

INCH-POUND

MIL-PRF-32026(GL)

03 June 1998

PERFORMANCE SPECIFICATION

CONTAINERIZED KITCHEN

This specification is approved for use by the Natick Research, Development and Engineering Center, Department of the Army, and is available for use by all Departments and Agencies of the Department of Defense.

1. SCOPE

1.1 Scope. This specification covers a field kitchen, configured within an 8-foot by 8-foot by 20-foot International Organization for Standardization (ISO) container, that provides a rapidly deployable food preparation capability (see 6.1).

2. APPLICABLE DOCUMENTS

2.1 General. The documents listed in this section are specified in sections 3 and 4 of this specification. This section does not include documents cited in other sections of this specification or recommended for additional information or as examples. While every effort has been made to ensure the completeness of this list, document users are cautioned that they must meet all specified requirements documents cited in sections 3 and 4 of this specification, whether or not they are listed.

2.2 Government documents.

2.2.1 Specifications and standards. The following specifications and standards form part of this document to the extent provided herein. Unless otherwise specified, the issues of these documents are those listed in the issue of the Department of Defense Index of Specifications and Standards (DoDISS) and the supplement thereto, cited in the solicitation (see 6.2).

Beneficial comments (recommendations, additions, deletions) and any pertinent data which may be of use in improving this document should be addressed to: U.S. Army Natick Research, Development and Engineering Center, ATTN: SSCNC-WEF, Natick, MA 01760-5018 by using the Standardization Document Improvement Proposal (DD Form 1426) appearing at the end of this document or by letter.

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DEPARTMENT OF DEFENSE

- MIL-C-53072 — Chemical Agent Resistant Coating (CARC) System Application Procedures and Quality Control Inspection
- MIL-STD-209 — Slings and Tiedown Provisions for Lifting and Tying Down Military Equipment
- MIL-STD-810 — Environmental Test Methods and Engineering Guidelines

(Unless otherwise indicated, copies of the above specifications and standards are available from the Standardization Documents Order Desk, 700 Robbins Avenue, Building 4D, Philadelphia, PA 19111-5094.)

2.2.2 Other Government documents. The following other Government documents form a part of this document to the extent specified herein. Unless otherwise specified, the issues are those cited in the solicitation (see 6.2).

NATIONAL INSTITUTE FOR OCCUPATIONAL SAFETY AND HEALTH (NIOSH)

NIOSH Manual of Analytical Methods (NMAM)

(Application for copies should be addressed to Superintendent of Documents, Government Printing Office, Washington, D.C. 20402-9325.)

OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA)

- Directive TED 1.15 — OSHA Technical Manual (OTM)
- Standard No. 1910.1000 — Air Contaminants

(Application for copies should be addressed to U.S. Department of Labor/OSHA, OSHA Publications, P.O. Box 37535, Washington, D.C. 20013-7535.)

2.3 Non-Government publications. The following documents form a part of this document to the extent specified herein. Unless otherwise specified, the issues of the documents which are DoD adopted are those listed in the issue of the DoDISS cited in the solicitation. Unless otherwise specified, the issues of documents not listed in the DoDISS are the issues of the documents cited in the solicitation (see 6.2).

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AMERICAN CONFERENCE OF GOVERNMENTAL INDUSTRIAL HYGIENISTS (ACGIH)

Threshold Limit Values and Biological Exposure Indices

(Application for copies should be addressed to American Conference of Governmental Industrial Hygienists, 1330 Kemper Meadow Drive, Cincinnati, OH 45240.)

INTERNATIONAL ORGANIZATION FOR STANDARDIZATION (ISO)

- Standard 668 — Freight containers – External dimensions and ratings
- Standard 1161 — Series 1 freight containers – Corner fittings – Specification
- Standard 8323 — Freight containers – Air/surface (intermodal) general purpose containers – Specification and tests
- Standard 1496-1 — Series 1 freight containers – Specification and testing – Part I : General cargo containers

(Application for copies should be addressed to American National Standards Institute, 1430 Broadway, New York, NY 10018.)

NATIONAL FIRE PROTECTION ASSOCIATION (NFPA)

- Standard No. 70 — National Electrical Code
- Standard No. 701 — Fire Test for Flame-Resistant Textiles and Films

(Application for copies should be addressed to National Fire Protection Association, One Battery March Park, Quincy, MA 02269-9101.)

NSF INTERNATIONAL

- Standard No. 2 — Food Service Equipment

(Application for copies should be addressed to NSF International, 3475 Plymouth Road, Ann Arbor, MI 48105.)

2.4 Order of precedence. In the event of a conflict between the text of this document and the references cited herein, the text of this document takes precedence. Nothing in this document, however, supersedes applicable laws and regulations unless a specific exemption has been obtained.

3. REQUIREMENTS

3.1 First article. When specified (see 6.2), a sample shall be subjected to first article inspection in accordance with 4.1.1.

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3.2 Operating requirements.

3.2.1 Transportation mode. When configured for transportation, the CK shall be sheltered in an 8-foot by 8-foot by 20-foot ISO container with forklift pockets (see 3.4.1.5). The CK shall meet all ISO freight container requirements related to cargo containers, including a six-high stack, and shall meet Coast Guard requirements for safe containers. In transportation mode, the CK shall meet all transportability requirements (see 3.4.1).

3.2.2 Operational mode. When configured for food preparation, the CK shall have food preparation and serving areas protected from natural elements of the environment. All food preparation equipment, the electrical supply, the environmental control system, and all related controls and instruments shall be mounted inside the CK. Sheltered floorspace shall be sufficient to perform all necessary food preparation and serving tasks, with a minimum of 390 square feet (see 6.13).

3.2.3 Meal preparation. The CK shall have a capability to prepare and serve a minimum of 550 Army field menu meals (A-Ration, Heat and Serve Ration, or any combination, see 6.8) up to three times per day. The CK shall enable cooks to prepare a meal (A-Ration) in less than three hours. The CK shall have the capability to prepare and serve meals while mounted on a towed trailer (see 6.10) and while dismounted.

3.2.4 Set up and tear down. The CK shall require not greater than 45 minutes to set up and not greater than 45 minutes to tear down by a crew of four personnel and a supervisor. If set up or tear down procedures require electrical power, backup provisions shall be provided to manually perform these tasks without power.

3.2.5 Integrated equipment. The CK system shall integrate the Government Furnished Equipment (GFE, see 6.2) listed in table I, the contractor furnished National Stock Number (NSN) items listed in table II, and the contractor furnished kitchen accessories listed in table III. Equipment in table II may be modified to meet performance or other requirements. The stock numbers listed in table III are included for reference only; all items shall be commercial food-service quality and functionally equivalent to the NSN items listed, but the source of supply does not have to be GSA.

