form 1426) appearing at the end of this document or by letter.

FSC 8970

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MIL-F-43231C

MILITARY

MIL-F-3897 - Fruitcake Bar
MIL-O-20582 - Opener, Can, Hand, Folding
MIL-C-35074 - Cereal Bars, Survival Type
MIL-L-35078 - Loads, Unit: Preparation of Semiperishable
Subsistence: General Specification For

STANDARDS

MILITARY

MIL-STD-105 - Sampling Procedures and Tables for Inspection by
Attributes
MIL-STD-129 - Marking for Shipment and Storage

(Copies of documents required by manufacturers in connection with specific acquisition functions should be obtained from the contracting activity or as directed by the contracting officer.)

OTHER GOVERNMENT DOCUMENTS

U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES

Federal Food, Drug, and Cosmetic Act and Regulations Promulgated Thereunder
(21 CFR Parts 1-199)

(Application for copies should be addressed to the Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402.)

U.S. DEPARTMENT OF AGRICULTURE (USDA)

Visual Aids for Inspection of Metal Containers

(Application for copies should be addressed to the Director, Market Research and Development Division, Agricultural Marketing Service, U.S. Department of Agriculture, Washington, DC 20250.)

2.2 Other publications. Unless otherwise specified, the following documents of the issue in effect on date of invitation for bids or request for proposal form a part of this document to the extent specified herein.

MIL-F-43231C

NATIONAL MOTOR FREIGHT TRAFFIC ASSOCIATION, INC., AGENT

National Motor Freight Classification

(Application for copies should be addressed to the American Trucking Associations, Inc., Traffic Department, 1616 P Street N.W., Washington, DC 20036.)

UNIFORM CLASSIFICATION COMMITTEE, AGENT

Uniform Freight Classification

(Application for copies should be addressed to the Uniform Classification Committee, Department of Services and Supplies, Room 1160, 222 S. Riverside Plaza, Chicago, IL 60606.)

(Technical society and technical association documents are generally available for reference from libraries. They are also distributed among technical groups and using Federal agencies.)

2.3 Order of precedence. In the event of conflict between the text of this document and the references cited herein, the text of this document shall take precedence.

3. REQUIREMENTS

- * 3.1 Plant qualification. The product shall be prepared, processed, and packaged in establishments meeting the requirements of Title 21, Code of Federal Regulations, Part 110, "Current Good Manufacturing Practice in Manufacturing, Processing, Packaging or Holding of Human Foods," and the plant sanitation requirements of the appropriate Government inspection agency.

3.2 Federal Food, Drug, and Cosmetic Act. All deliveries shall conform in every respect to the provisions of the Federal Food, Drug, and Cosmetic Act and regulations promulgated thereunder.

- * 3.3 Components. The food packets shall consist of the components specified in table I.

MIL-F-43231C

TABLE I. Components of food packet

Product	No. of units	Net weight per unit	Related specification and classification
Cornflake bar	1	2.00 oz (average)	MIL-C-35074, type I <u>1/</u>
Fruitcake bar <u>2/</u> or Cereal bar, granola	2 1	1.00 oz (each) 2.00 oz (average)	MIL-F-3897 MIL-C-35074, type IV
Cereal bar, granola	1	2.00 oz (average)	MIL-C-35074, type IV
Rice-cornflake bar	1	2.00 oz (average)	MIL-C-35074, type II <u>1/</u>
Coffee, instant	1	2.50 grams	HHH-C-575, type II
Sugar, granulated	1	6.00 grams	JJJ-S-791, type I (a) or (b)
Bouillon (Soup and gravy base) chicken- flavored	1	7.00 grams	EE-B-575, type II
Opener, can, folding	1		MIL-O-20582

1/ Bars shall be cellophane wrapped for ease in can filling and closing.

2/ Alternatively, one 2-ounce fruitcake bar may be used.

MIL-F-43231C

3.4 Cans. Cans shall comply with provisions of 5.1.1 when tested and examined in accordance with 4.4.1.

4. QUALITY ASSURANCE PROVISIONS

* 4.1 Contractor's responsibility. Inspection and acceptance by the USDA shall not relieve the contractor of obligation and responsibility to deliver a product complying with all requirements of this specification. The contractor shall assure product compliance prior to submitting the product to the USDA for any inspection.