TABLE I. Government Furnished Equipment

Item #	Description	Quantity	NSN
1	10-kilowatt generator (Interface Requirement)	1	6115-01-275-5061
2	Modern Burner Unit (MBU)	7	7310-01-452-8137
3	MBU power converter	1	7310-01-452-6513

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TABLE II. Contractor-furnished NSN items

Item #	Description	Quantity	NSN
1	Cook pot cradle assembly	2	7330-01-248-9964
2	Cooking rack assembly	4	7310-01-048-2184
3	Griddle top	1	7310-01-388-6591
4	Heater tank, tray pack	1	7360-01-248-6041
5	Oven, field	2	7310-01-388-6606
6	Steam table body and adapter top	1	7310-01-388-6578

TABLE III. Contractor-furnished kitchen accessories

Item #	Description	Quantity	NSN*
1	Beverage dispenser, 5-gallon	8	7310-01-245-6937
2	Board, food slicing and chopping	2	7330-01-078-5706
3	Can, water, plastic, 5-gallon	6	7240-00-089-3827
4	Can opener, hand	2	7330-01-245-0201
5	Colander, SS, 16-quart	1	7330-00-266-7453
6	Dipper, 32-ounce	4	7330-00-272-2489
7	Eggwhip	2	7330-00-815-1458
8	Fork, 15-inch	4	7340-00-223-7791
9	Fork, 21-inch	4	7340-00-223-7792
10	Ice cream scoop, size 6	4	7330-00-197-1280
11	Insulated food container	16	7360-01-408-4911
12	Knife, boning, 10-inch	3	7340-00-197-1271
13	Knife, cook's, 14.5-inch	3	7340-00-488-7950
14	Knife, paring, 7-inch	4	7340-00-488-7939
15	Knife, steak, 10-inch	3	7340-00-197-1274
16	Ladle, 8-ounce	4	7330-00-248-1153
17	Measuring cup, 4-quart	2	7330-00-264-5368
18	Measuring set, spoons	2	7330-00-272-7876
19	Pan, baking and roasting, with cover	4	7330-00-263-8504
20	Pans, baking, full size	10	
21	Peelers, potato, hand	3	7330-00-238-8316
22	Pot cooking, 10-gallon, with cover	3	7330-00-292-2306

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Item #	Description	Quantity	NSN*
23	Pot cooking, 15-gallon, with cover	3	7330-00-292-2307
24	Skimmer, kitchen	2	7330-00-680-2635
25	Spoon, basting, 15-inch	4	7340-00-240-7080
26	Spoon, basting, 21-inch	4	7340-00-223-7800
27	Spoon, serving, slotted, 15-inch	4	7340-00-205-1421
28	Steam table pan, full size, 6-inch deep	8	
29	Steam table pan, half size, 6-inch deep	4	
30	Table, field	4	
31	Tongs, food service, 12-inch	4	7330-00-616-0997
32	Turner, food (spatula)	4	7330-00-256-2158

*Stock numbers in this table are included for reference only (see 3.2.5)

3.2.6 Environmental control. The CK shall have an integrated environmental control capability which maintains a consistent ambient interior temperature of not less than 60°F and not greater than a Wet Bulb Globe Temperature (WBGT) Index of 90°F. The air temperature difference between head level and floor level shall not exceed 10°F. The environmental control capability shall meet Environmental Protection Agency (EPA) requirements (see 3.4.10).

3.2.7 Exhaust system. The CK shall have a powered exhaust system to expel steam and airborne by-products of food preparation away from operator positions and the serving line. The exhaust system shall be mounted above the griddle and steam table, and shall be equipped with grease filters which can be easily removed and washed in the Food Sanitation Center (NSN 7360-01-277-2558). The recommended minimum capacity of the exhaust system is 750 cubic feet/minute at 1.00 inch static pressure (see 6.14)

3.2.8 Refrigerator. The CK shall have a refrigerated storage capacity of not less than 40 cubic feet. The refrigerator shall maintain the temperature of perishable foods at 32° to 40°F continuously when connected to a power source, and for at least 4.5 hours when the CK is on the move or when electrical power is unavailable. The refrigerator shall be sufficiently durable to survive shock and vibration that may be encountered in transportation (see 3.4.1), and shall meet Environmental Protection Agency (EPA) requirements (see 3.4.10).

3.2.9 Heated cabinet. The CK shall have a heated cabinet with sufficient capacity to hold 10 commercial standard full size, six-inch deep steam table pans. The heated cabinet shall be capable of maintaining cooked rations at a temperature of 140° to 165°F.

3.2.10 Hand-washing capability. The CK shall have a hand-washing capability housed in a single modular system and consisting of a sink, faucet, water heater, pump (see 3.3.2), wastewater drain (see 3.3.3), liquid soap dispenser, and paper towel dispenser. The sink shall be not less than 10 inches deep and 1.2 cubic feet in volume. The faucet shall provide heated (110° to 120°F) and

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unheated running water. The system shall not be damaged when the water supply is interrupted, and shall include provisions for purging water from the equipment for shutdown.

3.2.11 Floor drain. The floor of the CK shall be equipped with a drain. The drain shall include a grate to catch food particles. The drain apparatus and pipes shall be easily removed and cleaned. The floor drain shall be suitable for accidental spills and intentional hosing down of the floor for cleaning purposes, and shall include provisions for wastewater (see 3.3.3). The floor shall be non-permeable so that moisture cannot enter the container walls and reduce the lifetime of the system. The CK shall have provisions to seal the floor drain in transportation mode (see 3.2.1).

3.2.12 Storage areas. The CK shall have storage capability for all necessary food service preparation, serving, and ancillary equipment (not including remote feeding equipment). In operational mode (see 3.2.2), the CK shall provide separate storage areas for clean utensils and for dry storage (e.g., spices), and an area near the sink (see 3.2.10) to hang utensils. In transportation mode (see 3.2.1), the CK shall provide all storage areas and fastening equipment required to stow all parts of the system in the container.

3.2.13 Leveling. The CK shall include all hardware (e.g., jacks) necessary for leveling and stabilizing the system when mounted on its trailer (see 6.10) and when dismounted. The CK shall be equipped with provisions for visually verifying that the container is properly leveled (e.g., bubble levels).

3.2.14 Sanitation. All surfaces inside the CK shall be smooth and sanitizable in accordance with NSF International Standard No. 2.

3.2.15 Blackout capability. The CK shall provide an internal blackout capability to allow food service personnel to prepare meals under blackout conditions. The CK shall have blackout lighting which operates when the food preparation door (see 3.5.6) is opened during blackout conditions.

3.3 Interface and interoperability requirements.

3.3.1 Electrical.

3.3.1.1 Electrical system. The CK shall have an integral electrical system which powers all system components requiring electricity. The electrical system shall use alternating current, three-phase, 120/208 volts 50/60 hertz, 60 amp power, and shall be energized by the onboard generator (see 3.2.5) or by an external power source (see 3.3.1.2) depending on the operational scenario. The total power requirements of all CK sub-components shall not exceed the power generating capacity of the generator. All parts of the electrical system shall comply with NFPA Standard No. 70.

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3.3.1.2 External power. The CK shall have a connector (NSN 5935-00-114-8708 or equivalent) and switching capability to operate on external power supplied by standard Army power units (alternating current, three-phase, 120/208 volts 50/60 hertz, 60 amp, five-wire). The CK shall prevent the onboard generator and an external power source from simultaneously powering the electrical system.

3.3.1.3 Electrical connectors. All electrically powered appliances (e.g., refrigerator, heated cabinet, hand-washing station) shall use twist-lock connectors to interface with the electrical system (see 3.3.1.1).

3.3.1.4 MBU electrical interface. The CK shall be equipped with electrical cables and connectors to supply 24-Volt DC electrical power to each MBU. The connectors shall be compatible with the MBU power receptacle (NSN 5935-00-283-7189).

3.3.1.5 Convenience outlets. The CK shall have not less than two 110 volt 15 amp duplex outlets which are easily accessible from the meal preparation area. The outlets shall be protected with ground-fault circuit interrupters.

3.3.1.6 Power switches. The CK shall have independent power switches to control the exhaust system (see 3.2.7), the lighting (see 3.5.16), and all other powered components which do not have integral power controls. The switches shall be labeled to identify which component they control.

3.3.1.7 Overload protection/power control panel. The CK shall have resettable electrical overload protection devices (e.g., circuit breakers) to protect against electrical short, component damage, and personnel injury. Each major electrical component shall be serviced by a separate circuit. All overload protection devices shall be located in a common power control panel, and shall be labeled to identify which components they service.

3.3.1.8 Emergency shut-off. The CK shall be equipped with an emergency shut-off switch for the electrical system (see 3.3.1.1). The switch shall be located near the access door to the food preparation area (see 3.5.6). When activated, the switch shall shut down the generator and the external power feed in such a manner that the power control panel (see 3.3.1.7) is completely de-energized and safe to repair.

3.3.2 Potable water. The CK shall be equipped with a connector and water hose to allow the hand-washing capability (see 3.2.10) to automatically pump potable water from an M149 400-gallon water trailer. The water connector on the hand-washing capability shall be a 5/8-inch diameter female garden hose connector. The hose shall be a 5/8-inch diameter garden hose not less than 50 feet long which interfaces with the hand-washing capability and the water trailer.

3.3.3 Wastewater. The CK shall be equipped with drainage connectors and hoses for reclaiming wastewater from the hand-washing capability (see 3.2.10) and the floor drain (see 3.2.11). The drainage connectors shall be industry standard 1.25-inch diameter male quick-

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disconnect. The hoses shall be 1.25-inch inner diameter hoses not less than 50 feet long with industry standard 1.25-inch diameter female quick-disconnects.

3.3.4 Generator. The CK shall provide visual and manual access to the control panel on the generator (see 3.2.5). All access panels built into the generator shall be easily accessible by gloved and barehanded personnel. The fuel connector, fresh air inlet and outlet, and the exhaust pipe shall not be obstructed. Sufficient air circulation shall be provided to meet the operational requirements of the generator.

3.3.5 MBU refuel capability. The CK shall have the capability to refuel the MBUs from the fuel tank in the generator (see 3.2.5). The CK shall have fuel hoses and connectors to allow all burners to be refueled both individually and concurrently without removing them from the cooking appliances. The fuel line connector shall be compatible with the MBU fuel connector (Parker BH1-60Y).

3.3.6 Field oven exhaust. The CK shall have a mechanism for drawing hot exhaust air from the field ovens (see 3.2.5) out of the CK (e.g., draft inducers) without reducing the efficiency of the ovens.

3.3.7 Weapons rack. The CK shall include a weapons rack suitable for holding at least five M16 rifles in the food preparation area.

3.4 Support or ownership requirements.

3.4.1 Transportability.

3.4.1.1 Rail. The CK shall be capable of rail transportation without damage or degradation to the CK system or its trailer (see 6.10), and without damage to internal fastening devices (e.g., tiedown cables, blocking, or bracing).

3.4.1.2 Fixed wing. The CK shall be transportable in C-130 and larger Air Mobility Command (AMC) aircraft.

3.4.1.3 Helicopter Sling Load (HSL). The CK, mounted on its trailer (see 6.10), shall be capable of being externally transported (sling loaded) by a DoD CH-47D rotary wing aircraft. The CK/trailer combination shall be structurally capable of meeting the requirements of interface standard MIL-STD-209 and shall show no signs of damage or degradation as a result of aerial transportation.

3.4.1.4 Ground mobility. The CK, mounted on its trailer (see 6.10), shall be capable of transportation over primary roads, secondary roads, and cross-country terrain. The CK shall withstand the shocks and vibrations encountered in ground transportation without damage or degradation to the system.

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3.4.1.5 Forklift. The CK, in transportation mode, shall be capable of being lifted onto and off of its trailer (see 6.10) by a forklift without damage or degradation to the CK or its forklift provisions. The CK shall have forklift pockets for both loaded and unloaded containers (see 6.9) which conform to the dimensions of forklift pockets specified in ISO Standard 1496-1.

3.4.2 System weight. The total weight of the CK system, not including the trailer, fuel, or water, shall be not greater than 14,000 lbs.

3.4.3 Roof loads. The roof of the CK shall support the weight of personnel and equipment necessary for all set up, tear down, operation, and maintenance tasks which take place on the roof without evidence of damage or degradation. In operational mode, the roof surfaces of the CK shall withstand a uniform snow load equivalent to 40 pounds per square foot.

3.4.4 Reliability. The CK shall demonstrate a mean time between essential function failure (MTBEFF) of not less than 110 hours. The CK shall demonstrate a mean time between system abort (MTBSA) of not less than 160 hours.

3.4.5 Preventative maintenance. The time required for before-operations and for after-operations preventative maintenance checks and services (PMCS) for the CK system, excluding all government furnished equipment, shall not exceed 15 minutes each. When blackout conditions are required, before-operations PMCS shall include deploying and checking the blackout provisions (see 3.2.15). During-operations checks shall consist of monitoring onboard system devices. PMCS may be performed sequentially or in parallel by the cooks.

3.4.6 Accessibility. All major components (e.g., generator) shall be accessible for adjustment, maintenance, servicing, and replacement without removing any other major component. All other components and assemblies shall be designed for ease of installation and replacement, and shall be accessible for maintenance, service, and replacement with minimum disturbance to other components.

3.4.7 Support equipment. The CK shall not require any new system-specific test, measurement, or diagnostic equipment. The CK shall not require any new or special tools for repair or maintenance. Special tools are tools other than common hand tools currently in the supply system or those specifically designed for use with a delivered product.

3.4.8 Finish. Except where detrimental to proper operation, external surfaces of the CK shall have a nontoxic chemical agent resistant finish. The word "CARC" together with the month and year of finishing, shall be stenciled near the identification plate (see 3.4.9) in block letters not less than one-inch high using lusterless chemical agent resistant paint. The color and type of the finish paint and stenciling paint shall be as specified in the contract or purchase order (see 6.2).

3.4.9 Identification plate. The CK shall have a durable, permanently affixed identification plate. The information on the identification plate shall be as specified in the contract or purchase order (see 6.2).