* 4.2 Inspection and certification. Product acceptability shall be determined by the USDA. The USDA will determine the degree of supervision necessary to assure compliance with the requirements of this specification.

4.3 Preacceptance inspection (plant sanitation inspection). The product shall be rejected if assembled in plants not meeting the requirements of 3.1.

4.4 Quality conformance inspection. Unless otherwise specified, sampling for inspection shall be performed in accordance with MIL-STD-105.

4.4.1 Cans and lids testing. The cans and lids shall be tested for the characteristics listed in table II. Test results shall be an average of the individual sample units and a test failure shall be cause for rejection of involved lot of cans and lids.

TABLE II. Component tests

Component	Sample unit	Lot size expressed in	Inspection level	Characteristic	Results reported	Test ref. and rqmt. para.
Cans & lids <u>1/ 2/</u>	1 can w/lid	Cans	S-1	Tin plate	Nearest 0.01 pound	5.1, 4.5.1.2

1/ Cans and lids shall be tested as separate lots.

2/ Testing of exterior coating shall be performed on the same cans and lids submitted for tin plate test.

MIL-F-43231C

4.4.2 Examination of can bodies. The cans, prior to filling, shall be examined for the defects listed in table III. The lot size shall be expressed in can bodies. The sample unit shall be one unfilled can body. The inspection level shall be S-4 and the acceptable quality level (AQL), expressed in terms of defects per hundred units, shall be 1.5 for major defects and 4.0 for minor defects.

TABLE III. Examination of can bodies ^{1/}

Category		Defects
<u>Major</u>	<u>Minor</u>	
101		Not style or size specified
102		Severe or moderate dent, misshapen, cut or distorted flange (would hamper or preclude insertion of components or closure of can)
103		False or improper seam
104		Cable cut
105		Rusty ^{2/}
	201	Not clean ^{3/}
106		Key missing
107		Tongue for opening insufficiently free for key to grip, or tongue broken off
108		Missing or incomplete scoring
109		Required lithographed labeling missing, incorrect or illegible
	202	Print smears

^{1/} Use USDA-CMS Visual Aids for Inspection of Metal Containers as a guide for classifying can defects.

^{2/} Rust stain confined to the top or bottom double seam or rust that can be removed with a soft cloth is not scored as a defect.

^{3/} Dirty, stained, or smeared container.

MIL-F-43231C

4.4.3 Examination of can lids. The can lids shall be examined for the defects listed in table IV. The lot size shall be expressed in can lids. The sample unit shall be one can lid. 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 IV. Examination of can lids

Category		Defects
<u>Major</u>	<u>Minor</u>	
112		Not style or size specified
113		Cut or misshapen (badly dented, twisted, etc.)
114		Rusty
	204	Not clean
115		Sealing compound missing or not continuous

4.4.4 Examination of exterior coating of cans and lids. Examinations shall be in accordance with the quality assurance provisions of TT-C-495, except that cans and lids shall be examined as separate lots.

- * 4.4.5 Examination of can contents (prior to sealing). The filled, but not sealed, cans shall be examined for the defects listed in table V. The lot size shall be expressed in cans. The sample unit shall be one filled can. 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 6.5 for minor defects.

MIL-F-43231C

TABLE V. Examination of can contents (prior to sealing) 1/

Category		Defects
<u>Major</u>	<u>Minor</u>	
	206	Not properly arranged
120		Incorrect item
	207	More than required number of any item
121		Crushed bar <u>2/</u>
122		Tear, hole, or open seal in envelope or bar
123		Dirty bar or envelope <u>3/</u>
<u>1/</u> A missing item shall be cause for rejection of the lot.		
<u>2/</u> Cracked or broken into 8-10 pieces.		
<u>3/</u> Two or more specks of dried product which measure more than 1/8 inch square; any foreign matter that materially affects the appearance of the envelope.		

- * 4.4.6 Examination of filled and sealed cans. The filled and sealed cans shall be examined for the defects listed in table VI. The lot size shall be expressed in cans. The sample unit shall be one filled and sealed can. 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.