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3.4.10 Ozone-depleting substances. All refrigerants used in the CK shall be commercially available nonozone-depleting, and environmentally safe. Class I ozone-depleting substances (see 6.7), as determined by the Environmental Protection Agency (EPA), shall not be contained in, and shall be prohibited from use during the fabrication of the CK.

3.5 Human-system integration requirements.

3.5.1 Instructions and warning placards. The CK shall have appropriate warning labels and instructions to assist personnel with safe operation and emergency procedures. All placards shall be permanently affixed to equipment, and shall be sufficiently durable to remain legible at all times. All placards shall be noticeable, recognizable and understandable.

3.5.2 Human Factors. The dimensions and layout of the CK shall permit safe and effective operation and maintenance by male and female personnel in the 5th to 95th percentiles when wearing the field duty uniform, mission-oriented protective posture (MOPP) level-II, and the cold weather ensemble during all potential environmental and operational conditions. Relevant anthropometric measurements are listed in table IV, and additional guidance can be found in the 1988 Anthropometric Survey of U.S. Army Personnel (see 6.11).

TABLE IV. Anthropometric dimensions

Description	Dimension to be used	Example application
Overhead reach	73 inches (5th percentile female)	Shelf height
Functional reach	32 inches (5th percentile female)	Counter depth
Stature	74 inches (95th percentile male, boots)	Head clearance
Shoulder breadth	27 inches (95th percentile male, bulky clothing)	Passage clearance
Weight	199 pounds (in BDU)	Roof weight limits

3.5.3 Uncontrolled hazards. The CK shall present no uncontrolled hazards to operators or potential damage to government equipment. Fail-safe design shall be used for critical safety/health function components or subsystems. Damage to safeguards shall be easily noticed by operators.

3.5.4 Fire protection. The CK shall have emergency fire protection equipment consisting of a minimum of three 2.5 lb. fire extinguishers with ABC fire-fighting capability. Two of the fire extinguishers shall be located near the access door to the food preparation area (see 3.5.6), and another shall be located near the generator compartment.

3.5.5 Emergency lighting. The CK shall have emergency lighting which automatically activates when normal lighting is lost. Sufficient emergency lighting shall be provided for personnel to safely evacuate the CK.

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3.5.6 Doors. In operational mode (see 3.2.2), the CK shall have a door to enter the serving line, a door to exit the serving line, and a door to access the food preparation area.

3.5.7 Windows. In operational mode (see 3.2.2), the CK shall have windows which can be used for enhanced ventilation and illumination when the operational situation permits. The windows shall include insect screens, and closures to meet environmental (see 3.6) and blackout (see 3.2.15) requirements. The CK shall have a minimum of four windows in the serving area and two windows in the food preparation area. Each window shall have a usable ventilation area of at least 7 square feet.

3.5.8 Stair-ladders. The CK shall include stair-ladders for safe ingress and egress when mounted on a towed trailer (see 6.10). One set of stair-ladders shall be provided for each door (see 3.5.6).

3.5.9 Roof access steps/handholds. The CK shall have roof access steps/handholds for safe access to and from the roof of the CK when mounted on a trailer (see 6.10) and when dismounted. Each step/handhold shall be capable of supporting 400 pounds without damage to itself or the CK. All steps/handholds permanently attached to the exterior of the container shall comply with transportation requirements (see 3.2.1 and 3.4.1).

3.5.10 Non-slip flooring and steps. The floors and steps shall be covered with a non-slip material to minimize slipping hazards from water, grease, and spilled food.

3.5.11 Efficient layout. The equipment layout in the CK shall allow five people to work comfortably and conveniently. Work areas shall be arranged to minimize walking between stations, to eliminate awkward body positions and reaches, and to provide adequate space to avoid crowding.

3.5.12 Tripping hazards. Aisles and passageways shall be free of tripping hazards such as door thresholds and other projections.

3.5.13 Surface heights. Food preparation surfaces shall have a height of 36 ± 0.5 inches from the floor.

3.5.14 Weight lifting/moving. All items designed to be carried or removed and replaced shall have handles or other suitable means for grasping, handling, and carrying. All items intended to be handled by one person shall weigh not more than 42 pounds. All items requiring more than one person to lift shall have a permanently affixed placard identifying the number of persons required to lift. Two-person, three-person, and four-person lifting limits are 84 pounds, 115 pounds, and 147 pounds, respectively, provided the load is uniformly distributed and the object is sufficiently large that the lifters do not interfere with one another. All heavy components that must be pushed horizontally (e.g., refrigerator) shall have locking wheels for repositioning them.

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3.5.15 Surface temperatures. For surfaces where momentary skin contact could occur, temperatures shall not exceed 140°F for metal surfaces and 185°F for plastic surfaces. For surfaces where direct skin contact is expected, temperatures shall not exceed 120°F for metal surfaces and 156°F for plastic surfaces.

3.5.16 Illumination. Illumination levels in the CK shall be between 50 and 75 foot-candles for all operational and maintenance tasks.

3.5.17 Noise. The steady-state noise level in the CK shall be less than 85dBA.

3.5.18 Ventilation. The CK shall provide ventilation or other protective measures to keep gases, vapors, dust, and fumes within safe limits. Intakes for ventilation systems shall be located to minimize the introduction of contaminated air from such sources as exhaust pipes.

3.5.19 Vibration. The CK shall not produce vibrations which make operators uncomfortable or otherwise interfere with the ability to perform any operational or maintenance tasks.

3.5.20 Sharp edges/moving parts. The CK shall be free from non-functional sharp edges and projections. The CK shall not have any exposed moving parts which could injure personnel.

3.5.21 Flammability. Fabrics and other materials in the CK shall be non-flammable, self extinguishing, and shall not melt when exposed to flame or high heat.

3.5.22 Toxicity. Materials used in the CK shall not cause skin irritations or other injuries, and shall not produce vapor hazards, including the emission of toxic or noxious odors, to personnel in the CK under all environmental conditions.

3.6 Environmental requirements.

3.6.1 Temperature. The CK shall be capable of set up, tear down, and operation in ambient temperature ranges of -25°F to 120°F with 8% relative humidity, and at 105°F with 88% relative humidity.

3.6.2 Rain/water. The CK, in operational and transportation modes, shall not permit water intrusion.

3.6.3 Humidity. The CK, in operational and transportation modes, shall be capable of withstanding daily exposure of up to 97% humidity, and exposure of 100% relative humidity (with condensation) for short periods of time without evidence of corrosion, structural damage, degradation, or permanent deformation.

3.6.4 Marine atmosphere. The CK shall be capable of operation and transportation when exposed to a marine environment equivalent to 25 lb/acre/yr (2.0 g/m²/yr) salt solution without experiencing corrosion or other degradation.

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3.6.5 Sand/dust. The CK shall remain operable in sand and dust conditions.

3.6.6 Fungus. The CK shall be impervious to fungus growth.

3.6.7 Storage. The CK shall start and operate after storage at temperatures of -50°F to 160°F with no evidence of damage or degradation.

4. VERIFICATION

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

- a. First article inspection (see 4.1.1)
- b. Conformance inspection (see 4.1.2)

4.1.1 First article inspection. When a first article is required (see 3.1 and 6.2), a sample shall be examined for all the verifications indicated in table V.

4.1.2 Conformance inspection. Conformance inspections shall consist of all the verifications indicated in table V. Sampling for this inspection shall be as specified in the contract or purchase order (see 6.2).

TABLE V. Verification matrix

Requirement	Requirement paragraph	Verification paragraph	FA*	C**
Operating requirements				
Transportation mode	3.2.1	4.4.3.1	X	X
Operational mode	3.2.2	4.4.1	X	X
Meal preparation	3.2.3	4.4.2	(1)	
Set up and tear down	3.2.4	4.4.4.1	X	X
Integrated equipment	3.2.5	4.4.1	X	X
Environmental control	3.2.6	4.4.4.2	(1)	
Exhaust system	3.2.7	4.4.2	(1)	
Refrigerator	3.2.8	4.4.2	X	X
Heated cabinet	3.2.9	4.4.2	X	X
Hand-washing capability	3.2.10	4.4.2	X	X
Floor drain	3.2.11	4.4.1	X	X
Storage areas	3.2.12	4.4.1	X	X
Leveling	3.2.13	4.4.1	X	X
Sanitation	3.2.14	4.4.3.2	X	X

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Requirement	Requirement paragraph	Verification paragraph	FA*	C**
Blackout capability	3.2.15	4.4.4.3	(1)	
Interface and interoperability requirements				
Electrical system	3.3.1.1	4.4.1, 4.4.3.3	X	X
External power	3.3.1.2	4.4.1	X	X
Electrical connectors	3.3.1.3	4.4.1	X	X
MBU electrical interface	3.3.1.4	4.4.1	X	X
Convenience outlets	3.3.1.5	4.4.1	X	X
Power switches	3.3.1.6	4.4.1	X	X
Overload protection	3.3.1.7	4.4.1	X	X
Emergency shut-off	3.3.1.8	4.4.4.4	X	X
Potable water	3.3.2	4.4.1	X	X
Wastewater	3.3.3	4.4.1	X	X
Generator	3.3.4	4.4.1	X	X
MBU refuel capability	3.3.5	4.4.1	X	X
Field oven exhaust	3.3.6	4.4.1	X	X
Weapons rack	3.3.7	4.4.1	X	X
Support or ownership requirements				
Rail transport	3.4.1.1	4.4.5.1	(1)	
Fixed wing transport	3.4.1.2	4.4.5.2	(1)	
Helicopter Sling Load transport	3.4.1.3	4.4.5.3	(1)	
Ground mobility	3.4.1.4	4.4.5.4	(1)	
Forklift transport	3.4.1.5	4.4.5.5	X	X
System weight	3.4.2	4.4.1	X	X
Roof loads	3.4.3	4.4.5.6	X	X
Reliability	3.4.4	4.4.4.5	(1)	
Preventative maintenance	3.4.5	4.4.2	(1)	
Accessibility	3.4.6	4.4.4.6	X	X
Support equipment	3.4.7	4.4.2	X	X
Finish	3.4.8	4.4.1, 4.4.3.4	X	X
Identification plate	3.4.9	4.4.1	X	X
Ozone-depleting substances	3.4.10	4.4.3.5	X	X
Human-system integration requirements				
Instruction and warning placards	3.5.1	4.4.1	X	X
Human factors	3.5.2	4.4.2	(1)	
Uncontrolled hazards	3.5.3	4.4.2	X	X
Fire protection	3.5.4	4.4.1	X	X
Emergency lighting	3.5.5	4.4.1	X	X
Doors	3.5.6	4.4.1	X	X
Windows	3.5.7	4.4.1	X	X
Stair-ladders	3.5.8	4.4.1	X	X

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Requirement	Requirement paragraph	Verification paragraph	FA*	C**
Roof access steps/handholds	3.5.9	4.4.5.7	X	X
Non-slip flooring and steps	3.5.10	4.4.2	(1)	
Efficient layout	3.5.11	4.4.2	(1)	
Tripping hazards	3.5.12	4.4.1	X	X
Surface heights	3.5.13	4.4.1	X	X
Weight lifting/moving	3.5.14	4.4.1	X	X
Surface temperatures	3.5.15	4.4.2	X	X
Illumination	3.5.16	4.4.1	X	X
Noise	3.5.17	4.4.2	X	X
Ventilation	3.5.18	4.4.5.8	X	X
Vibration	3.5.19	4.4.2	(1)	
Sharp edges/moving parts	3.5.20	4.4.1	X	X
Flammability	3.5.21	4.4.5.9	X	X
Toxicity	3.5.22	4.4.3.6	X	X
Environmental requirements				
Temperature	3.6.1	4.4.5.10	(1)	
Rain/water	3.6.2	4.4.5.11	(1)	
Humidity	3.6.3	4.4.5.12	(1)	
Marine atmosphere	3.6.4	4.4.5.13	(1)	
Sand/dust	3.6.5	4.4.5.14	(1)	
Fungus	3.6.6	4.4.5.15	(1)	
Storage	3.6.7	4.4.5.16	(1)	

(1) These tests shall be performed as part of the contractor first article test only when specified in the contract or purchase order (see 6.2).

* First article inspection

** Conformance inspection

4.2 Order of verifications. Certifications (see 4.4.3) and examinations (see 4.4.1) shall be conducted before all other verifications listed in table V. All remaining verifications can be performed in any order.

4.3 Verification alternatives. The contractor may propose alternative test methods, techniques, or equipment, including the application of statistical process control, tool control, or cost-effective sampling procedures to verify performance (see 6.4).

4.4 Verification methods. Verification methods can include visual examination, measurement, testing, simulation, modeling, engineering evaluation, component properties analysis, certification and similarity to previously-approved or previously-qualified designs.

4.4.1 Examinations. Examinations are nondestructive verifications which can include use of human senses, simple physical manipulation, and mechanical and electrical gauging and

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measurements. Examinations shall be used to verify that the performance criteria in section 3 have been satisfied for the following requirements.