MIL-F-43231C

TABLE VI. Examination of cans 1/ 2/

Category		Defects
<u>Major</u>	<u>Minor</u>	
126		False seam
127		Cable cut
128		Severe dent or dent causing sharp ridge
129		Pitted rust <u>3/</u>
	210	Not clean <u>4/</u>
130		Month and year of pack not stamped on cans, incorrect or illegible
	211	Month and year of pack stamping not located as specified
131		Key or can opener missing
	212	Can opener not attached in the manner specified, with 1-inch x 4-inch long tape
132		Date of pack marking is not smear resistant <u>5/</u>

1/ Use USDA-CMS Visual Aids for Inspection of Metal Containers as a guide for classifying can defects.

2/ The finding of any can with both the key and can opener missing shall be cause for rejection of the lot.

3/ Rust that can be removed with a soft cloth will not be considered pitted rust.

4/ Cans showing a very thin film of grease which is discernible to the touch but not readily discernible visually are considered to be clean.

5/ Smearing resistance of date of pack marking shall be determined by rubbing over the markings with moderate pressure with a dry finger or a clean cloth not less than 10 times after allowing the markings to dry for at least 12 hours.

MIL-F-43231C

4.4.7 Cans leakage testing. The filled and sealed cans shall be tested for leaks as specified in 4.5.1.1 for conformance to the requirements in 5.1.1. The lot size shall be expressed in cans. The sample unit shall be one filled and sealed can. The inspection level shall be S-3 and the AQL, expressed in terms of percent defective, shall be 0.65. Any nonconformance shall be scored as a major defect.

* 4.4.8 Examination of shipping containers. Examination of the filled and closed shipping containers shall be in accordance with the quality assurance provisions in the appendix of PPP-B-636. In addition, the following defects shall be included in the examination: Major - Markings missing, incorrect, or illegible; Minor - Arrangement of contents not as specified.

4.4.9 Examination of unit loads. Unit loads shall be examined in accordance with MIL-L-35078.

4.5 Test methods. Examination and test procedures which differ from those specified herein, unless otherwise excepted, may be used by the contractor if they provide a quality assurance equivalent to that specified. If the Government contracting officer determines that such procedure and controls do not provide, as a minimum, such quality assurance, the contractor will use the procedures set forth herein. In case of dispute as to examination or test results, the procedures specified herein will govern.

4.5.1 Examination procedures.

4.5.1.1 Leakage examination for cans. The sealed can shall be examined for leakage by submerging in water, contained in a desiccator or other suitable container and maintaining a vacuum of 10 inches of mercury (atmospheric pressure 29.9 inches) for at least 30 seconds. A leak is indicated by a steady progression of bubbles.

4.5.1.2 Tin coating weights. Tin coating weights shall be determined by any method specified in PPP-C-96.

5. PACKAGING

5.1 Packaging (Level A).

5.1.1 Description of cans. Cans shall be open-top, key-opening style, rectangular metal cans, with soldered side seam and compound-lined, double-seamed ends. The can size shall be 314 by 202 by 304 and (including lids) shall be made throughout from commercial electrolytic tin plate of not less than 0.25 pound per base box (see 4.5.1.2). Cans shall be side-seam striped and coated overall outside with a coating complying with type III of TT-C-495.

MIL-F-43231C

Cans and lids shall be clean, sound, and free of rust. The can body shall be scored and fitted with a suitable tongue for opening. A corrosion-resistant key shall be attached to the bottom of the can by soldering or welding using a non-corrosive flux. Cans shall not show leakage when examined in accordance with 4.5.1.1. Cans shall be labeled and marked in accordance with 5.4.1.

- * 5.1.2 Packaging of components into cans. The components listed in table I (except the can opener) shall be packaged in a can complying with 5.1.1. The sugar envelope shall be placed flat in the can first. The soup and gravy base envelope shall then be placed flat in the can. The coffee envelope shall be placed vertically in the can along the sides of the fruitcake or granola bar. The sealed edges of the bar envelopes shall be folded snugly against the sides and end of each bar to permit ease of filling. The edges of the top bar shall be folded downward (toward the bottom of the can) to permit ease of closure of the can. The filled can then shall be hermetically sealed. The can opener listed in table I shall be attached to the top of the can with a strip of 1 inch wide tape, not less than 4 inches in length, applied across the width of the can with approximately 1 inch extending down each side of the can. The tape shall comply with type III, class 2 of PPP-T-60, except that only the requirements for holding power, adhesion, and weathering (except color requirement), shall apply. Cans shall not show leakage when examined in accordance with 4.5.1.1.