- a. Operational mode (see 3.2.2)
- b. Integrated equipment (see 3.2.5)
- c. Floor drain (see 3.2.11)
- d. Storage areas (see 3.2.12)
- e. Leveling (see 3.2.13)
- f. Electrical system (see 3.3.1.1)
- g. External power (see 3.3.1.2)
- h. Electrical connectors (see 3.3.1.3)
- i. MBU electrical interface (see 3.3.1.4)
- j. Convenience outlets (see 3.3.1.5)
- k. Power switches (see 3.3.1.6)
- l. Overload protection (see 3.3.1.7)
- m. Potable water interface (see 3.3.2)
- n. Wastewater interface (see 3.3.3)
- o. Generator interface (see 3.3.4)
- p. MBU refuel capability (see 3.3.5)
- q. Field oven exhaust interface (see 3.3.6)
- r. Weapons rack (see 3.3.7)
- s. System weight (see 3.4.2)
- t. Finish (see 3.4.8)
- u. Identification plate (see 3.4.9)
- v. Instructions and warning placards (see 3.5.1)
- w. Fire protection (see 3.5.4)
- x. Emergency lighting (see 3.5.5)
- y. Doors (see 3.5.6)
- z. Windows (see 3.5.7)
- aa. Stair-ladders (see 3.5.8)
- bb. Tripping hazards (see 3.5.12)
- cc. Surface heights (see 3.5.13)
- dd. Weight lifting/moving (see 3.5.14)
- ee. Illumination (see 3.5.16)
- ff. Sharp edges/moving parts (see 3.5.20)

4.4.2 Operational demonstration. An operational demonstration will be conducted using representative user troops to operate and maintain the CK, preparing two meals a day for 550 soldiers. Operational demonstration shall be used to verify that the performance criteria in section 3 have been satisfied for the following requirements. For requirements which are not

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easily measured or demonstrated (e.g., efficient layout, see 3.5.11), verification will rely on user feedback from the operational demonstration.

- a. Meal preparation (see 3.2.3)
- b. Exhaust system (see 3.2.7)
- c. Refrigerator (see 3.2.8)
- d. Heated cabinet (see 3.2.9)
- e. Hand-washing capability (see 3.2.10)
- f. Preventative maintenance (see 3.4.5)
- g. Support equipment (see 3.4.7)
- h. Human factors (see 3.5.2)
- i. Uncontrolled hazards (see 3.5.3)
- j. Non-slip flooring and steps (see 3.5.10)
- k. Efficient layout (see 3.5.11)
- l. Surface temperatures (see 3.5.15)
- m. Noise (see 3.5.17)
- n. Vibration (see 3.5.19)

4.4.3 Certifications.

4.4.3.1 Transportation mode certification. The contractor shall certify that the CK in transportation mode meets the dimensional requirements of ISO Standard 668 and ISO Standard 1161. The contractor shall certify that the CK meets the testing requirements of ISO Standard 8323 and ISO Standard 1496-1. The contractor shall receive a written Certificate for Safe Containers from the Coast Guard for the CK.

4.4.3.2 Sanitation certification. The contractor shall certify that all surfaces meet the requirements of NSF International Standard No. 2.

4.4.3.3 Electrical system certification. The contractor shall certify that the electrical system meets the requirements of NFPA Standard No. 70.

4.4.3.4 Finish certification. The contractor shall certify that the finish meets the test requirements of MIL-C-53072.

4.4.3.5 Ozone-depleting substances certification. The contractor shall certify that no refrigerant used in the CK is listed in publication SD-14 (see 6.7).

4.4.3.6 Toxicity certification. The contractor shall certify that materials used in the CK do not produce toxic exposure exceeding the limits specified in the American Conference of Government Industrial Hygienists (ACGIH) Threshold Limit Values (TLVs) and Biological Exposure Indices (BEIs).

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4.4.4 Demonstrations.

4.4.4.1 Set up and tear down demonstration. Measure the time required for four military personnel and a supervisor to set up and tear down the CK. Setup begins with the CK configured for transportation. Setup will be considered complete when the system is leveled, all components have been moved to their final positions, all external interfaces (e.g., water, electric) have been connected, and meal preparation may begin. Tear down begins with the CK configured for meal preparation. Tear down will be considered complete when the CK has been returned to transportation mode. Time required to set up and to tear down shall not exceed 45 minutes each. If set up or tear down requires electrical power, verify that non-electric backup provisions and procedures are provided.

4.4.4.2 Environmental control demonstration. When performing the extreme temperature tests (see 4.4.5.10), verify that the CK maintains an internal temperature of greater than 60°F and a Wet Bulb Globe Temperature (WBGT) Index of less than 90°F using time weighted averages taken at five minute intervals, measured where the operators are working (i.e., not directly over the grill). After set up (see 3.2.4), allow the CK not more than 45 minutes to bring the interior temperature into the acceptable range. Measure the temperature difference between head level and floor level to be 10°F or less. The equation to determine the WBGT Index is (where NWB is the Natural Wet-Bulb Temperature, and GT is the Globe Temperature):

$$\text{WBGT} = 0.7 \times \text{NWB} + 0.3 \times \text{GT}$$

4.4.4.3 Blackout capability demonstration. Perform this demonstration on the CK in operational mode with blackout provisions deployed. While operating the CK for a simulated meal (see 6.15), verify that no visible light is detected using the naked eye from a distance of 300 feet. Begin observations by looking for light 360 degrees around the CK in 45 degree increments. After completion of the 360-degree measurement, monitor all door openings for the remaining meal preparation time.

4.4.4.4 Emergency shut-off demonstration. Verify that the CK has an emergency shut-off switch located near the food preparation area access door. With the CK in operational mode, demonstrate that the switch shuts down the entire electrical system. Examine the power control panel to verify that it is completely de-energized. Conduct the demonstration once using the generator and once using an external power source.

4.4.4.5 Reliability demonstration. The CK will be evaluated as a group of sub-components which contribute to the system overall reliability demonstration. The CK shall demonstrate essential function reliability by completing the operational demonstration (see 4.4.2) without equipment failure or accepted fix and validation. Emphasis will be put on the transportability as a means of simulating the most critical environment the system needs to withstand. All sub-components failures occurring during test will require a contractor proposed fix and validation that is approved by the Army as a requirement for test completion and reliability validation. An essential function failure (EFF) is an event resulting in loss or degradation of cooking,

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refrigeration, climate control, ventilation, lighting, power generation, water distribution, mobility, or overall operability function. A system abort (SA) is any EFF or combination of EFFs that prevent the CK from producing a scheduled hot meal, that renders the system unable to enter service or causes immediate removal from service, or an event posing threat of serious injury to personnel or equipment.

4.4.4.6 Accessibility demonstration. Verify accessibility during the preventative maintenance demonstration (see 4.4.2), by demonstrating that all components and assemblies are easily accessible for maintenance, service, and replacements with minimum disturbance to other components. Verify that major components are accessible for maintenance by removing and replacing the generator and environmental control unit.

4.4.5 Tests.

4.4.5.1 Rail test. Test the CK in transportation mode, with and without its trailer, in accordance with test method standard MIL-STD-810, Method 516.4, Procedure VIII, rail impact. Upon completion of the test, verify that the CK has no damage that renders it unsuitable for use. Certification that the CK meets the requirements for movement by rail shall be obtained from the Director, Military Traffic Management Command (MTMTTEA), ATTN: MTTE-DPE, 720 Thimble Shoals Road, Suite 130, Newport News, VA 23606-0276.

4.4.5.2 Fixed wing test. Test the CK in transportation mode to determine suitability for fixed wing transportation (see 6.12). Upon completion of the tests, verify that the CK has no damage that renders it unsuitable for use. Certification that the CK meets the requirements for movement by fixed-wing aircraft shall be obtained from the HQ, ASC/ENFC, Building 560, 2530 Loop Road West, Wright-Patterson Air Force Base, OH 45433-7101.

4.4.5.3 Helicopter Sling Load (HSL) test. Test the CK in transportation mode, with its trailer, for compliance with MIL-STD-209 using a CH-47D helicopter. Upon completion of the test, verify the CK has no damage that renders it unsuitable for use. Certification that the CK meets the requirements for movement by CH-47D helicopter shall be obtained from the U.S. Army Natick Research, Development and Engineering Center, ATTN: SSCNC-UAS, Natick, MA 01760-5017.

4.4.5.4 Ground mobility test. Test the CK/trailer combination by transporting it over 3000 miles of road courses simulating 30% primary roads, 65% secondary roads, and 5% cross country travel. After every 500 miles of ground mobility testing, set up the CK, inspect it for signs of damage, and verify that all components are still functional. After 3000 miles, set up the CK and operate it for a simulated meal (see 6.15).

4.4.5.5 Forklift test. Examine the CK to have forklift pockets that conform to ISO dimensional requirements for both loaded and unloaded containers. Using a forklift, lift the CK in transportation mode four feet off the ground for ten minutes. Then, lower the CK to a height of one foot above the ground, and move it 50 feet forward and 50 feet back. Repeat this process for

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each set of forklift pockets. Inspect the CK for damage and deformation. Minor abrasions caused by the forklift tines do not constitute failure of this test.

4.4.5.6 Roof loads test. Place a 330-pound load over two 1-square foot areas at the weakest point of the fixed roof, and at various locations representing the spots where personnel will be positioned for setting up, tearing down, operating, and maintaining the CK. During the test, locate the two loaded areas no more than three feet apart. At each location, apply the load for a minimum of ten minutes. To simulate a snow load, subject the roof surfaces of the CK in operational mode to a uniform load of 40 pounds per square foot for five minutes. Visually inspect the CK for evidence of structural damage, delamination, popped seals, panel separation, etc., both during the application of and after the removal of the applied loads.

4.4.5.7 Roof access steps/handholds test. Apply a vertical load of 400 pounds for one minute to the outermost point of each deployed step/handhold, one at a time. For handhold(s) on the roof, apply a horizontal load of 400 pounds for one minute to the outermost point of the deployed handhold. After applying each load, inspect the container and the step/handhold for damage or deformation.

4.4.5.8 Ventilation test. Using analytical methods referenced in the OSHA Technical Manual (OTM), test air quality in the CK during meal preparation to be within the Permissible Exposure Limits (PELs) specified by Occupational Safety and Health Administration (OSHA) Standard No. 1910.1000. Using methods referenced in the NIOSH Manual of Analytical Methods (NMAM), test the air quality to be within the limits specified in the American Conference of Government Industrial Hygienists (ACGIH) Threshold Limit Values (TLVs). Verify that ventilation intakes are not located near exhaust pipes.

4.4.5.9 Flammability test. Test all fabrics and films in accordance with NFPA Standard No. 701. Verify that the fabric and other materials in the CK self-extinguish within 2 seconds after exposure to the flame source for 12 seconds. Measure the char length on the 12-inch by 2-inch sample strip to be less than 6 inches. Verify that there is no flaming melt drip, or melted or molten pieces of fabric at any time.

4.4.5.10 Temperature test. Perform this test for each of the three following temperature conditions: -25°F, 120°F at 8% relative humidity, and 105°F at 88% relative humidity. For each condition, soak the CK for at least one hour. Then set up the CK, operate it for a simulated meal (see 6.15), and tear it down. Verify that in these conditions the CK meets all requirements, giving special attention to the requirements in 3.2.3, 3.2.4, and 3.2.6.

4.4.5.11 Rain/water test. Test the CK to be waterproof in both operational mode and transportation mode without the aid of supplementary sealing, caulking, taping, etc., using a 40 PSIG water spray. Spray each external surface for 30 minutes using nozzles located 19 inches from and normal to the surface. Visually examine the CK to ensure that no water intrusion occurred, and weigh the CK to verify that the weight did not increase.

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4.4.5.12 Humidity test. Expose the CK, in both operational mode and transportation mode, to 97% relative humidity for 20 hours, and to 100% relative humidity (with condensation) for 4 hours in accordance with test method standard MIL-STD-810, Moisture Resistance test, Method 507, procedure II, cycles 4 or 5. After cycling has been completed, inspect the CK for evidence of corrosion, structural damage, degradation, or permanent deformation.

4.4.5.13 Marine atmosphere test. Expose the CK, in both operational mode and transportation mode, to a marine atmosphere and test in accordance with MIL-STD-810, Method 509.3, except that the salt solution shall have a concentration of 10% and the exposure period shall be 96 hours. After the test, inspect the CK for evidence of corrosion and degradation.

4.4.5.14 Sand/dust test. Subject the CK, in transportation mode, to blowing sand testing in accordance with MIL-STD-810, Method 510.3, procedure II. Subject all sides for 30 minutes each. The velocity of the sand stream shall be 3540 to 5700 ft/min., and the concentration shall be 2.2 ± 0.5 g/m³. Verify successful completion of the test by setting up the CK, operating it for 30 minutes, and tearing it down. Next, subject the CK, in operational mode, to blowing dust in accordance with Method 510.3, procedure I for three hours at 70°F. The velocity shall be 300 to 1750 ft/min imposed on the CK generator side. Verify successful completion of the test by operating the CK for 30 minutes and tearing it down.

4.4.5.15 Fungus test. All material components shall be certified for resistance to fungi. Where certification does not exist, that material shall be tested in accordance with MIL-STD-810, Method 508.4.

4.4.5.16 Storage test. Subject the CK, in transportation mode, to storage temperatures of 160°F and -50°F. For each temperature, soak the CK for three hours and then bring the ambient temperature to 70°F. Verify successful completion of each test by setting up the CK, operating it for 30 minutes, and tearing it down.

5. PACKAGING

5.1 Packaging. For acquisition purposes, the packaging requirements shall be as specified in the contract or order (see 6.2). When actual packaging of materiel is to be performed by DoD personnel, these personnel need to contact the responsible packaging activity to ascertain requisite packaging requirements. Packaging requirements are maintained by the Inventory Control Point's packaging activity within the Military Department or Defense Agency, or within the Military Department's System Command. Packaging data retrieval is available from the managing Military Department's or Defense Agency's automated packaging files, CD-ROM products, or by contacting the responsible packaging activity.

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6. NOTES

(This section contains information of a general or explanatory nature that may be helpful, but is not mandatory.)

6.1 Intended use. The CK will be employed at meal preparation sites generally limited to the battalion level but also may be employed at selected units and remote locations. The CK will be used to prepare up to three hot meals per day when the tactical and logistical situation permits. Food will be prepared and served from the CK at the preparation site and/or placed in insulated food containers for remote feeding. The CK will be capable of operation in temperature, humidity, and solar radiation conditions of hot and basic climates and will be capable of worldwide deployment consistent with climatic requirements. The CK will be interfaced with a towed trailer for ground transportation. The kitchen covered by this specification is military unique because there are no commercial kitchens available which offer a similar food preparation capability while meeting the transportability, environmental, interface, and cost requirements.