5.2 Packing.

5.2.1 Packing of assembled ration (level B). Twenty-four food packet cans, packaged as specified in 5.1, arranged 3 in length, 4 in width, and 2 in depth, shall be packed in a fiberboard box constructed, closed, and reinforced in accordance with style RSC, V3c, V3s, or V4s of PPP-B-636. Container size shall be 11 3/4 inches in length, 8 5/8 inches in width, and 6 5/8 inches in depth.

5.2.1.1 Shipping containers. When specified (see 6.1 and 6.2), the shipping container specified in 5.2.1 shall be reinforced with nonmetallic strapping or pressure-sensitive adhesive filament reinforced tape in accordance with the appendix of PPP-B-636.

5.3 Unit loads. When specified (see 6.1), the product packed as specified in 5.2 shall be arranged in unit loads in accordance with MIL-L-35078 for the type and class specified.

MIL-F-43231C

5.4 Labeling and marking.

- * 5.4.1 Cans. The following information shall be permanently lithographed on the body of the can in bold, legible type:

FOOD PACKET SURVIVAL

GENERAL PURPOSE

INSTRUCTIONS

The food in this packet is especially designed for survival use. The food can be eaten even when water supply is limited.

CAUTION: If you are exposed to salt water spray or have swallowed salt water, do not use the soup and gravy base. The soup base may be made into a broth or used to season chicken flavored soup. The food packet can holds approximately 12 ounces of water, brimful, when opened with a can opener. If opened with a key (on center scored cans) each half of the food packet can holds approximately 6 ounces of water, brimful. On top scored cans the food packet can holds approximately 8 ounces of water, brimful. Eating slowly will give more satisfaction.

(Name and Address of the Ration Assembler)

If the above information cannot be readily placed on one side of the body of the can, the instructions may be continued on the opposite side. The month and year of the date of pack shall be legibly stamped in indelible ink immediately under the instructions. The markings shall be resistant to smearing when examined as specified in table VI.

5.4.2 Shipping container. The shipping container shall be marked in accordance with MIL-STD-129.

5.4.3 Unit loads. Unit loads shall be marked in accordance with MIL-STD-129 and as specified in the contract.

MIL-F-43231C

6. NOTES

6.1 Ordering data. Contract documents should specify the following:

- a. Title, number, and date of this document.
- b. Level of packing required (see 5.2).
- c. Type of reinforcement of shipping containers, when reinforcement is required (see 5.2.1.1).
- d. Type and class of unit load when unit loading is specified (see 5.3).
- e. When cans are procured by the Government the contracting agency should specify shipment to the assembly point in accordance with the following:

Shipment of cans to ration assembly. Cans shall be packed in containers which are acceptable to common carriers for safe transportation to the destination specified in shipping instructions at the lowest rate for such supplies. Shipping containers shall be in accordance with the Uniform Freight Classification Rules or National Motor Freight Classification Rules, as applicable.

6.2 Special packing. Packing specified in 5.2.1.1 is intended for transfer at sea operations or specific Navy overseas operations.

6.3 Changes from previous issue. The margins of this document are marked with an asterisk (*) to indicate where changes (additions, modifications, corrections, deletions) from the previous issue have been made. This was done as a convenience only and the Government assumes no liability whatsoever for inaccuracies in these notations. Bidders and contractors are cautioned to evaluate the requirements of this document based on the entire content irrespective of the marginal notations and relationship to the last previous issue.

MIL-F-43231C

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Project No. 8970-0147

Review activities:

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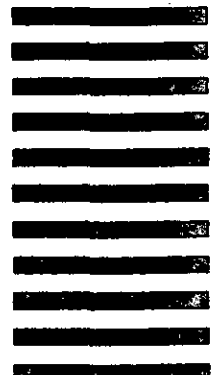
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MIL-F-43231C2. DOCUMENT TITLE
Food Packet, Survival, General Purpose

3a. NAME OF SUBMITTING ORGANIZATION

4. TYPE OF ORGANIZATION (Mark one)

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5. PROBLEM AREAS

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7a. NAME OF SUBMITTER (Last, First, MI) - Optional

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