6.2 Acquisition requirements. Acquisition documents must specify the following:

- a. Title, number, and date of this specification
- b. Issue of DoDISS to be cited in the solicitation, and if required, the specific issue of individual documents referenced (see 2.2.1, 2.2.2, and 2.3)
- c. When a first article is required (see 3.1, 4.1.1, and 6.3)
- d. Government furnished equipment source and delivery (see 3.2.5)
- e. When additional tests are required for first article (see table V)
- f. Sampling for conformance testing (see 4.1.2)
- g. Color and type of finish paint and stenciling paint required (see 3.4.8); the paint will be in accordance with MIL-C-53072 for Army procurements
- h. Information required on the identification plate (see 3.4.9)
- i. Packaging requirements (see 5.1)
- j. When a technical manual is required (see 6.5)

6.3 First article. When requiring a first article inspection, contracting documents should provide specific guidance to offerors. This guidance should cover whether the first article is a first article sample, a first production item, or the number of test items. These documents should also include specific instructions regarding arrangements for examinations, approval of first article test results, and disposition of first articles. Pre-solicitation documents should provide Government waiver rights for samples for first article inspection to bidders offering a previously acquired or tested product. Bidders offering such products who wish to rely on such production testing must furnish evidence with the bid that prior Government approval is appropriate for the pending contract.

6.4 Verification alternatives. Contracting documents should provide guidance to offerors regarding the submission of alternatives to specified verification methods (see 4.3).

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6.5 Technical manuals. The requirement for technical manuals should be considered when this specification is applied on a contract. If technical manuals are required, specifications and standards that have been cleared and listed in DoD 5010.12-L, Acquisition Management Systems and Data Requirements Control List (AMSDL) must be listed on a separate Contract Data Requirements List (DD Form 1423), which is included as an exhibit to the contract. The technical manuals must be acquired under a separate contract line item in the contract.

6.6 Recycled, recovered, or environmentally preferable materials. Recycled, recovered, or environmentally preferable materials should be used to the maximum extent possible provided that the material meets or exceeds the operational and maintenance requirements, and promotes economically advantageous life cycle costs.

6.7 Ozone-depleting substances. A listing of ozone-depleting substances prohibited from use can be found in publication SD-14 Listing of Toxic Chemicals, Hazardous Substances, and Ozone-Depleting Chemicals. This document is available from the Standardization Documents Order Desk, 700 Robbins Avenue, Building 4D, Philadelphia, PA 19111-5094.

6.8 Army field rations. Information about army field rations can be found in the publication Operational Rations of the Department of Defense, Natick PAM 30-25. This document is available from the U.S. Army Natick Research, Development and Engineering Center, ATTN: SSCNC-WE, Kansas Street, Natick, MA 01760.

6.9 Forklifts. Some Army forklifts which will be used to lift the CK are incompatible with ISO standard forklift pocket dimensions for loaded containers, but are compatible with the pocket dimensions for unloaded containers (see 3.4.1.5).

6.10 Trailer. The towed trailer for the CK system is not part of this specification, but will be used for assessing transportability and other requirements. The trailer includes jacks which can level a load such as the CK in transportation mode (see 3.2.1 and 3.2.13). The purchase description, ATPD 2244, is available from the Standardization Documents Order Desk, 700 Robbins Avenue, Building 4D, Philadelphia, PA 19111-5094.

6.11 Human Factors. The 1988 Anthropometric Survey of U.S. Army Personnel, Natick TR-89/044, is available from the National Technical Information Service, U.S. Department of Commerce, 5285 Port Royal Road, Springfield, VA 22161.

6.12 Fixed wing transportation. Guidance for design and testing of the fixed wing transportation requirements (see 3.4.1.2 and 4.4.5.2) can be found in MIL-HDBK-1791 — Designing for Internal Aerial Delivery in Fixed Wing Aircraft. This document is available from the Standardization Documents Order Desk, 700 Robbins Avenue, Building 4D, Philadelphia, PA 19111-5094.

6.13 Expandable container. A three-for-one container has been successfully used to satisfy the requirement for sheltered floorspace in 3.2.2.

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6.14 Exhaust fans. A pair of exhaust fans, with a combined capacity of 750 cubic feet/minute at 1.00 inch static pressure, have been successfully used as part of an exhaust system which satisfies the requirements of 3.2.7.

6.15 Simulated meal. Some verifications (see 4.4.4.3, 4.4.5.4, and 4.4.5.10) require operating the CK for a simulated meal. The simulated meal will consist of five persons performing all activities, including ingress and egress of the CK, and operating all equipment, such as exhaust fans and MBUs, in a manner that closely resembles actual preparation of 550 A-Ration meals. The simulated meal will have a duration of three hours, and may include the preparation of limited quantities of food.

6.16 Subject term (keyword) listing.

Field feeding
Food
Hot meals
ISO container
Meal preparation
Mobile
Modern burner unit
Ration
Trailer

Custodian:
Army - GL

Preparing activity:
Army - GL

Review Activities:
Army - MD1, QM1

(Project 7360-A198)

STANDARDIZATION DOCUMENT IMPROVEMENT PROPOSAL

INSTRUCTIONS

1. The preparing activity must complete blocks 1, 2, 3, and 8. In block 1, both the document number and revision letter should be given.
2. The submitter of this form must complete blocks 4, 5, 6, and 7.
3. The preparing activity must provide a reply within 30 days from receipt of the form.

NOTE: This form may not be used to request copies of documents, nor to request waivers, or clarification of requirements on current contracts. Comments submitted on this form do not constitute or imply authorization to waive any portion of the referenced document(s) or to amend contractual requirements.

I RECOMMEND A CHANGE:

1. DOCUMENT NUMBER
MIL-PRF-32026 (GL)

2. DOCUMENT DATE (YYMMDD)
980603

3. DOCUMENT TITLE CONTAINERIZED KITCHEN

4. NATURE OF CHANGE (Identify paragraph number and include proposed rewrite, if possible. Attach extra sheets as needed.)

5. REASON FOR RECOMMENDATION

6. SUBMITTER

a. NAME (Last, First, Middle Initial)

b. ORGANIZATION

c. ADDRESS (Include Zip Code)

d. TELEPHONE (Include Area Code)
(1) Commercial
(2) AUTOVON
(if applicable)

7. DATE SUBMITTED
(YYMMDD)

8. PREPARING ACTIVITY

a. NAME
COMMANDER, US ARMY NATICK RD&E CENTER

b. TELEPHONE Include Area Code)
(1) Commercial (2) AUTOVON
(508) 233-5175 256-5175

c. ADDRESS (Include Zip Code) Commander
ATTN: SSCNC-WEF
NATICK, MA 01760-5018

IF YOU DO NOT RECEIVE A REPLY WITHIN 45 DAYS, CONTACT:
DEFENSE QUALITY AND STANDARDIZATION OFFICE
5203 Leesburg Pike, Suite 1403, Falls Church, VA 22401-3466
Telephone (703) 756-2340 AUTOVON 289-2340